

Case Report: Delayed treatment of tuberculosis of the elbow joint

F1000Research 2022, 10:486 Last updated: 15 JUN 2022

<https://doi.org/10.12688/f1000research.53488.2>

Desdiani Desdiani 1,2, Hidayat Rizal³, Anindita Basuki⁴, Fadilah Fadilah⁵

¹Faculty of Medicine, Universitas Sultan Ageng Tirtayasa, Cilegon, 42434, Indonesia

²Department of Pulmonology and Respiratory Medicine, Bhayangkara Brimob Hospital, Depok, 16451, Indonesia

³Department of Orthopaedic, Bhayangkara Brimob Hospital, Depok, 16451, Indonesia

⁴Department of Radiology, Bhayangkara Brimob Hospital, Depok, 16451, Indonesia

⁵Department of Medical Chemistry, Faculty of Medicine, Universitas Indonesia, Jakarta, 10430, Indonesia

Daftar Isi

Halaman Sampul

Daftar Isi

i
i
i

Article submission received 14 Mei 2021

Submitted Article

Manuscript 53488 conditionally accepted for publication 21 Mei 2021

Your Article 53488 is Now Accepted 9 Juni 2021

Unsuitable suggested reviewers for your article 53,488 11 Juni 2021

Peer review update for your article 53488 23 September 2021

Peer review update for your article 53488: request for reviewers 2 Februari 2022

Peer review report published - article has not yet passed peer review 4 April 2022

Feedback survey for F1000Research 12 April 2022

Thank you for submitting a new version of your article Case Report: Delayed treatment of tuberculosis of the elbow joint 6 Mei 2022

Thank you for submitting a new version of your article 53488

New version of your article 53488 9 Mei 2022

Peer review report or update received 6 Juni 2022

Your Article is now Publish 19 Juni 2021

New version of your article 53488 9 Mei 2022

The PDF of your article 53488 is ready for checking 11 Mei 2022

New Version of your article published on F1000Research 13 Mei 2022

The PDF of your article 53488 is ready for checking 11 Mei 2022

New Version of your article published on F1000Research 13 Mei 2022

Re: Thank you for submitting a new version of your article 53488 7 Mei 2022

Re: Peer review report or update received 16 Juni 2022

Re: Peer review report or update received 24 Juni 2022

Re: Peer review report or update received 25 Agustus 2022

Submitting the revised draft of manuscript 29 Mei 2021

Re: Peer review report or update received 15 Juni 2022

Re: Manuscript 53488 conditionally accepted for publication 29 Mei 2021

1st Revision

Open Peer Review Activity Report

Please Validate your email adress

Payment

Peer Review Report Published 4 April 2022

Thank you for submitting a new version 6 Mei 2022

Re : Thank you for submitting a new version 6 Mei 2022

Article Published 13 May 2022

Open Peer Review activity 15 Juni 2022

Published Article Online

Article submission received

Dari: editorial@f1000research.com

Kepada: desdiani@ymail.com

Tanggal: **Jumat, 14 Mei 2021** pukul 08.10 GMT+7

Dear Desdiani

Thank you for submitting your manuscript:

Case Report: Delayed treatment of tuberculosis of the elbow joint Case Report: Delayed treatment of tuberculosis of the elbow joint Desdiani D *et al.*

Funders: you have stated during the submission process that this work has been funded by:
No Funding

As of 1st September 2020, Article Processing Charges (APCs) on F1000Research are based on article type rather than article length. Charges are payable once the article has been accepted for publication. A full explanation of the price transparency breakdown for the article type categories is available [here](#).

WHAT WE DO NEXT

Before accepting your article: we will check content suitability, readability and manuscript format; adherence to ethical standards for the type of study; that the underlying data have been supplied (where appropriate); and that there is sufficient detail to enable others to replicate the study (if applicable).

Before publishing your article: if we accept your article, we will be in touch as soon as possible with any issues that need addressing. You will then receive a final proof of your article for approval, prior to publication.

WHAT YOU NEED TO DO NEXT

Before doing anything else, we need you to suggest **at least 5** suitable reviewers to peer review your manuscript following publication (in accordance with our [publishing model](#)), should it be accepted. We ask that authors do not contact reviewers directly about the peer review process. We will need your reviewer suggestions before we can publish the article so we recommend identifying them now via your [Suggest Reviewers](#) page for this article. You can also access this page via the article's record at [My Research >> Submissions](#). Please quote the article number 53488 in any correspondence.

Kind regards

The F1000Research Team

Press releasing articles: Please avoid promoting articles in the media until the article has passed the [open peer review process](#). Promotion on social media is encouraged once the article has been published; please ensure the full citation is included, as this contains the peer review status. F1000Research should be cited as the source of these articles with a link to the article.

Do not delete (filing code): F1KR00CDE F1R-VER56876-A (end code)

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Submitted Article

Case Report: Delayed treatment of tuberculosis of the elbow joint

Desdiani Desdiani^{1,2*}, Hidayat Rizal³, Anindita Basuki⁴, Fadilah Fadilah⁵

¹Department of Pulmonology and Respiratory Medicine, Faculty of Medicine, Universitas Sultan Ageng Tirtayasa, Cilegon, Banten, Indonesia 42434

²Department of Pulmonology and Respiratory Medicine, Bhayangkara Brimob Hospital, Cimanggis, Depok, Indonesia 16451

³Department of Orthopaedics, Bhayangkara Brimob Hospital, Cimanggis, Depok, Indonesia 16451

⁴Department of Radiology, Bhayangkara Brimob Hospital, Cimanggis, Depok, Indonesia 16451

⁵Department of Medical Chemistry, Faculty of Medicine, Universitas Indonesia, Jakarta – Indonesia 10430

***Corresponding author:** Desdiani Desdiani

Faculty of Medicine, Universitas Sultan Ageng Tirtayasa, Jalan Jend. Sudirman No.20, RT.10/RW.5, Kotabumi, Cilegon, Banten, Indonesia 42434.

Tel +62254280330, Fax: +62254281254

E-mail : desdiani@ymail.com

Abstract

Extrapulmonary tuberculosis (TB) is known to occur in the musculoskeletal system, and one of which occurs in the elbow joints. This case is rarely found especially because the signs and symptoms are not specific to other diseases. We report a case of a 24-years old male, complained about pain on his left elbow and noticed swelling. Initially, he complained of pain all over his left arm after several reflexology massages to alleviate his toothache. However, instead of seeking medical treatment, he visited a traditional massage therapist every week without improvement in his left arm pain for almost one year. Examination showed skin perforation with discharge. He also had fever during the first few days when the elbow became swollen. Weight loss and a decreased appetite were also noticed by the patient. The patient went to the orthopedic department and underwent surgery. Radiological examination indicated bone erosion on the left humerus and

radius, while Posteroanterior (PA) chest X-ray did not show any abnormality. Histopathological examinations from biopsy and fluid aspiration showed granulomas and data Langhans cells. *Mycobacterium tuberculosis* was found on acid-fast bacteria (AFB) smear and culture. The patient was administered multidrug TB therapy which consisted of two months' intensive phase and seven months continuation phase, in accordance with the World Health Organization guidelines for extrapulmonary TB treatment. He has currently undergone continuation phase of the treatment and his conditions have improved. Early detection of elbow joint TB could prevent damage to joint structure and impairment of joint function.

Keywords: Case report, Elbow, Arthritis, Tuberculosis, Delayed treatment

Introduction

Extrapulmonary tuberculosis (TB) is known to occur in joints with a percentage of approximately 1-3% of all TB cases of which 2-5% are rare cases that occur in the elbow joints.¹ TB is an endemic disease with the total number of cases approximately 845.000 in Indonesia.² Bone and joint dysfunction is the result of the progression of erosion and destruction, therefore early diagnosis and treatment are needed. Diagnosis is quite challenging and often late due to the non-specific symptoms.³ Joint TB is rarely detected because joint pain is not commonly considered as a symptom of joint TB, especially if there are no respiratory complaints. Thus, early diagnosis and treatment are often overlooked. We report a case of a patient with elbow joint TB who received delayed treatment because he chose to undergo traditional treatment with massage therapy at first.

Case presentation

A 24-year-old Indonesian male came to the orthopedic department of Bhayangkara Brimob hospital (Depok, Indonesia) with left arm pain and left elbow joint swelling. The patient worked in an internet rental shop. Physical examination revealed skin perforation with yellowish discharge on the left elbow. The patient experienced fever on the first few days when the left elbow became swollen, weight loss, and a decreased appetite, but no respiratory complaints.

One year prior to coming to the hospital, the patient noticed pain on his left arm. The patient then chose to undergo regular traditional massage therapy instead of seeking for medical treatments for almost one year. At the first hospital visit, the elbow pain had gotten more severe and became swollen. Within a month, discharge emerged from a small skin perforation located on the inner side of the left elbow. The patient finally went to the orthopedic department and underwent surgery.

Upon physical examination, left elbow joint appeared swollen, discharge was exuding from the perforated skin (Figure 1). The patient could not lift his left arm since it would be painful. Flexion and

extension were also difficult due to severity of the pain. The patient's social environment has a culture to seek help from local traditional massage therapist who is known to be uncertified for various health problems, and instead of recovering, the patient shows symptoms that are worsening.

Laboratory examination revealed leukocyte count of 15,000, erythrocyte sedimentation rate (ESR) of 40 mm/hour, eosinophils 9%, and monocytes 10%. Radiological examination by PA chest X-ray did not show any abnormality (Figure 2), anteroposterior (AP) and lateral projection of the left elbow joint radiographs showed erosion of the distal cortex of the humerus and radial bone, destruction of the distal cortex, and swelling of the soft tissue of the left elbow area (Figure 3).

The patient was subsequently diagnosed with TB of the elbow joint. He then underwent surgery and synovial fluid aspiration. Histopathological examination was also performed. During the left elbow arthrotomy, evacuation of white granulation tissue and drainage of thick yellow intra- and extra-articular pus were performed. Wound was irrigated with 2 L of 0.9% NaCl. Specimens were collected and sent for microbiological and pathological analyses. AFB smear and culture showed *Mycobacterium tuberculosis*. Histopathological examination showed granulomatous inflammation, swollen connective tissues containing epithelioid tubercle nests with necrotization, and Langhans cells (Figure 4). The results were consistent with TB. Furthermore, anti-Human Immunodeficiency Virus (HIV) test was negative.

The patient was given a standard regimen of TB treatment for two months of an intensive phase (rifampicin, isoniazid, pyrazinamide, and ethambutol) and seven months of a continuation phase (rifampicin and isoniazid). Currently, the patient had undergone continuation phase of the treatment. His conditions had improved, such as decreased pain, increased appetite, and weight gain. However, flexion and extension were restricted. The patient reported clinical improvement and discharge was decreased. Left elbow joint radiographs was minimal improvement (Figure 5). Computed tomography (CT) scan results showed destruction of the lateral epicondylus of the humeral bone and the processus olecranon of ulna bones, after two months of the treatment (Figure 6).

Discussion

Musculoskeletal tuberculosis occurs in about 10% of all cases that occur extrapulmonary, which commonly affects weight-bearing joints such as spine (51%), pelvis (12%), hip and femur (10%), knee and tibia (10%). Reported cases of non-weight-bearing joints such as elbow joint TB are still relatively few, and the diagnosis still often to be neglected.¹ Diagnosis of musculoskeletal TB requires the clinician's ability to pay attention to joint swelling and chronic pain, as well as their effects on joint function.⁴ Usually, respiratory and systemic symptoms are absent or only present briefly. In this report, only history of fever was identified. Radiological examination of the lungs showed no abnormality. The complaints for joint TB are often non-specific, hence diagnosed late.¹

The findings in this report are consistent with several previous studies: A study by Yazici et al reported a TB of the elbow joint case in which there were no signs and symptoms of respiration. The results of chest radiographs were still within normal limits. The diagnosis was confirmed by AFB and histopathology examinations.⁵ Another study by Guan reported osteoarticular TB with a picture of swelling and pain that was previously diagnosed as osteoarthritis. Although these cases are rare, but they are difficult to be diagnosed and can cause pain and impaired function.⁶

Radiographic changes affecting the joints may appear multiple osteolytic lesions. In addition to these, there may be erosions of the joints and swelling of the soft tissues.⁷ Unfortunately, this patient did not undergo an Magnetic Resonance Imaging examination due to the limited available facilities. Definite diagnosis requires synovial fluid aspiration. Microscopic examination and culture of fluid aspiration were very helpful, followed by histopathological results showing the caseous granuloma.⁸ These non-specific signs and symptoms were often delayed to be diagnosed as skeletal TB as reported in one study that shows the duration from the onset of complaints until the diagnosis of about 4-11 months. Additionally, some cases of skeletal TB occasionally showed negative results on AFB and culture.^{9,10}

Clinicians should not neglect to explore the history of exposure and factors that increase the risks of TB infection such as close contact with confirmed TB patients, immunocompromise (e.g. HIV infection), diabetes mellitus, and having comorbid diseases such as chronic kidney disease, hence it is necessary to screen the patient for co-infected diseases such as HIV infection, etc. Other risk factors are age (old), nutrition (low), and receiving immunosuppressive treatment.⁶ In terms of this case, the risk factors are not clear. The patient worked in an internet rental shop and had regular massages for almost one year.

In summary, the significant message in this case is early recognition of risk factors for skeletal TB and chronic symptoms, hence they can be treated properly. Early diagnosis and treatment can be achieved with careful anamnesis that does not ignore the history of close contact with confirmed case TB patients and risk factors for TB infection, clinical, radiological and laboratory examination. It is important for clinicians especially those who work in an endemic area to suspect chronic joint pain whose clinical symptoms do not improve with conventional treatment as skeletal TB as the differential diagnosis. The specific AFB smear and culture tests are still important although can occasionally show negative results. Extrapulmonary TB can be deceptive because it does not always show typical symptoms and pulmonary involvement. Prompt diagnosis and treatment is essential to prevent progression of joint damage and impaired function.

Abbreviations

AFB: Acid fast-bacteria; AP: Anteroposterior; CKD: Chronic Kidney Disease; CT: Computed tomography; ESR: Erythrocyte sedimentation rate; HIV: Human immunodeficiency virus; MRI: Magnetic resonance imaging; PA: Posteroanterior; TB: Tuberculosis; WHO: World Health Organization

Consent for publication

Written informed consent for the publication of this case report and any accompanying images was obtained from the patient. A copy of the consent form is available on request.

Patient's perspectives

Left-arm and elbow pain, swelling, and immobility made me suffer. I knew that I had to go to the hospital for further treatment. However, I was afraid of surgery and at the suggestion of my family, I underwent traditional medicine with massage therapy for almost 1 year. I didn't expect that my illness would get worse and I had to have surgery immediately and take long-term medication. Now I feel better, my arm pain and swelling of my left elbow have decreased, even though I haven't been able to move my arm to its full potential.

Authors' contributions

Desdiani Desdiani : Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Resources, Supervision, Validation, Writing-Review & Editing, Writing-Review & Original Draft Preparation; **Hidayat Rizal** : Conceptualization, Supervision, Validation ; **Anindita Basuki** : Conceptualization, Supervision, Validation; **Fadilah Fadilah** : Formal Analysis, Investigation, Supervision, Visualization, Writing-Review & Editing.

Competing interests

The authors declare that they have no potential conflict of interest with respect to the study, authorship, and/or publication of this article.

Funding

No grants were involved in supporting this work.

Supplemental Material

CARE checklist, SCARE checklist

This case report has been reported in line with the SCARE Criteria [include citation]

References:

1. Thimmaiah VT, Deepashree. Unusual presentation of tuberculosis of elbow joint: a case report. *Research & Reviews: Journal of Medical and Health Sciences*. 2013;2(4):17–20.
2. World Health Organization: WHO. Global tuberculosis report [Internet]. Who.int; 2018 [cited 2021 Apr 1]. Available from: <https://www.who.int/teams/global-tuberculosis-programme/tb-reports>
3. Broderick C, Hopkins S, Mack DJF, Aston W, Pollock R, Skinner JA, et al. Delays in the diagnosis and treatment of bone and joint tuberculosis in the United Kingdom. *Bone & Joint J*. 2018 Jan;100-B(1):119–24.
4. Pigrau-Serrallach C, Rodríguez-Pardo D. Bone and joint tuberculosis. *Eur Spine J*. 2012 Jun 19;22(S4):556–66.
5. Yazici A, Kayan G, Yaylaci S, Demir MV, Karakece E, Tamer A, et al. Tuberculous arthritis of the elbow joint: A case report. *Eur J Rheumatol*. 2016 Sep 26;3(3):142–3.
6. Guan Y, Zeng Z. Elbow arthroplasty complicated by Mycobacterium tuberculosis infection. *Medicine*. 2021 Mar 5;100(9):e24376.
7. De Backer AI, Vanhoenacker FM, Sanghvi DA. Imaging features of extraaxial musculoskeletal tuberculosis. *Indian J Radiol Imaging*. 2009;19(3):176-86.
8. Arathi N, Fayaz Ahmad, Najmul Huda. Osteoarticular tuberculosis- a three years retrospective study. *J Clin Diagn Res*. 2013;7(10):2189-2192.
9. Held MFG, Hoppe S, Laubscher M, Mears S, Dix-Peek S, Zar HJ, et al. Epidemiology of Musculoskeletal Tuberculosis in an Area with High Disease Prevalence. *Asian Spine Journal* [Internet]. 2017 Jun 30 [cited 2021 Apr 1];11(3):405–11. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5481595/>
10. Garg RK, Somvanshi DS. Spinal tuberculosis: A review. *The Journal of Spinal Cord Medicine* [Internet]. 2011 Sep [cited 2021 Apr 1];34(5):440–54. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3184481/>



Figure 1. Left elbow joint appeared swollen, discharge was exuding from the perforated skin (photo after surgery)

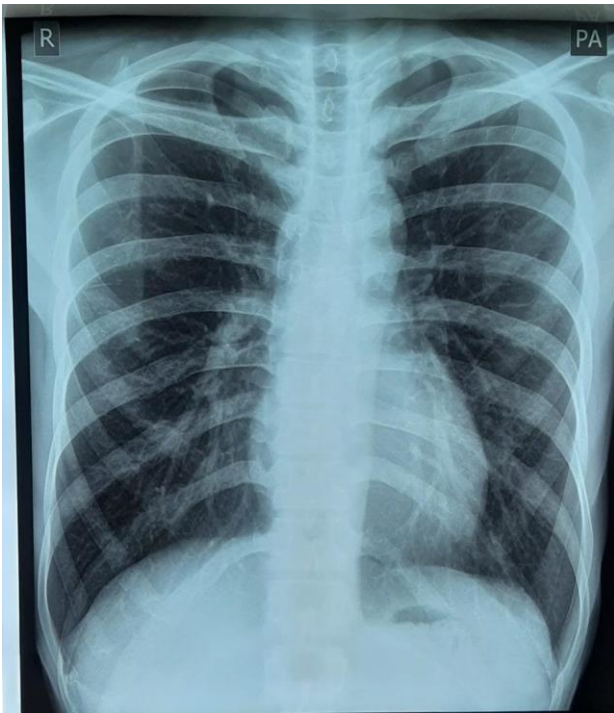


Figure 2. Radiological examination by PA chest X-ray did not show any abnormality



Figure 3. AP and lateral projection of the left elbow joint radiographs showed erosion of the distal cortex of the humerus and radial bone, destruction of the distal cortex, and swelling of the soft tissue of the left elbow area (4 February 2021)

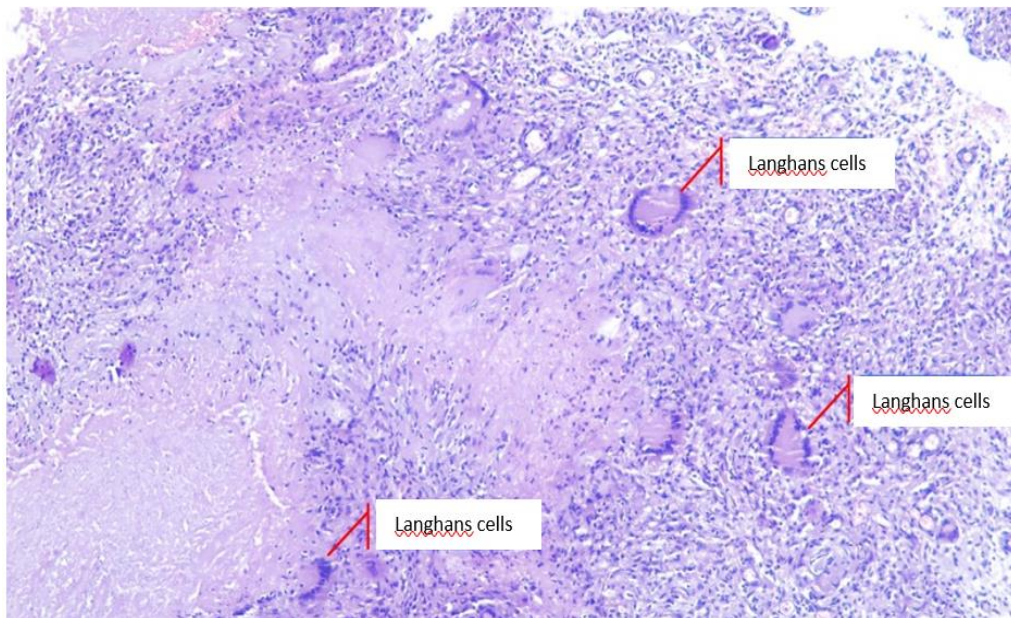


Figure 4. Granulomatous inflammation, swollen connective tissues containing epithelioid tubercle nests with necrotization, and datia Langhans cells

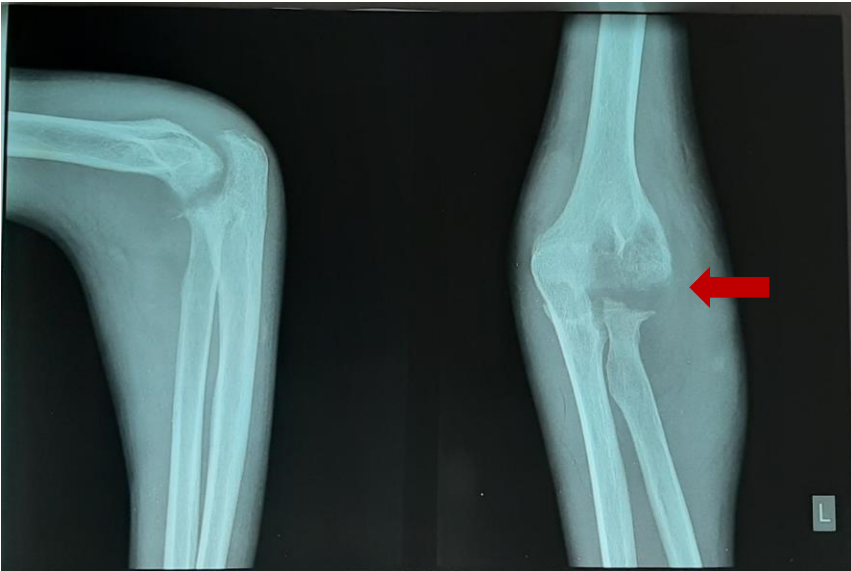


Figure 5. **Minimal improvement**, AP and lateral projection of the left elbow joint radiographs showed erosion of the distal cortex of the humerus and radial bone, destruction of the distal cortex, and swelling of the soft tissue of the left elbow area (March 2021)



Figure 6. CT scan shows destruction of the lateral epicondylus of the humeral bone and the processus olecranon of ulna bones (red arrows = humerus bones, green arrows = ulna bones)

Manuscript 53488 conditionally accepted for publication

Dari: editorial@f1000research.com

Kepada: desdiani@gmail.com

Tanggal: **Jumat, 21 Mei 2021** pukul 21.55 GMT+7

Do not delete (filing code): F1KR00CDE F1R-VER56876-A (end code)

Dear Desdiani

Case Report: Delayed treatment of tuberculosis of the elbow joint
Desdiani D, Rizal H, Basuki A and Fadilah F

Thank you for your submission to F1000Research. We have noted a few issues with your manuscript; we ask that these issues are addressed before we accept your article for publication.

Plagiarism: As standard, we run plagiarism checks to make sure that all submissions we receive are original (i.e. have not been published before) and the authors' own work. Having run these checks, we noted that your introduction and discussion sections have a high degree of similarity to another

source (<http://dx.doi.org/10.1136/bcr-2017-222735>). Please address the comments on the edited manuscript attached, **using Track Changes in Word**.

Content: We endorse the [CARE guidelines](#) for case reports; we suggest that you ensure the article adheres to the CARE checklist and add any details that are missing. Please see also the [SCARE guidelines](#) for surgical case reports. The comments in the manuscript provide some queries relating to this checklist, but these are not exhaustive.

Figure 6: In line with the [Safe Harbor method of de-identification](#), please edit the images to remove exact dates of patient care and any other patient-specific details, and include a description of the image modifications made in the figure legend.

Reviewers: As you know, F1000Research operates an author-driven publication model. This means that you will be responsible for suggesting suitable reviewers, whom we invite on your behalf, giving you an opportunity to ensure that appropriate experts review your article. Our transparent peer review process means that the peer review reports, together with the reviewers' names, will be published alongside your article. To avoid delay to the publication process, we need you to provide us with at least five potential reviewers who meet our reviewer criteria before we can publish your article - please be aware that it is likely we will need to request further reviewer suggestions after publication. Please go to your

[Suggest Reviewers](#) page, where you will find a useful

tool to help you find reviewers; use this page to track the progress of the peer review process for your article. You can

access this page directly via the article's record under My Research >> Submissions. See also our [reviewer criteria](#)

[and tips for finding reviewers](#). Please remember that suggested reviewers should have

appropriate level of experience and the right expertise to judge your article; they must be able to provide an unbiased report (e.g. they must not be recent collaborators or colleagues in your institute). All reviewer suggestions are checked by the editorial team and will be rejected if they do not meet our criteria.

Payment: As F1000Research is open access, we will require payment of the Article Processing Charge (APC) to be able to complete the processing of your submission. **Please provide us with the details of the**

individual/organization taking responsibility for paying the fee as soon as possible. Please sign in with the credentials you used to submit the article or you will not be able to access this page. Our Accounts department will be in touch regarding payment.

We have also lightly copyedited your article - please [download the document](#) and check you are happy with the amendments and **then address the queries detailed above using track changes in Word. Please return your revised manuscript to the e-mail address above.** Please note that this is your final opportunity to make any changes to the content of your manuscript. Once the typeset PDF of your manuscript has been created, we will send you a final PDF proof for checking prior to publication.

Unfortunately, should the issues detailed above not be addressed, we will not be able to continue with your submission.

Best wishes,

Léa

The Editorial Team, F1000Research

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Your article 53488 is now accepted

Dari: editorial@f1000research.com

Kepada: desdiani@ymail.com

Tanggal: Rabu, 9 Juni 2021 pukul 21.37 GMT+7

Do not delete (filing code): F1KR00CDE F1R-VER56876-A (end code)

Dear Desdiani

Case Report: Delayed treatment of tuberculosis of the elbow joint
Desdiani D, Rizal H, Basuki A and Fadilah F

We have now accepted your article for publication in F1000Research. It will be sent to the typesetters and a member of the Production team will send you a proof in due course.

One of our editorial team will be assisting you with the peer review process of your article, and will be your main contact once the article is published.

Best wishes,

Léa

The Editorial Team, F1000Research

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Unsuitable suggested reviewers for your article 53,488

Dari: editorial@f1000research.com

Kepada: desdiani@ymail.com

Tanggal: Jumat, 11 Juni 2021 pukul 17.36 GMT+7

Do not delete (filing code): F1KR00CDE F1R-VER56876-A (end code)

Dear Desdiani

Case Report: Delayed treatment of tuberculosis of the elbow joint

I hope you're well – now that your article has been accepted, I've completed the suitability checks for your referee suggestions. Unfortunately, I'm afraid that they do not all satisfy our requirements. Please bear in mind that the reviewers' names and their reports will be visible to all readers, who will recognise a lack of experience or a conflict of interest. Additionally, most reviewers decline the invitation if they feel they cannot adequately or objectively comment on an article, which leads to delays in the peer review process.

The following suggested reviewers do not appear to meet our [reviewer criteria](#):

Putri Chairani Eyanoer, Sita Laksmi Andarini, Iris Rengganis - It appears that you or your co-authors have collaborated with them relatively recently. In order to ensure an unbiased peer review process, there can be no conflicts of interest between the reviewers and authors. Please note that this includes sharing an affiliation.

We also notice that all of your reviewer suggestions are based in one country (Indonesia). Please note that in order to gain a global perspective on your article, we will need some **global** reviewer suggestions (i.e. reviewers who are based in countries around the world) from you before we can publish your article.

Please suggest 3 more reviewers so that we can proceed with the peer review. We recommend suggesting 5-10 people at a time, as the more names suggested the higher the chance someone will be available to review your article, but please continue to adhere to the reviewer criteria. Please visit your [Suggest Reviewers page](#) to add your suggestions - we also have a short explanation of our criteria and tips for finding reviewers available at <http://f1000research.com/for-authors/tips-for-finding-referees>.

We look forward to receiving your global reviewer suggestions. Please don't hesitate to get in touch if you need any assistance, we're happy to help.

Best regards,

Ana

The Editorial Team, F1000Research

Suitable reviewers must be:

- Be qualified to review (hold a PhD or MD and/or have demonstrable experience)
- An expert (demonstrable evidence of working in the same field as the article, for example recent publications as the lead author)
- Impartial (no competing interests, for example publishing with the authors or sharing an affiliation)
- Global (reviewers must come from different institutions, and ideally from around the world)

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Peer review update for your article 53488

Dari: editorial@f1000research.com

Kepada: desdiani@ymail.com

Tanggal: Kamis, 23 September 2021 pukul 21.53 GMT+7

Do not delete (filing code): F1KR00CDE F1R-VER56876-A (end code)

Dear Desdiani

[Case Report: Delayed treatment of tuberculosis of the elbow joint](#)

Desdiani D, Rizal H, Basuki A and Fadilah F

Your article has received 232 views and the PDF has been downloaded 15 times.

We have received a peer review report (with a status of: Approved) and other reviewers have agreed to review, but unfortunately their reports are very delayed, and potentially they may not be submitted. We would strongly recommend that you supply us with at least another 5 reviewer suggestions to minimize delay to the peer review process.

It sometimes happens that a reviewer who has agreed to review doesn't submit their report in a timely fashion, or doesn't provide one at all. Therefore we would recommend having some backup suggestions for reviewers to avoid any possible delay to peer review. Please send us your suggestions via [Suggest Reviewers](#), where you will find a useful tool to help you find reviewers; you can also access this page via the article's record under My Research >> Submissions. See also our [reviewer criteria and tips for finding reviewers](#).

Best regards,

Ana

The Editorial Team, F1000Research

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Peer review update for your article 53488: request for reviewers

Dari: editorial@f1000research.com

Kepada: desdiani@ymail.com

Tanggal: Rabu, 2 Februari 2022 pukul 23.22 GMT+7

Do not delete (filing code): F1KR00CDE F1R-VER56876-A (end code)

Dear Desdiani

[Case Report: Delayed treatment of tuberculosis of the elbow joint](#)

Desdiani D, Rizal H, Basuki A and Fadilah F

This article has received 327 views and the PDF has been downloaded 18 times.

While we have published one peer review report for your article, we have yet to secure a second reviewer. We would strongly suggest that you supply us with at least another 5 reviewer suggestions to minimize delay to the peer review process.

Please send us your suggestions via [Suggest Reviewers](#), where you will find a useful tool to help you find reviewers; you can also access this page via the article's record under My Research >> Submissions. See also our [reviewer criteria and tips for finding reviewers](#).

If you have any questions please don't hesitate to get in touch.

Best regards,

Ana

The Editorial Team, F1000Research

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Peer review report published - article has not yet passed peer review

Dari: editorial@f1000research.com

Kepada: desdiani@ymail.com

Tanggal: Senin, 4 April 2022 pukul 16.07 GMT+7

Do not delete (filing code): F1KR00CDE F1R-VER56876-A (end code)

Dear Desdiani

Case Report: Delayed treatment of tuberculosis of the elbow joint
Desdiani D, Rizal H, Basuki A and Fadilah F

We have published another peer review report for your article in F1000Research at <https://f1000research.com/articles/10-486/v1#referee-response-127931>.

You have now received 2 peer review reports. Some of your reviewers had reservations and therefore your article has not yet passed peer review, which prevents it being indexed in bibliographic databases. (*Once an article receives two 'Approved' statuses, or two 'Approved with Reservations' statuses and one 'Approved' status, it will be considered to have passed peer review.*)

Please let us know how you'd like to proceed:

1) You can revise your article and publish a new version, together with a response to the reviewers. We will then contact the reviewers again for comments on your revision and an updated approval status.

For information on how to submit a new version, please visit [Article Guidelines \(new versions\)](#). Please bear in mind that new submissions need to be created and submitted using the submitting author's account.

2) Alternatively, if you wish to continue with the peer review and try to receive further reviewers opinions before you revise, please continue to suggest additional reviewers, via your [Suggest Reviewers](#) page, where you will find a useful tool to help you find reviewers; you can also access this page via the article's record under My Research >> Submissions.

It is your decision which option you wish to pursue. If we do not hear otherwise, we assume that you are revising and look forward to hearing from you when you are ready with your submission.

If you wish to respond directly to the reviewer by adding a comment to their report (now, or at a later stage), please click the 'Respond to this report' button below the report. When responding to a peer review report, please try and make sure you are logged into the account that you originally used for the submission of this article, otherwise we cannot identify your response as being from an author. Please allow up to one working day for your comment to appear (comments explaining changes in the revised version of your article are usually published at the same time as the revised version).

Best regards,

Ana
The Editorial Team, F1000Research

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Feedback survey for F1000Research

Dari: editorial@f1000research.com

Kepada: desdiani@ymail.com

Tanggal: Selasa, 12 April 2022 pukul 09.09 GMT+7

Do not delete (filing code): F1KR00CDE F1R-VER56876-A (end code)

Dear Desdiani

Thank you for choosing to publish in F1000Research, we would greatly appreciate your feedback on our service by asking you a few questions about your experience with us. This short survey will only take a few minutes to complete - please click [here](#) to begin.

Your responses will be kept secure and confidential. However, you will have the option to include your name, which will allow us respond directly to you regarding any points that you may raise.

Thank you for your time.

Best regards

The F1000Research Team

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Thank you for submitting a new version of your article Case Report: Delayed treatment of tuberculosis of the elbow joint

Dari: editorial@f1000research.com

Kepada: desdiani@ymail.com

Tanggal: Jumat, 6 Mei 2022 pukul 06.01 GMT+7

Dear Desdiani

Thank you for submitting a new version of your article:

Case Report: Delayed treatment of tuberculosis of the elbow joint

Desdiani D *et al.*

WHAT WE DO NEXT

We will check your submission to make sure we have all the files and information we need and will be in touch in the next two to three working days. You will receive a final proof of your article for approval, prior to publication. At that point, we usually contact the reviewers who reviewed the previous version of the article for any further comments or changes to the status they originally awarded your article.

WHAT YOU NEED TO DO NEXT

Nothing, just relax and we will be in touch shortly. Don't forget you can track the progress of your article via [My Research >> My Submissions](#).

Please bear in mind that it is possible the reviewers of your previous version might not be available to review this version. If this is the case and further reviews are required, we will be in touch to discuss the best way to proceed, which may involve asking for further reviewer suggestions.

Please quote the article number 53488 in any correspondence.

Kind regards

The F1000Research Team

Press releasing articles: Please avoid promoting articles in the media until the article has passed the [open peer review process](#). Promotion on social media is encouraged once the article has been published; please ensure the full citation is included, as this contains the peer review status. F1000Research should be cited as the source of these articles with a link to the article.

Do not delete (filing code): F1KR00CDE F1R-VER133791-A (end code)

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Thank you for submitting a new version of your article 53488

Dari: editorial@f1000research.com

Kepada: desdiani@ymail.com

Tanggal: Jumat, 6 Mei 2022 pukul 17.14 GMT+7

Do not delete (filing code): F1KR00CDE F1R-VER133791-A (end code)

Dear Desdiani

Case Report: Delayed treatment of tuberculosis of the elbow joint
Desdiani D, Rizal H, Basuki A and Fadilah F

Thank you for submitting a new version of your article to F1000Research. We have noted a few minor issues with your manuscript (below) – once these are addressed we will proceed with the publication of this version.

Unfortunately, for us to process new versions, they need to be submitted on the word document version of the most recently published article. This is to ensure all editorial changes are present on the version 2, including those made to the version 2 pdf proof. Please [download the document](#) and transfer your revisions to this document with tracked changes enabled and return the file to us at this email address, that would be much appreciated.

Please note that this is the last opportunity to make any changes to the content of your manuscript. Once the typeset PDF of your manuscript has been made, we will send you a final PDF proof for checking prior to publication.

Best regards,

Manahil
The Editorial Team, F1000Research

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

New version of your article 53488

Dari: editorial@f1000research.com

Kepada: desdiani@ymail.com

Tanggal: Senin, 9 Mei 2022 pukul 19.00 GMT+7

Do not delete (filing code): F1KR00CDE F1R-VER133791-A (end code)

Dear Desdiani

Case Report: Delayed treatment of tuberculosis of the elbow joint
Desdiani D, Rizal H, Basuki A and Fadilah F

The new version of your F1000Research article is now ready for publication. It will be sent to the typesetters and then published in due course, at which point you will receive a link to the paper online. Should we have any queries during this process, the Production team will be in contact.

Best regards,

The Editorial Team, F1000Research

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Peer review report or update received

Dari: editorial@f1000research.com

Kepada: desdiani@ymail.com

Tanggal: Senin, 6 Juni 2022 pukul 17.22 GMT+7

Do not delete (filing code): F1KR00CDE F1R-VER133791-A (end code)

Dear Desdiani

Case Report: Delayed treatment of tuberculosis of the elbow joint
Desdiani D, Rizal H, Basuki A and Fadilah F

I'm writing to inform you that Musofa Rusli has reviewed version 2 of your article and has maintained their original status of 'Approved'. You can read their comments [here](#).

If you wish to respond directly to the reviewer by adding a comment to their report (now, or at a later stage), please click the 'Respond to this report' button below the peer review report. When responding to a peer review report, please try and make sure you are logged into the account that you originally used for the submission of this article, otherwise we cannot identify your response as being from an author. Please allow up to one working day for your comment to appear (comments explaining changes in the revised version of your article are usually published at the same time as the revised article).

Best regards,

Charlie
The Editorial Team, F1000Research

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Your article is now published

Dari: production@f1000research.com

Kepada: desdiani@ymail.com

Tanggal: Sabtu, 19 Juni 2021 pukul 00.06 GMT+7

Dear Desdiani,

I'm pleased to let you know that your article: "Case Report: Delayed treatment of tuberculosis of the elbow joint" has just been [published on F1000Research](#).

The Peer Review Process

We are now inviting the reviewers you have suggested. As part of their reports, reviewers are asked to provide a recommendation of 'Approved', 'Approved with Reservations' or 'Not Approved', and their report will be published alongside the article with their full name and affiliation. You will be able to respond to any published reports with a comment and/or by publishing revisions as a new version of your article – we will send you instructions on how to proceed when you begin to receive reports.

It is important that authors do not contact the reviewers directly, as this could result in invalidating their report.

Please note that we will ask you for additional reviewer suggestions if the invited reviewers decline. In order to avoid any delays with the peer review of your article, please continue to check your [Suggest Reviewers](#) page for updates and respond to any email requests as soon as you can.

Linking Your Data

Now that your article has been published and assigned a DOI ([10.12688/f1000research.53488.1](https://doi.org/10.12688/f1000research.53488.1)) we would strongly recommend that you include this DOI in the metadata of any published dataset associated with this article. If you would like assistance with this, please [contact our editorial team](#).

Increasing Discoverability

Now that your article has been published, why not take advantage of the tools we provide to help maximize your article's reach and share your article using the Email and Share options on the article page.

Your article will be listed in ePMC shortly as a preprint, and then updated once it has passed peer review.

Regards

Zena Nyakoojo
Senior Managing Editor, F1000Research

Press releasing articles: Please avoid promoting articles in the media until the article has passed the [open peer review process](#). Promotion on social media is encouraged once the article has been published; please ensure the full citation is included, as this contains the peer review status. F1000Research should be cited as the source of these articles with a link to the article.

Do not delete (filing code): F1KR00CDE F1R-VER56876-A (end code)

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

The PDF of your article 53488 is ready for checking

Dari: production@f1000research.com

Kepada: desdiani@ymail.com

Tanggal: Rabu, 11 Mei 2022 pukul 22.12 GMT+7

Do not delete (filing code): F1KR00CDE F1R-VER133791-A (end code)

Dear Desdiani

Case Report: Delayed treatment of tuberculosis of the elbow joint
Desdiani D, Rizal H, Basuki A and Fadilah F

Please click [here](#) to download the PDF proof of your F1000Research article.

Note: Content mismatched with Version 1, so we have followed word file, please check.

Please look through the article and let me know if it requires any corrections or if you are happy for it to be published as it is. Please also confirm the following details are correct:

- All author names are spelled correctly
- Authors are listed in the correct order
- Affiliations for all authors are accurate
- The information in the Copyright section is correct
- All figures and figure legends are correct
- All external files, including data files are correct
- All links within the article are working, and correct

Please note that connecting an ORCID account to F1000Research requires the account holder to sign in to both F1000Research and ORCID, **therefore it isn't possible for us to add ORCID badges for your co-authors on their behalf.** When the article is published, they will receive an email encouraging them to connect their ORCID account to F1000Research. If they do this, their ORCID badge will be displayed next to their name.

Corrections at this stage may require further typesetting and therefore cause some delays. If any corrections are necessary, please mark them directly on the PDF file using the commenting and markup tools in software such as Adobe Reader.

Please return your proof corrections to us via email - please note that after the article has been published, any requests for minor corrections will only be considered on a case-by-case basis. Therefore, we encourage you to check your proofs carefully at this stage.

If there are any outstanding queries on your reviewer suggestions, then we will be in touch with you shortly.

Best regards,

Rosie

The Editorial Team, F1000Research

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

New Version of your article published on F1000Research

Dari: production@f1000research.com

Kepada: desdiani@ymail.com

Tanggal: Jumat, 13 Mei 2022 pukul 18.48 GMT+7

Dear Desdiani,

I'm pleased to let you know that your article: "Case Report: Delayed treatment of tuberculosis of the elbow joint" has just been [published on F1000Research](#).

The Peer Review Process

If peer review reports have previously been published on your article, we are currently in the process of re-contacting these reviewers to ask if they are available to re-review your revised article. Peer reviewers are given the opportunity to update their previously assigned Report Status and provide any additional feedback they may have. We will be in touch to let you know if and when any updated peer review reports for your article are published. If your article is still in need of additional reports, please provide additional reviewer suggestions via the [Suggest Reviewers](#) page; this page can also be accessed via the article's record at [My Research >> Submissions](#).

It is important that authors do not contact the reviewers directly, as this could result in invalidating their peer review reports.

Please note that we will ask you for additional suggestions if your original reviewers decline. In order to avoid any delays with the peer review of your article, please continue to check your [Suggest Reviewers](#) page for updates and respond to any email requests as soon as you can.

Increasing Discoverability

Now that this new version of your article has been published, you can maximize its reach by using the Email and Share options on the article page.

The ePMC record for this article has been updated to reflect the new version, and if a previous version has already passed peer review it will also be updated with the relevant indexers.

Regards

Zena Nyakoojo
Senior Managing Editor, F1000Research

Press releasing articles: Please avoid promoting articles in the media until the article has passed the [open peer review process](#). Promotion on social media is encouraged once the article has been published; please ensure the full citation is included, as this contains the peer review status. F1000Research should be cited as the source of these articles with a link to the article.

Do not delete (filing code): F1KR00CDE F1R-VER133791-A (end code)

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Re: Thank you for submitting a new version of your article 53488

Dari: desdiani - (desdiani@ymail.com)

Kepada: editorial@f1000research.com

Tanggal: Sabtu, 7 Mei 2022 pukul 03.55 GMT+7

Dear editor F1000Research,

Here we submit a new version of our manuscript with title "Case Report: Delayed treatment of tuberculosis of the elbow joint". Thank you for your attention.

Best Regards,
Desdiani Desdiani

Pada Jumat, 6 Mei 2022 17.14.05 GMT+7, editorial@f1000research.com <editorial@f1000research.com> menulis:

Do not delete (filing code): F1KR00CDE F1R-VER133791-A (end code)

Dear Desdiani

Case Report: Delayed treatment of tuberculosis of the elbow joint
Desdiani D, Rizal H, Basuki A and Fadilah F

Thank you for submitting a new version of your article to F1000Research. We have noted a few minor issues with your manuscript (below) – once these are addressed we will proceed with the publication of this version.

Unfortunately, for us to process new versions, they need to be submitted on the word document version of the most recently published article. This is to ensure all editorial changes are present on the version 2, including those made to the version 2 pdf proof. Please [download the document](#) and transfer your revisions to this document with tracked changes enabled and return the file to us at this email address, that would be much appreciated.

Please note that this is the last opportunity to make any changes to the content of your manuscript. Once the typeset PDF of your manuscript has been made, we will send you a final PDF proof for checking prior to publication.

Best regards,

Manahil
The Editorial Team, F1000Research

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Re: Peer review report or update received

Dari: desdiani - (desdiani@ymail.com)

Kepada: editorial@f1000research.com

Tanggal: Kamis, 16 Juni 2022 pukul 20.36 GMT+7

Dear Charlie,

I have respond the comments of second reviewer and will wait for the next instructions from editorial of F1000Research. Thank you for your attention.

Best Regards,
Desdiani

Pada Rabu, 15 Juni 2022 18.39.37 GMT+7, editorial@f1000research.com <editorial@f1000research.com> menulis:

Do not delete (filing code): F1KR00CDE F1R-VER133791-A (end code)

Dear Desdiani

Case Report: Delayed treatment of tuberculosis of the elbow joint
Desdiani D, Rizal H, Basuki A and Fadilah F

I'm writing to inform you that Yunita Arliny has reviewed version 2 of your article and has changed their previous status from 'Approved with Reservations' to 'Approved'. You can read their comments [here](#).

As your article has now received the required approval from the reviewers to be indexed, it should appear on PubMed, PMC, Scopus, Embase and other indexing sites within a few weeks.

Although your article has now passed peer review, you can still revise or update it at any point now or in the future. For information on how to submit a new version, please visit [Article Guidelines \(new versions\)](#). Please bear in mind that new submissions need to be created and submitted using the submitting author's account.

If you wish to respond directly to the reviewer by adding a comment to their report (now, or at a later stage), please click the 'Respond to this report' button below the peer review report. When responding to a peer review report, please try and make sure you are logged into the account that you originally used for the submission of this article, otherwise we cannot identify your response as being from an author. Please allow up to one working day for your comment to appear (comments explaining changes in the revised version of your article are usually published at the same time as the revised article).

Best regards,

Charlie
The Editorial Team, F1000Research

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Re: Peer review report or update received

Dari: desdiani - (desdiani@ymail.com)

Kepada: editorial@f1000research.com

Tanggal: Jumat, 24 Juni 2022 pukul 10.33 GMT+7

Dear Charlie, The Editorial team of F1000Research

Regarding my manuscript with title "Case Report: Delayed treatment of tuberculosis of the elbow joint" Desdiani D, Rizal H, Basuki A and Fadilah F, which has been assessed by reviewer 2, let me know, what is the next process? I have respond the comments of second reviewer and will wait for the next instructions from editorial of F1000Research.

Thank you for your attention.

Thank you for your attention.

Best Regards,
Desdiani Desdiani

Pada Rabu, 15 Juni 2022 18.39.37 GMT+7, editorial@f1000research.com <editorial@f1000research.com> menulis:

Do not delete (filing code): F1KR00CDE F1R-VER133791-A (end code)

Dear Desdiani

Case Report: Delayed treatment of tuberculosis of the elbow joint
Desdiani D, Rizal H, Basuki A and Fadilah F

I'm writing to inform you that Yunita Arliny has reviewed version 2 of your article and has changed their previous status from 'Approved with Reservations' to 'Approved'. You can read their comments [here](#).

As your article has now received the required approval from the reviewers to be indexed, it should appear on PubMed, PMC, Scopus, Embase and other indexing sites within a few weeks.

Although your article has now passed peer review, you can still revise or update it at any point now or in the future. For information on how to submit a new version, please visit [Article Guidelines \(new versions\)](#). Please bear in mind that new submissions need to be created and submitted using the submitting author's account.

If you wish to respond directly to the reviewer by adding a comment to their report (now, or at a later stage), please click the 'Respond to this report' button below the peer review report. When responding to a peer review report, please try and make sure you are logged into the account that you originally used for the submission of this article, otherwise we cannot identify your response as being from an author. Please allow up to one working day for your comment to appear (comments explaining changes in the revised version of your article are usually published at the same time as the revised article).

Best regards,

Charlie
The Editorial Team, F1000Research

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is

Re: Peer review report or update received

Dari: desdiani - (desdiani@ymail.com)

Kepada: research@f1000.com

Tanggal: Kamis, 25 Agustus 2022 pukul 08.29 GMT+7

Dear Charlie, the editorial team of F1000Research,

Here I submit the document of payment of the publication charge, Bank Transfer Copy of Article Processing Charge with Article ID: 53488

Article title : Case Report: Delayed treatment of tuberculosis of the elbow joint

Thank you for your attention.

Best Regards,
Desdiani Desdiani

Pada Selasa, 16 Agustus 2022 21.36.30 GMT+7, F1000.Research <research@f1000.com> menulis:

Dear Desdiani,

Thank you for your email. As far as I can see your manuscript does not currently have a version in production. As your article has passed peer review with both reviewers agreeing that the changes made in version 2 are satisfactory, we do not require any further revision of your article. In terms of payment queries, please direct any questions you might have about article processing fees to our accounts team at accounts@f1000.com.

Best regards,

Charlie
The Editorial Team, F1000Research

[Information Classification: General](#)

From: desdiani - <desdiani@ymail.com>
Sent: 14 August 2022 00:17
To: F1000.Research <research@f1000.com>
Subject: Re: Peer review report or update received

Dear Editor of F1000Research,

Our manuscript has received two 'Approved' peer review reports, and the editorial informed it will be indexed. I would be grateful if you could let me know whether there has been any further progress on my revised manuscript and when i have to pay the article processing charge.

Thank you for your attention.

Best Regards,

Desdiani Desdiani

Submitting the revised draft of manuscript

Dari: desdiani - (desdiani@ymail.com)

Kepada: editorial@f1000research.com

Tanggal: Sabtu, 29 Mei 2021 pukul 11.36 GMT+7

Dear Lea (The Editorial Team, F1000Research,

Thank you for allowing us the opportunity to submit a revised draft of our manuscript. We appreciate the time and effort that you dedicated to providing feedback on our manuscript.
Thank you for your attention.

Best regards,
Desdiani Desdiani



TB Elbow F1000 Research.docx
735.3kB



scare_2020_checklist TB Elbow.docx
27.9kB



CARE-checklist-F1000 Research.docx
92.5kB

Re: Peer review report or update received

Dari: desdiani - (desdiani@ymail.com)

Kepada: editorial@f1000research.com

Tanggal: Rabu, 15 Juni 2022 pukul 09.34 GMT+7

Dear Charlie, The Editorial team of F1000Research

I have respond the comments of first reviewer. For the next step, am i waiting for response from second reviewer? Please inform, currently, the status of my manuscript is still being reviewed and has been approved by 1 reviewer.

Thank you for your attention.

Best Regards,
Desdiani Desdiani

Pada Senin, 6 Juni 2022 17.22.06 GMT+7, editorial@f1000research.com <editorial@f1000research.com> menulis:

Do not delete (filing code): F1KR00CDE F1R-VER133791-A (end code)

Dear Desdiani

Case Report: Delayed treatment of tuberculosis of the elbow joint
Desdiani D, Rizal H, Basuki A and Fadilah F

I'm writing to inform you that Musofa Rusli has reviewed version 2 of your article and has maintained their original status of 'Approved'. You can read their comments [here](#).

If you wish to respond directly to the reviewer by adding a comment to their report (now, or at a later stage), please click the 'Respond to this report' button below the peer review report. When responding to a peer review report, please try and make sure you are logged into the account that you originally used for the submission of this article, otherwise we cannot identify your response as being from an author. Please allow up to one working day for your comment to appear (comments explaining changes in the revised version of your article are usually published at the same time as the revised article).

Best regards,

Charlie
The Editorial Team, F1000Research

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Re: Manuscript 53488 conditionally accepted for publication

Dari: desdiani - (desdiani@ymail.com)

Kepada: editorial@f1000research.com

Tanggal: Sabtu, 29 Mei 2021 pukul 11.10 GMT+7

Dear Lea (The Editorial Team, F1000Research,

Thank you for allowing us the opportunity to submit a revised draft of our manuscript. We appreciate the time and effort that you dedicated to providing feedback on our manuscript.
Thank you for your attention.

Best regards,
Desdiani Desdiani

Pada Jumat, 21 Mei 2021 21.55.33 GMT+7, editorial@f1000research.com <editorial@f1000research.com> menulis:

Do not delete (filing code): F1KR00CDE F1R-VER56876-A (end code)

Dear Desdiani

Case Report: Delayed treatment of tuberculosis of the elbow joint
Desdiani D, Rizal H, Basuki A and Fadilah F

Thank you for your submission to F1000Research. We have noted a few issues with your manuscript; we ask that these issues are addressed before we accept your article for publication.

Plagiarism: As standard, we run plagiarism checks to make sure that all submissions we receive are original (i.e. have not been published before) and the authors' own work. Having run these checks, we noted that your introduction and discussion sections have a high degree of similarity to another source (<http://dx.doi.org/10.1136/bcr-2017-222735>). Please address the comments on the edited manuscript attached, **using Track Changes in Word**.

Content: We endorse the [CARE guidelines](#) for case reports; we suggest that you ensure the article adheres to the CARE checklist and add any details that are missing. Please see also the [SCARE guidelines](#) for surgical case reports. The comments in the manuscript provide some queries relating to this checklist, but these are not exhaustive.

Figure 6: In line with the [Safe Harbor method of de-identification](#), please edit the images to remove exact dates of patient care and any other patient-specific details, and include a description of the image modifications made in the figure legend.

Reviewers: As you know, F1000Research operates an author-driven publication model. This means that you will be responsible for suggesting suitable reviewers, whom we invite on your behalf, giving you an opportunity to ensure that appropriate experts review your article. Our transparent peer review process means that the peer review reports, together with the reviewers' names, will be published alongside your article. To avoid delay to the publication process, we need you to provide us with at least five potential reviewers who meet our reviewer criteria before we can publish your article - please be aware that it is likely we will need to request further reviewer suggestions after publication. Please go to your [Suggest Reviewers](#) page, where you will find a useful tool to help you find reviewers; use this page to track the progress of the peer review process for your article. You can access this page directly via the article's record under My Research >> Submissions. See also our [reviewer criteria and tips for finding reviewers](#). Please remember that suggested reviewers should have appropriate level of experience and the right expertise to judge your article; they must be able to provide an unbiased report (e.g. they must not be recent collaborators or colleagues in

1st Revision



CASE REPORT

Case Report: Delayed treatment of tuberculosis of the elbow joint [version 1; peer review: 1 approved, 1 approved with reservations]

Desdiani Desdiani ^{1,2}, Hidayat Rizal³, Anindita Basuki⁴, Fadilah Fadilah ⁵

¹Faculty of Medicine, Universitas Sultan Ageng Tirtayasa, Cilegon, 42434, Indonesia

²Department of Pulmonology and Respiratory Medicine, Bhayangkara Brimob Hospital, Depok, 16451, Indonesia

³Department of Orthopaedic, Bhayangkara Brimob Hospital, Depok, 16451, Indonesia

⁴Department of Radiology, Bhayangkara Brimob Hospital, Depok, 16451, Indonesia

⁵Department of Medical Chemistry, Faculty of Medicine, Universitas Indonesia, Jakarta, 10430, Indonesia

V1 First published: 18 Jun 2021, 10:486
<https://doi.org/10.12688/f1000research.53488.1>
 Latest published: 13 May 2022, 10:486
<https://doi.org/10.12688/f1000research.53488.2>

Abstract

Extrapulmonary tuberculosis (TB) is known to occur in the musculoskeletal system, including the elbow joints. These cases are rarely found because the signs and symptoms are not specific to extrapulmonary TB or other diseases. We report a case of a 24-year-old male, who complained about pain in his left elbow and noticed swelling. Initially, he complained about pain all over his left arm, after several reflexology massages to alleviate his toothache. However, instead of seeking medical treatment, he visited a traditional massage therapist every week without improvement in his left arm pain for almost one year. Examination showed skin perforation with discharge. He also had fever during the first few days when the elbow became swollen. Weight loss and a decreased appetite were also noticed by the patient. The patient went to the orthopedic department and underwent surgery. Radiological examination indicated bone erosion on the left humerus and radius, while posteroanterior chest X-ray did not show any abnormality. Histopathological examinations from biopsy and fluid aspiration showed granulomas and datia Langhans cells. *Mycobacterium tuberculosis* was found on acid-fast bacteria smear and culture. The patient was administered multidrug tuberculosis therapy, which consisted of two months of an intensive phase and seven months of a continuation phase, in accordance with the World Health Organization's guidelines for extrapulmonary tuberculosis treatment. He has currently undergone the continuation phase of the treatment and his condition has improved. Early detection of tuberculosis of the elbow can prevent damage to joint structure and impairment of joint function.

Keywords

Elbow, Arthritis, Tuberculosis, Delayed treatment

Open Peer Review

Approval Status

	1	2
version 2		
(revision)		
13 May 2022	view	view
version 1		
18 Jun 2021	view	view

1. **Musofa Rusli** , Airlangga University, Surabaya, Indonesia

2. **Yunita Arliny** , Universitas Syiah Kuala, Banda Aceh, Indonesia

Any reports and responses or comments on the article can be found at the end of the article.

Corresponding author: Desdiani Desdiani (desdiani@ymail.com)

Author roles: **Desdiani D:** Conceptualization, Data Curation, Funding Acquisition, Investigation, Supervision, Validation, Writing – Original Draft Preparation, Writing – Review & Editing; **Rizal H:** Conceptualization, Supervision, Validation; **Basuki A:** Conceptualization, Supervision, Validation; **Fadilah F:** Formal Analysis, Investigation, Supervision, Visualization, Writing – Review & Editing

Competing interests: No competing interests were disclosed.

Grant information: The author(s) declared that no grants were involved in supporting this work.

Copyright: © 2021 Desdiani D *et al.* This is an open access article distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

How to cite this article: Desdiani D, Rizal H, Basuki A and Fadilah F. **Case Report: Delayed treatment of tuberculosis of the elbow joint [version 1; peer review: 1 approved, 1 approved with reservations]** F1000Research 2021, 10:486 <https://doi.org/10.12688/f1000research.53488.1>

First published: 18 Jun 2021, 10:486 <https://doi.org/10.12688/f1000research.53488.1>

Abbreviations

AFB: acid fast-bacteria
 AP: anteroposterior
 CKD: chronic kidney disease
 CT: computed tomography
 ESR: erythrocyte sedimentation rate
 HIV: human immunodeficiency virus
 PA: posteroanterior
 TB: tuberculosis
 WHO: World Health Organization

Introduction

Extrapulmonary tuberculosis (TB) is known to occur in joints with a percentage of approximately 1-3% of all TB cases, 2-5% of which are rare cases that occur in the elbow joints.¹ TB is an endemic disease with the total number of cases approximating 845,000 in Indonesia.² Elbow dysfunction is the result of progressive erosion and destruction of bone and joint, therefore early diagnosis and treatment are needed to prevent this outcome. Diagnosis is quite challenging and often late due to non-specific symptoms³ Joint TB is rarely detected because joint pain is not commonly considered to be a symptom of joint TB, especially if there are no respiratory complaints. Thus, diagnosis and treatment are often delayed. Here, we report a rare case of a patient with TB of the elbow joint, who received delayed treatment because he chose to undergo traditional treatment with massage therapy.

Case report

A 24-year-old Indonesian male who worked in an internet rental shop came to the orthopedic department of Bhayangkara Brimob hospital (Depok, Indonesia) with left arm pain and left elbow joint swelling. Physical examination revealed skin perforation with yellowish discharge on the left elbow. The patient experienced fever on the first few days as the left elbow became swollen, weight loss, and a decreased appetite, but no respiratory complaints.

Chronologically, one year prior to coming to the hospital, the patient noticed another pain in his left arm both in the upper and lower arm. He then chose to undergo regular traditional massage therapy every week for almost one year instead of seeking for medical treatments. At the first hospital visit, the elbow pain had gotten more severe and it became swollen. Within a month, discharge emerged from a small skin perforation located on the inner side of the left elbow. The patient finally went to the orthopedic department and underwent surgery. The patient had a history of undergoing reflexology massages between the fingers of his left hand to alleviate his toothache.

Upon physical examination, the left elbow joint appeared swollen and discharge was exuding from the perforated skin, as depicted in [Figure 1](#). The patient could not lift his left arm because it was painful. Flexion and extension were also difficult due to the severity of the pain. The patient's social environment has a culture of seeking help from local traditional



Figure 1. Left elbow joint appeared swollen, discharge was exuding from the perforated skin (photo after surgery).

massage therapists who are known to be uncertified to treat various health problems, and instead of recovering, the patient showed symptoms of worsening.

Laboratory examination revealed a leukocyte count of 15,000 (normal range: 5000-10,000 cells/ μ l), erythrocyte sedimentation rate (ESR) of 40 mm/hour (normal range: 0-10 mm/hour), eosinophils 9% (normal range: 1-3%), and monocytes 10% (normal range: 2-6%). Radiological examination by posteroanterior (PA) chest X-ray did not show any abnormality (Figure 2), anteroposterior (AP) and lateral projection of the left elbow joint radiographs showed erosion of the distal cortex of the humerus and radial bone, destruction of the distal cortex, and swelling of the soft tissue of the left elbow area (Figure 3).

The patient was subsequently diagnosed with TB of the elbow joint. He then underwent left elbow arthrotomy and synovial fluid aspiration. The surgery was performed with the patient supine under general anesthesia. Incisions were made layer by layer on the posterior region of *cubiti sinistra*. White granulation tissue and thick yellow intra- and extra-articular pus were evacuated. Histopathological examination was also performed. The wound was irrigated with 2 L of 0.9% NaCl and hecting was performed layer by layer subsequently. Specimens were collected and sent for microbiological and pathological analyses. Acid-fast bacteria (AFB) smear and culture showed *Mycobacterium tuberculosis*. Histopathological examination showed granulomatous inflammation, swollen connective tissues containing epithelioid tubercle nests with necrotization, and datia Langhans cells (Figure 4). The results were consistent with TB. Furthermore, the anti-human immunodeficiency virus (HIV) test was negative.

The patient was given a standard first-line oral regimen of extrapulmonary TB treatment; an intensive phase for two months with rifampicin 450 mg once daily, isoniazid 300 mg once daily, pyrazinamide 1000 mg once daily, and ethambutol 1000 mg once daily (2HRZE) and seven months of a continuation phase with rifampicin 450 mg once daily and isoniazid 300 mg once daily (7HR). The patient has been undergoing continuation phase of the treatment and his condition has been showing improvements, including decreased pain, increased appetite, and weight gain. However, flexion and extension are restricted. The patient reported clinical improvement and discharge was decreased. Left elbow joint radiographs showed minimal improvement (Figure 5). Computed tomography (CT) scan results showed destruction of the lateral *epicondylus* of the humeral bone and the *processus olecranon* of ulna bones, after two months of the treatment (Figure 6).

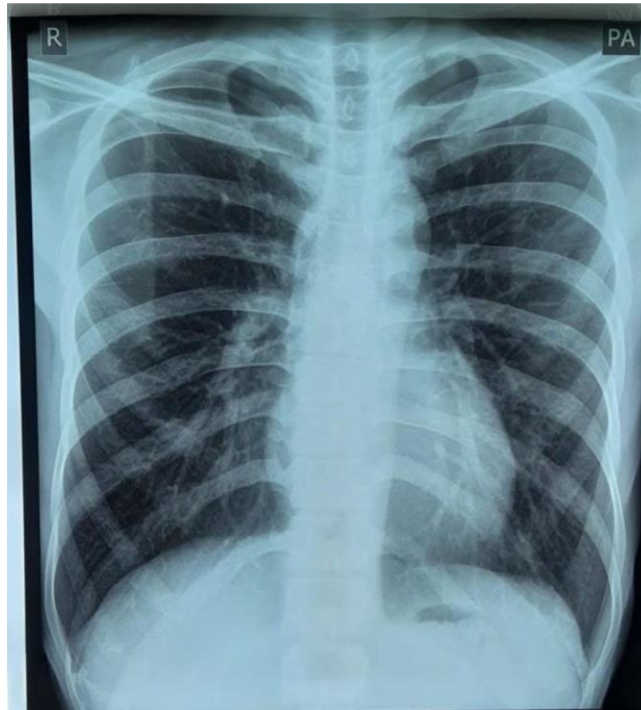


Figure 2. Radiological examination by posteroanterior chest X-ray did not show any abnormality.



Figure 3. Anteroposterior and lateral projection of the left elbow joint radiographs showed erosion of the distal cortex of the humerus and radial bone, destruction of the distal cortex, and swelling of the soft tissue of the left elbow area (February 2021).

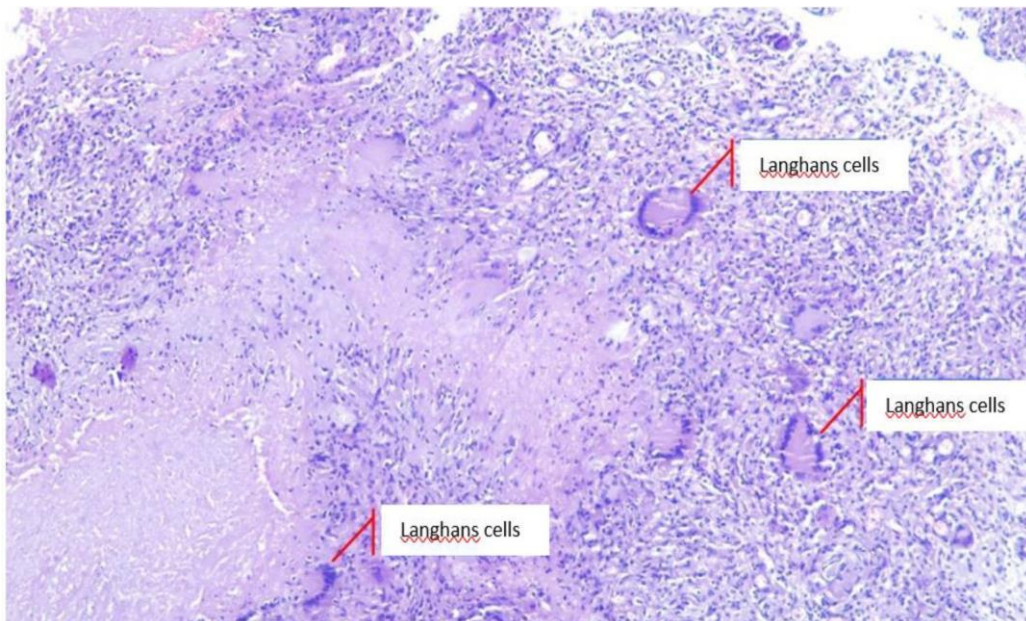


Figure 4. Granulomatous inflammation, swollen connective tissues containing epithelioid tubercle nests with necrotization, and datia Langhans cells.

Discussion

Musculoskeletal TB occurs in about 10% of all cases of extrapulmonary TB, which commonly affects weight-bearing joints such as the spine (51%), pelvis (12%), hip, femur (10%), knee and tibia (10%). Reported cases of non-weight-bearing joints such as elbow joint TB are still relatively rare, and the diagnosis often neglected.¹ Diagnosis of musculoskeletal TB requires the clinician's ability to pay attention to joint swelling and chronic pain, as well as their effects on joint function⁴

Usually, respiratory and systemic symptoms are absent or only briefly present. In this report, only a history of fever was identified. Radiological examination of the lungs showed no abnormality. The complaints for joint TB are often non-specific, hence a late diagnosis¹

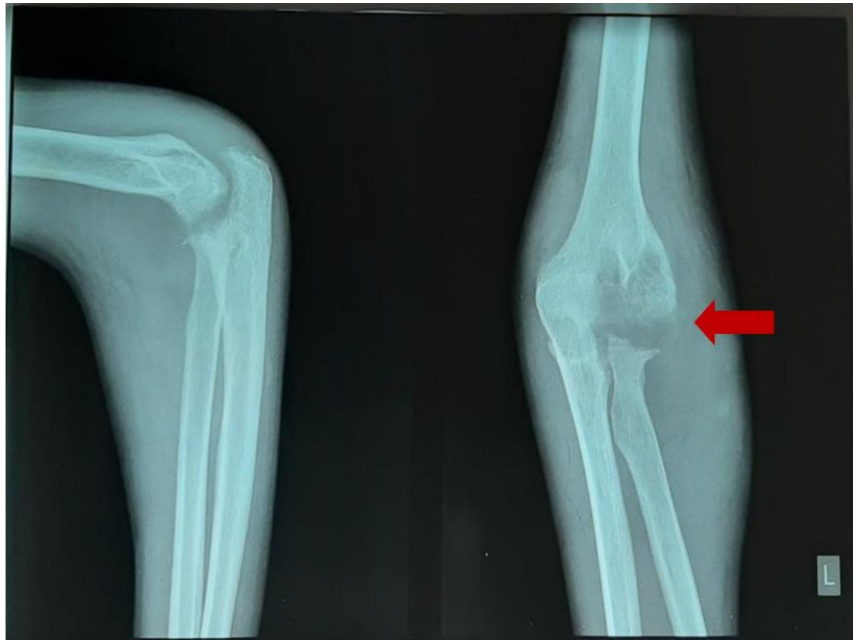


Figure 5. Minimal improvement, AP and lateral projection of the left elbow joint radiographs showed erosion of the distal cortex of the humerus and radial bone, destruction of the distal cortex, and swelling of the soft tissue of the left elbow area (March 2021).



Figure 6. Computed tomography scan shows destruction of the lateral epicondylus of the humeral bone and the processus olecranon of ulna bones (red arrows = humerus bones, green arrows = ulna bones). Picture was edited with photoshop CS4 version 11.0 to remove specific details of dates of patient care and patient's identity.

The findings in this report are consistent with several previous studies. A study by Yazici *et al.* (2016) reported a TB of the elbow joint case in which there were no signs and symptoms of respiration. The results of chest radiographs were still within normal limits. The diagnosis was confirmed by AFB and histopathology examinations.⁵ Another study by Guan & Zeng (2021) reported osteoarticular TB with a picture of swelling and pain that was previously diagnosed as osteoarthritis. Although these cases are rare, they are difficult to diagnose and can cause pain and impaired function.⁶

Radiographic changes of the joints may suggest multiple osteolytic lesions and there may be erosions of the joints and swelling of the soft tissues.⁷ Unfortunately, this patient did not undergo a magnetic resonance imaging examination due to the limited available facilities. Definite diagnosis required synovial fluid aspiration. Microscopic examination and culture of fluid aspiration were very helpful, followed by histopathological results showing the caseous granuloma.⁸ These non-specific signs and symptoms often delay the diagnosis as skeletal TB, as reported in one study that showed the time lag

from the onset of complaints until the diagnosis was confirmed as approximately 4-11 months. Additionally, some cases of skeletal TB occasionally were not detected by AFB and culture.^{9,10}

Clinicians should not neglect to explore the history of exposure and factors that increase the risks of TB infection, such as close contact with confirmed TB patients, immunocompromised patients (e.g. HIV infection), diabetes *mellitus*, and having comorbid diseases such as chronic kidney disease. Therefore, it is necessary to screen the patient for the co-infectious diseases listed above. Other risk factors are old age, poor nutrition, and receiving immunosuppressive treatments⁶ Regarding this case, the risk factors are not clear.

In summary, the significance of this case is the recognition of risk factors for skeletal TB and chronic symptoms, so that they can be treated properly. Early diagnosis and treatment can be achieved through careful anamnesis that does not ignore the history of close contact with confirmed cases of TB patients, risk factors for TB infection, physical/clinical, radiological, and laboratory examinations. It is important for clinicians, especially those who work in an area endemic to TB, to suspect chronic joint pain whose clinical symptoms do not improve with conventional treatment as skeletal TB in the differential diagnosis. The specific AFB smear and culture tests are still important, although they can occasionally show false negative results. Extrapulmonary TB can be deceptive because it does not always cause typical symptoms and pulmonary involvement. Prompt diagnosis and treatment are essential to prevent joint damage and impaired function.

Patient's perspectives

Left-arm and elbow pain, swelling, and immobility made me suffer. I knew that I had to go to the hospital for further treatment. However, I was afraid of surgery and at the suggestion of my family, I underwent traditional medicine with massage therapy for almost 1 year. I didn't expect that my illness would get worse and I had to have surgery immediately and take long-term medication. Now I feel better, my arm pain and swelling of my left elbow have decreased, even though I haven't been able to move my arm to its full potential.

Data availability

All data underlying the results are available as part of the article and no additional source data are required.

Consent

Written informed consent for publication of their clinical details and clinical images was obtained from the patient.

References

1. Thimmaiah VT, Deepashree: Unusual presentation of tuberculosis of elbow joint: a case report. *Res Rev: J Med Health Sci.* 2013; 2(4): 17–20.
2. World Health Organization: WHO. Global tuberculosis report [Internet]. *Who. int.* 2018 [cited 2021 Apr 1]; [Reference Source](#)
3. Broderick C, Hopkins S, Mack DJF, *et al.*: Delays in the diagnosis and treatment of bone and joint tuberculosis in the United Kingdom. *Bone Joint J.* 2018 Jan; 100-B(1): 119–24. [PubMed Abstract](#) | [Publisher Full Text](#)
4. Pigrau-Serrallach C, Rodríguez-Pardo D: Bone and joint tuberculosis. *Eur Spine J.* 2012 Jun 19; 22(S4): 556–66. [PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
5. Yazici A, Kayan G, Yaylaci S, *et al.*: Tuberculous arthritis of the elbow joint: A case report. *Eur J Rheumatol.* 2016 Sep 26; 3(3): 142–3. [PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
6. Guan Y, Zeng Z: Elbow arthroplasty complicated by Mycobacterium tuberculosis infection. *Medicine.* 2021 Mar 5; 100(9): e24376. [PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
7. De Backer AI, Vanhoenacker FM, Sanghvi DA: Imaging features of extraaxial musculoskeletal tuberculosis. *Indian J Radiol Imaging.* 2009; 19(3): 176–86. [PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
8. Arathi N, Fayaz A, Huda N: Osteoarticular tuberculosis-a three years retrospective study. *J Clin Diagn Res.* 2013; 7(10): 2189–92. [PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
9. Held MFG, Hoppe S, Laubscher M, *et al.*: Epidemiology of Musculoskeletal Tuberculosis in an Area with High Disease Prevalence. *Asian Spine J.* 2017 Jun 30 [cited 2021 Apr 1]; 11(3): 405–11. [PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
10. Garg RK, Somvanshi DS: Spinal tuberculosis: A review. *J Spinal Cord Med.* 2011 Sep [cited 2021 Apr 1]; 34(5): 440–54. [PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)

Open Peer Review

Current Peer Review Status:  

Version 1

Reviewer Report 04 April 2022

<https://doi.org/10.5256/f1000research.56876.r127931>

© 2022 Arliny Y. This is an open access peer review report distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



Yunita Arliny 

Department of Pulmonology and Respiratory Medicine, Faculty of Medicine, Universitas Syiah Kuala, Banda Aceh, Indonesia

1. Reflexology that is done for complaints of elbow pain or pain in other places? Because it is somewhat contrary to the statement of elbow pain and does not seem to be related to delayed therapy.
2. On photo session, it's better if you include a photo of the elbow before the operation.
3. The sentence "The patient was subsequently diagnosed with TB of the elbow joint" should be placed after the results of AFB and histopathological examinations are obtained. the sentence "diagnosed with TB of the elbow joint" should be replaced with suspected TB elbow joint.
4. Please complete the result of AFB examination (IULTD scale) and culture.
5. Has the patients examined of Gene Xpert MTB/RIF from the tissue? Please mention this.
6. Please add an explanation of the epidemiology of bone and joint TB (age, gender) and its pathogenesis.
7. Please explain the sentence "The specific AFB smear and culture tests are still important, although they can occasionally show false negative results."
8. Please mention the gold standard of diagnostics for bones or joint TB.

Is the background of the case's history and progression described in sufficient detail?

Partly

Are enough details provided of any physical examination and diagnostic tests, treatment

given and outcomes?

Partly

Is sufficient discussion included of the importance of the findings and their relevance to future understanding of disease processes, diagnosis or treatment?

Partly

Is the case presented with sufficient detail to be useful for other practitioners?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: pulmonary infection

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 05 May 2022

Desdiani Desdiani, Universitas Sultan Ageng Tirtayasa, Cilegon, Indonesia

Dear Dr. Yunita Arliny,

Thank you for allowing us the opportunity to submit a revised draft of the manuscript "Case Report: Delayed treatment of tuberculosis of the elbow joint" for publication in the F1000Research.

We appreciate the time and effort that you dedicated to providing feedback on our manuscript and are grateful for the insightful comments and valuable improvements to our paper. We have incorporated most of the suggestions made by the reviewers. Please see below, for a point-by-point response to the reviewers' comments and concerns:

Reflexology that is done for complaints of elbow pain or pain in other places? Because it is somewhat contrary to the statement of elbow pain and does not seem to be related to delayed therapy.

This patient complained about pain in his left elbow and noticed swelling. Initially, he complained about pain all over his left arm, after several reflexology massages to alleviate his toothache for almost 2 months. However, instead of seeking medical treatment, he visited a traditional massage therapist every week without improvement in his left arm pain including his left elbow for almost one year. At the first hospital visit, the elbow pain had gotten more severe and it became swollen. Discharge emerged from a small skin perforation located on the inner side of the left elbow. The patient finally went to the orthopedic department and underwent surgery.

On photo session, it's better if you include a photo of the elbow before the operation.

Initially, this patient came to the orthopedic clinic and was treated because of severe pain and swelling in the elbow of the left arm. Unfortunately, the orthopedic specialist did not

think to take a photo, he was immediately treated and underwent laboratory and radiological examinations, and then surgery was performed.

The sentence "The patient was subsequently diagnosed with TB of the elbow joint" should be placed after the results of AFB and histopathological examinations are obtained. the sentence "diagnosed with TB of the elbow joint" should be replaced with suspected TB elbow joint.

We agree and have updated.

Please complete the result of AFB examination (IULTD scale) and culture.

The result of the AFB examination is based on types of grading scale by the World Health Organization and the International Union against Tuberculosis and Lung Disease (WHO-IUATLD): **1–10 AFB per field, 2+**. Tissue culture was found to be positive.

Has the patients examined of Gene Xpert MTB/RIF from the tissue? Please mention this.

Initially, this patient came to the orthopedic clinic and was treated because of severe pain and swelling in the elbow of the left arm. Unfortunately, the orthopedic specialist did not think to take a photo, he was immediately treated and underwent laboratory and radiological examinations, and then surgery was performed. The source of the sample for histopathological examination was taken from white granulation tissue on the posterior region of cubiti sinistra. Histopathological examination showed granulomatous inflammation, swollen connective tissues containing epithelioid tubercle nests with necrotization, and datia Langhans cells.

Please add an explanation of the epidemiology of bone and joint TB (age, gender) and its pathogenesis.

We agree and have updated.

In Europe and the United States, bone and joint TB accounts for 2.2–4.7 percent of all TBcases and roughly 10–15 percent of EPTB cases, whereas in developing countries, particularly Asia, the incidence of EPTB rises to 15–20 percent. Males and females have identical rates of infection with Mycobacterium tuberculosis until adolescence, following which males have a greater rate. For all ages, male rates became higher than female rates. Many developing countries' current notification rates for both sexes are comparable to those of industrialized countries in the mid-twentieth century, though the sex and age pattern is similar to that of industrialized countries today, with men's disease rates exceeding women's after the age of fifteen. These data raise the potential that tuberculosis cases among women in underdeveloped countries are underreported. The average age of tuberculous vertebral osteomyelitis patients is 45–60 years old. Nonetheless, some research show a bimodal age distribution, with two peaks, one between 20 and 30 years old, linked to immigration and/or HIV infection (60 percent of cases in one study), and the other between 60 and 70 years old. Simultaneous extraspinal involvement is seen in 5–50% of cases, while concomitant lung illness is seen in 2.3–65% of cases. The development of symptoms in spinal TB is usually gradual, and the disease progresses slowly, albeit an early onset has been documented. Symptoms might last anywhere from two weeks to many years at the time of diagnosis. The typical symptom duration was at least 12 months in early

studies, although more current articles report a symptom duration of 2–7 months. Pain is common (83–100%), although only a third of individuals have a fever or other constitutional symptoms. Patients with extraspinal TB and those with disseminated disease are more likely to experience these symptoms. In tuberculosis of the upper limb, the elbow joint is the most commonly implicated joint. The incidence of elbow tuberculosis has been observed to range from 2 to 5% of all skeletal sites. There are only a few important reports on TB of the elbow joint that have been published. There were no management options or classifications. Histopathology, AFB staining, and polymerase chain reaction (PCR) were all performed on the samples.

Pathogenesis

Reactivation of bacilli embedded in bone during the first mycobacteremia of primary infection causes tuberculous elbow and arthritis. The extensive vascular supply of the vertebra and growth plates of the long bones explains the bacillus' preference for the spine and major joints. Musculoskeletal tuberculosis develops as a result of the bacilli being seeded in the bloodstream shortly after the initial pulmonary infection. Osteoarticular tuberculosis begins as osteomyelitis in the growth plates of bones, where the blood supply is strongest, and subsequently spreads locally into joint spaces. It can also spread through the lymphatic system; however this is a less usual occurrence. The stimulation of dormant lymphatic or blood stream areas of morbidity might cause infections in joints. In the long bones, tuberculosis begins in the epiphysis and progresses to the marrow, where it causes tubercle formation and trabeculae infection. The mycobacteria cause an inflammatory response in the synovium of the joint, which is followed by the production of granulation tissue. The granulation tissue pannus then starts to erode and degrade cartilage and finally bone, resulting in demineralization. Proteolytic enzymes that damage peripheral cartilage aren't created because tuberculosis isn't a pyogenic infection. As a result, for a long period, the joint space is kept. Abscesses in the surrounding tissue may occur if the infection is allowed to proceed without treatment. Sequestration of bone is uncommon due to the absence of space-occupying exudates with substantial interruption of vascular supply. As a result, the active phase of tuberculous elbow is characterized by bone loss without sequestra and little new bone growth.

Please explain the sentence "The specific AFB smear and culture tests are still important, although they can occasionally show false negative results."

A negative AFB smear indicates that there is no infection, that symptoms are caused by anything other than mycobacteria, or that mycobacteria were not present in sufficient numbers to be detected under a microscope. In order to increase the likelihood of finding the organisms, at least three samples are usually taken. However, if AFB smears are negative but a strong suspicion of a mycobacterial infection remains, more samples may be taken and analyzed on different days. Because the culture media permits tiny amounts of germs to thrive and be detected, a smear negative sample can nonetheless grow mycobacteria. AFB smears that are positive suggest a mycobacterial infection. To confirm a diagnosis, however, a culture must be taken. AFB smear results are combined with results from the nucleic acid amplification test (NAAT) for TB in persons who have signs and symptoms of an active TB infection. Though a culture is required for a conclusive diagnosis, the results of the smear and NAAT may be useful in determining what to do. Histopathology, AFB staining, and polymerase chain reaction all validated the diagnosis of

elbow tuberculosis (PCR). Biopsy without affecting the bone's integrity. The histopathologic results such as epithelioid infiltration, tubercle formation, caseous necrosis, and Langhan's giant cells confirmed the TB pattern.

Please mention the gold standard of diagnostics for bones or joint TB. Bone biopsy is the gold standard for diagnosis.

References :

- [1] Holmes CB, Hausler H, Nunn P. A review of sex differences in the epidemiology of tuberculosis. *Int J Tuberc Lung Dis*. 1998;2(2):96-104.
- [2] Dhillon M, Goel A, Prabhakar S, Aggarwal S, Bachhal V. Tuberculosis of the elbow: A clinicoradiological analysis. *Indian J Orthop*. 2012;46(2):200. DOI: <https://doi.org/10.4103/0019-5413.93684>
- [3] Haider Abdul-Lateef Mousa. Bones and Joints Tuberculosis. *Bahrain Med Bull* . 2007;29(1):17-21.
- [4] Pigrau-Serrallach C, Rodríguez-Pardo D. Bone and joint tuberculosis. *Eur Spine J*. 2013;22 Suppl 4(Suppl 4). DOI: <https://doi.org/10.1007/S00586-012-2331-Y>

Competing Interests: None

Reviewer Report 05 July 2021

<https://doi.org/10.5256/f1000research.56876.r88014>

© 2021 Rusli M. This is an open access peer review report distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



Musofa Rusli 

Department of Internal Medicine, Faculty of Medicine, Airlangga University, Surabaya, Indonesia

The background and risk factors of the case and the case's progression are sufficiently described. In addition, there are enough details provided of the physical examination, diagnostic tests, and brief outcome of the case. Furthermore, a good discussion is included of the importance of the findings and their relevance in managing the particular case. Finally, there is an adequate presentation of the clinical management to be useful for other practitioners.

However, some issues need to be taken into account. For example, it is better to use a proofreading service to correct some typographical mistakes. In the Case Report Section, the source of sample in the sentence "histopathological examination was also performed" needs to be clarified; is it from the pus or other tissue?

Below are some references worth considering to be included in the manuscript:

- Boodoo *et al.* (2020¹)
- Liao *et al.* (2017²)

References

1. Boodoo KN, Lillis R: Osteoarticular tuberculosis involving the elbow. *Oxf Med Case Reports*. 2020; **2020** (10): omaa085 [PubMed Abstract](#) | [Publisher Full Text](#)
2. Liao Q, Shepherd JG, Hasnie S: Mycobacterium tuberculosis of the elbow joint. *BMJ Case Rep*. 2017; **2017**. [PubMed Abstract](#) | [Publisher Full Text](#)

Is the background of the case's history and progression described in sufficient detail?

Yes

Are enough details provided of any physical examination and diagnostic tests, treatment given and outcomes?

Yes

Is sufficient discussion included of the importance of the findings and their relevance to future understanding of disease processes, diagnosis or treatment?

Yes

Is the case presented with sufficient detail to be useful for other practitioners?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Infectious disease

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Author Response 13 Jul 2021

Desdiani Desdiani, Universitas Sultan Ageng Tirtayasa, Cilegon, Indonesia

Dear Dr. Musofa Rusli,

Thank you for allowing us the opportunity to submit a revised draft of the manuscript "Case Report: Delayed treatment of tuberculosis of the elbow joint" for publication in the F1000Research.

We appreciate the time and effort that you dedicated to providing feedback on our manuscript and are grateful for the insightful comments and valuable improvements to our paper. We have incorporated most of the suggestions made by the reviewers. Please see below, for a point-by-point response to the reviewers' comments and concerns:

1. We have used a proofreading service to correct some typographical mistakes with scribendi.com
2. The source of the sample for histopathological examination was taken from white

granulation tissue on the posterior region of *cubiti sinistra*.

3. We agree that references such as Voodoo et al. (2020) and Liao et al. (2017) can be used for comparison of clinical, histopathological and radiological findings with the patients we analyzed and reported at this time.

Thank you so much,
Best Regards,

Desdiani Desdiani

Competing Interests: No competing interests were disclosed.

Author Response 15 Jun 2022

Desdiani Desdiani, Universitas Sultan Ageng Tirtayasa, Cilegon, Indonesia

Dear Musofa Rusli,
Thank you for your respond and review.

Best Regards,
Desdiani Desdiani

Competing Interests: No competing interests were disclosed.

The benefits of publishing with F1000Research:

- Your article is published within days, with no editorial bias
- You can publish traditional articles, null/negative results, case reports, data notes and more
- The peer review process is transparent and collaborative
- Your article is indexed in PubMed after passing peer review
- Dedicated customer support at every stage

For pre-submission enquiries, contact research@f1000.com

F1000Research

Please validate your email address

Dari: info@f1000.com

Kepada: desdiani@ymail.com

Tanggal: Kamis, 13 Mei 2021 pukul 22.40 WIB

Dear Desdiani,

To complete your registration with F1000Research, please validate your email address by clicking:

<https://f1000research.com/register/validation/email?token=1112563&originalPath=/author/submit/new>

If you have any questions or comments please contact our Customer Service team by email at info@f1000.com.

Best regards,

The F1000Research team

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Payment for article APC in F1000Research (Article ID: 53488)

Dari: info@f1000.com

Kepada: desdiani@ymail.com

Tanggal: Sabtu, 22 Mei 2021 pukul 22.17 WIB

Do not delete (filing code): F1KR00CDE F1R-VER56876-A (end code)

Dear Desdiani Desdiani

Case Report: Delayed treatment of tuberculosis of the elbow joint
Desdiani D, Rizal H, Basuki A and Fadilah F

You have stated that you are the individual responsible for payment of the invoice for the article processing charge (APC) for the above article. Please note that the article has not yet been accepted; the invoice will be raised when the article is accepted by F1000Research, at which point our Accounts team will be in touch.

The details provided are:

Desdiani Desdiani
Universitas Sultan Ageng Tirtayasa
Jalan Jend. Sudirman No.20, RT.10/RW.5, Kotabumi

Cilegon
42434
Indonesia

The APC for this article, once any discounts have been taken into account, is \$1350.00

If you have any questions, please [contact us](#) as soon as possible.

Best regards

The F1000Research team

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Peer review report published - article has not yet passed peer review

Dari: editorial@f1000research.com

Kepada: desdiani@gmail.com

Tanggal: Senin, 4 April 2022 pukul 16.07 WIB

Do not delete (filing code): F1KR00CDE F1R-VER56876-A (end code)

Dear Desdiani

Case Report: Delayed treatment of tuberculosis of the elbow joint
Desdiani D, Rizal H, Basuki A and Fadilah F

We have published another peer review report for your article in F1000Research at <https://f1000research.com/articles/10-486/v1#referee-response-127931>.

You have now received 2 peer review reports. Some of your reviewers had reservations and therefore your article has not yet passed peer review, which prevents it being indexed in bibliographic databases. (*Once an article receives two 'Approved' statuses, or two 'Approved with Reservations' statuses and one 'Approved' status, it will be considered to have passed peer review.*)

Please let us know how you'd like to proceed:

1) You can revise your article and publish a new version, together with a response to the reviewers. We will then contact the reviewers again for comments on your revision and an updated approval status.

For information on how to submit a new version, please visit [Article Guidelines \(new versions\)](#). Please bear in mind that new submissions need to be created and submitted using the submitting author's account.

2) Alternatively, if you wish to continue with the peer review and try to receive further reviewers opinions before you revise, please continue to suggest additional reviewers, via your [Suggest Reviewers](#) page, where you will find a useful tool to help you find reviewers; you can also access this page via the article's record under My Research >> Submissions.

It is your decision which option you wish to pursue. If we do not hear otherwise, we assume that you are revising and look forward to hearing from you when you are ready with your submission.

If you wish to respond directly to the reviewer by adding a comment to their report (now, or at a later stage), please click the 'Respond to this report' button below the report. When responding to a peer review report, please try and make sure you are logged into the account that you originally used for the submission of this article, otherwise we cannot identify your response as being from an author. Please allow up to one working day for your comment to appear (comments explaining changes in the revised version of your article are usually published at the same time as the revised version).

Best regards,

Ana
The Editorial Team, F1000Research

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Thank you for submitting a new version of your article 53488

Dari: editorial@f1000research.com

Kepada: desdiani@ymail.com

Tanggal: Jumat, 6 Mei 2022 pukul 17.14 WIB

Do not delete (filing code): F1KR00CDE F1R-VER133791-A (end code)

Dear Desdiani

Case Report: Delayed treatment of tuberculosis of the elbow joint
Desdiani D, Rizal H, Basuki A and Fadilah F

Thank you for submitting a new version of your article to F1000Research. We have noted a few minor issues with your manuscript (below) – once these are addressed we will proceed with the publication of this version.

Unfortunately, for us to process new versions, they need to be submitted on the word document version of the most recently published article. This is to ensure all editorial changes are present on the version 2, including those made to the version 2 pdf proof. Please [download the document](#) and transfer your revisions to this document with tracked changes enabled and return the file to us at this email address, that would be much appreciated.

Please note that this is the last opportunity to make any changes to the content of your manuscript. Once the typeset PDF of your manuscript has been made, we will send you a final PDF proof for checking prior to publication.

Best regards,

Manahil
The Editorial Team, F1000Research

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.

Re: Thank you for submitting a new version of your article 53488

Dari: desdiani - (desdiani@ymail.com)

Kepada: editorial@f1000research.com

Tanggal: Sabtu, 7 Mei 2022 pukul 03.55

WIB

Dear editor F1000Research,

Here we submit a new version of our manuscript with title "Case Report: Delayed treatment of tuberculosis of the elbow joint". Thank you for your attention.

Best Regards,
Desdiani Desdiani

Pada Jumat, 6 Mei 2022 17.14.05 GMT+7, editorial@f1000research.com <editorial@f1000research.com> menulis:

Do not delete (filing code): F1KR00CDE F1R-VER133791-A (end code)

Dear Desdiani

Case Report: Delayed treatment of tuberculosis of the elbow joint
Desdiani D, Rizal H, Basuki A and Fadilah F

Thank you for submitting a new version of your article to F1000Research. We have noted a few minor issues with your manuscript (below) - once these are addressed we will proceed with the publication of this version.

Unfortunately, for us to process new versions, they need to be submitted on the word document version of the most recently published article. This is to ensure all editorial changes are present on the version 2, including those made to the version 2 pdf proof. Please download the document and transfer your revisions to this document with tracked changes enabled and return the file to us at this email address, that would be much appreciated.

Please note that this is the last opportunity to make any changes to the content of your manuscript. Once the typeset PDF of your manuscript has been made, we will send you a final PDF proof for checking prior to publication.

Best regards,

Manahil
The Editorial Team, F1000Research

F1000Research is the trading name of F1000 Research Limited. This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you are not the intended recipient, you are hereby notified that any disclosure, distribution, copying or use of this message or taking any action in reliance on the contents of it is strictly prohibited. If you have received this electronic message in error, please destroy it immediately, and notify the sender. F1000 Research Limited does not accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of F1000 Research Limited. No contracts may be concluded on behalf of F1000 Research Limited by means of e-mail communication. F1000 Research Limited is Registered in England and Wales with Company Number 8322928, Registered Office Howick Place, London SW1P 1WG, UK.



f1000research-10-486-V2_tracked.docx
3.5MB

ARTICEL PUBLISHED, 13 May 2022

F1000Research

F1000Research 2022, 10:486 Last updated: 15 JUN 2022



CASE REPORT

REVISED Case Report: Delayed treatment of tuberculosis of the elbow joint [version 2; peer review: 2 approved]

Desdiani Desdiani ^{1,2}, Hidayat Rizal³, Anindita Basuki⁴, Fadilah Fadilah ⁵

¹Faculty of Medicine, Universitas Sultan Ageng Tirtayasa, Cilegon, 42434, Indonesia

²Department of Pulmonology and Respiratory Medicine, Bhayangkara Brimob Hospital, Depok, 16451, Indonesia

³Department of Orthopaedic, Bhayangkara Brimob Hospital, Depok, 16451, Indonesia

⁴Department of Radiology, Bhayangkara Brimob Hospital, Depok, 16451, Indonesia

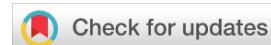
⁵Department of Medical Chemistry, Faculty of Medicine, Universitas Indonesia, Jakarta, 10430, Indonesia

v2 First published: 18 Jun 2021, 10:486
<https://doi.org/10.12688/f1000research.53488.1>

Latest published: 13 May 2022, 10:486

Open Peer Review

Approval Status



CASE REPORT

REVISED Case Report: Delayed treatment of tuberculosis of the elbow joint [version 2; peer review: 2 approved]Desdiani Desdiani ^{1,2}, Hidayat Rizal³, Anindita Basuki⁴, Fadilah Fadilah ⁵¹Faculty of Medicine, Universitas Sultan Ageng Tirtayasa, Cilegon, 42434, Indonesia²Department of Pulmonology and Respiratory Medicine, Bhayangkara Brimob Hospital, Depok, 16451, Indonesia³Department of Orthopaedic, Bhayangkara Brimob Hospital, Depok, 16451, Indonesia⁴Department of Radiology, Bhayangkara Brimob Hospital, Depok, 16451, Indonesia⁵Department of Medical Chemistry, Faculty of Medicine, Universitas Indonesia, Jakarta, 10430, Indonesia**V2** First published: 18 Jun 2021, 10:486
<https://doi.org/10.12688/f1000research.53488.1>Latest published: 13 May 2022, 10:486
<https://doi.org/10.12688/f1000research.53488.2>**Abstract**

Extrapulmonary tuberculosis (TB) is known to occur in the musculoskeletal system, including the elbow joints. These cases are rarely found because the signs and symptoms are not specific to extrapulmonary TB or other diseases. We report a case of a 24-year-old male, who complained about pain in his left elbow and noticed swelling. Initially, he complained about pain all over his left arm, after several reflexology massages to alleviate his toothache. However, instead of seeking medical treatment, he visited a traditional massage therapist every week without improvement in his left arm pain including his left elbow for almost one year. Examination showed skin perforation with discharge. He also had fever during the first few days when the elbow became swollen. Weight loss and a decreased appetite were also noticed by the patient. The patient went to the orthopedic department and underwent surgery. Radiological examination indicated bone erosion on the left humerus and radius, while posteroanterior chest X-ray did not show any abnormality. Histopathological examinations from biopsy and fluid aspiration showed granulomas and datia Langhans cells. *Mycobacterium tuberculosis* was found on acid-fast bacteria smear and culture. The patient was administered multidrug tuberculosis therapy, which consisted of two months of an intensive phase and seven months of a continuation phase, in accordance with the World Health Organization's guidelines for extrapulmonary tuberculosis treatment. He has currently undergone the continuation phase of the treatment and his condition has improved. Early detection of tuberculosis of the elbow can prevent damage to joint structure and impairment of joint function.

Keywords

Elbow, Arthritis, Tuberculosis, Delayed treatment

Open Peer Review**Approval Status**

	1	2
version 2 (revision) 13 May 2022	 view	 view
version 1 18 Jun 2021	 view	 view

1. **Musofa Rusli** , Airlangga University, Surabaya, Indonesia2. **Yunita Arliny** , Universitas Syiah Kuala, Banda Aceh, Indonesia

Any reports and responses or comments on the article can be found at the end of the article.

Corresponding author: Desdiani Desdiani (desdiani@ymail.com)

Author roles: **Desdiani D:** Conceptualization, Data Curation, Funding Acquisition, Investigation, Supervision, Validation, Writing – Original Draft Preparation, Writing – Review & Editing; **Rizal H:** Conceptualization, Supervision, Validation; **Basuki A:** Conceptualization, Supervision, Validation; **Fadilah F:** Formal Analysis, Investigation, Supervision, Visualization, Writing – Review & Editing

Competing interests: No competing interests were disclosed.

Grant information: The author(s) declared that no grants were involved in supporting this work.

Copyright: © 2022 Desdiani D *et al.* This is an open access article distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

How to cite this article: Desdiani D, Rizal H, Basuki A and Fadilah F. **Case Report: Delayed treatment of tuberculosis of the elbow joint [version 2; peer review: 2 approved]** F1000Research 2022, **10**:486 <https://doi.org/10.12688/f1000research.53488.2>

First published: 18 Jun 2021, **10**:486 <https://doi.org/10.12688/f1000research.53488.1>

REVISED Amendments from Version 1

We have added a few sentences such as “including his left elbow” in the abstract section, epidemiology (age, gender) in the introduction section, the patient was suspected of TB of the elbow joint, the patient was subsequently diagnosed with TB of the elbow joint, the result of the AFB examination based on WHO-IUATLD scales in case report section and pathogenesis of tuberculous elbow in a discussion section.

Any further responses from the reviewers can be found at the end of the article

Abbreviations

AFB: acid fast-bacteria

AP: anteroposterior

CKD: chronic kidney disease

CT: computed tomography

ESR: erythrocyte sedimentation rate

HIV: human immunodeficiency virus

PA: posteroanterior

TB: tuberculosis

WHO: World Health Organization

Introduction

Extrapulmonary tuberculosis (TB) is known to occur in joints with a percentage of approximately 1-3% of all TB cases of which 2-5% are rare cases that occur in the elbow joints.¹ TB is an endemic disease with the total number of cases approximating 845,000 in Indonesia.² Males and females have identical rates of infection with *Mycobacterium tuberculosis* until adolescence, following which males have a greater rate. For all ages, male rates became higher than female rates. The average age of tuberculous vertebral osteomyelitis patients is 45–60 years old. Nonetheless, some research show a bimodal age distribution, with two peaks, one between 20 and 30 years old, linked to immigration and/or HIV infection almost 60% of cases in one study, and the other between 60 and 70 years old.³ Elbow dysfunction is the result of the progressive erosion and destruction of bone and joint, therefore early diagnosis and treatment are needed to prevent this outcome. Diagnosis is quite challenging and often late due to non-specific symptoms.⁴ Joint TB is rarely detected because joint pain is not commonly considered to be a symptom of joint TB, especially if there are no respiratory complaints. Thus, diagnosis and treatment are often delayed. Here, we report a rare case of a patient with TB of the elbow joint, who received delayed treatment because he chose to undergo traditional treatment with massage therapy.

Case report

A 24-year-old Indonesian male who worked in an internet rental shop came to the orthopedic department of Bhayangkara Brimob hospital (Depok, Indonesia) with left arm pain and left elbow joint swelling. Physical examination revealed skin perforation with yellowish discharge on the left elbow. The patient experienced fever on the first few days as the left elbow became swollen, weight loss, and a decreased appetite, but no respiratory complaints.

Chronologically, one year prior to coming to the hospital, the patient noticed another pain in his left arm both in the upper and lower arm. He then chose to undergo regular traditional massage therapy every week for almost one year instead of seeking for medical treatments. At the first hospital visit, the elbow pain had gotten more severe and became swollen. Within a month, discharge emerged from a small skin perforation located on the inner side of the left elbow. The patient finally went to the orthopedic department and underwent surgery. The patient had a history of undergoing reflexology massages on between the fingers of his left hand to alleviate his toothache.

Upon physical examination, the left elbow joint appeared swollen and discharge was exuding from the perforated skin, as depicted in **Figure 1**. The patient could not lift his left arm because it was be painful. Flexion and extension were also difficult due to the severity of the pain. The patient's social environment has a culture of seek help from local traditional massage therapist who is known to be uncertified for various health problems, and instead of recovering, the patient showed symptoms that are worsening.

Laboratory examination revealed a leukocyte count of 15,000 (normal range: 5000-10,000 cells/ μ l), erythrocyte sedimentation rate (ESR) of 40 mm/hour (normal range: 0-10 mm/hour), eosinophils 9% (normal range: 1-3%), and monocytes 10% (normal range: 2-6%). Radiological examination by posteroanterior (PA) chest X-ray did not show any abnormality (**Figure 2**), anteroposterior (AP) and lateral projection of the left elbow joint radiographs showed erosion of



Figure 1. Left elbow joint appeared swollen, discharge was exuding from the perforated skin (photo after surgery).

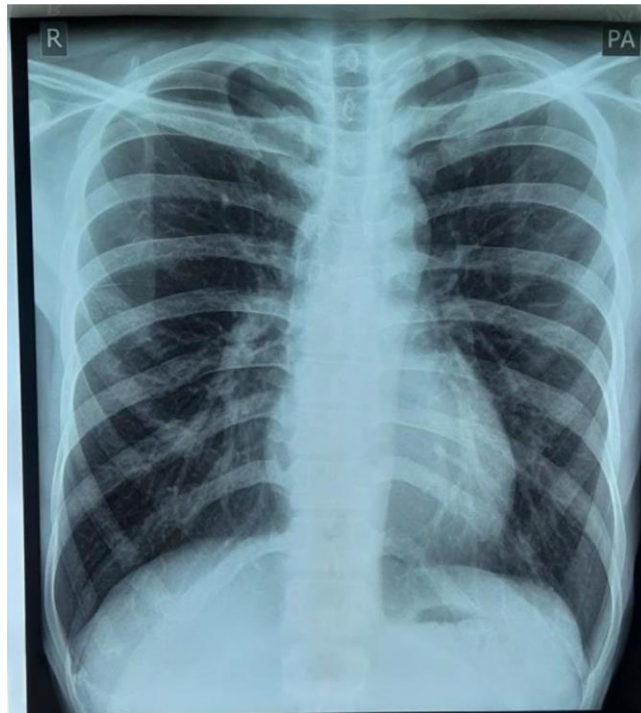


Figure 2. Radiological examination by posteroanterior chest X-ray did not show any abnormality.

the distal cortex of the humerus and radial bone, destruction of the distal cortex, and swelling of the soft tissue of the left elbow area (**Figure 3**).

The patient was suspected with TB of the elbow joint. He then underwent left elbow arthrotomy and synovial fluid aspiration. The surgery was performed with the patient supine under general anesthesia. Incisions were made layer by layer on the posterior region of *cubiti sinistra*. White granulation tissue and thick yellow intra- and extra-articular pus were evacuated. Histopathological examination was also performed. The wound was irrigated with 2 L of 0.9% NaCl and hecting was performed layer by layer subsequently. Specimens were collected and sent for microbiological and pathological analyses. The result of the AFB examination was based on types of grading scale by the World Health

8/10/23, 2:22 PM

Yahoo Mail - Re: Thank you for submitting a new version of your article 53488

Organization and the International Union against Tuberculosis and Lung Disease (WHO-IUATLD) was 2+. Tissue



Figure 3. Anteroposterior and lateral projection of the left elbow joint radiographs showed erosion of the distal cortex of the humerus and radial bone, destruction of the distal cortex, and swelling of the soft tissue of the left elbow area (February 2021).

culture was found to be positive. Histopathological examination showed granulomatous inflammation, swollen connective tissues containing epithelioid tubercle nests with necrotization, and datia Langhans cells (**Figure 4**). The results were consistent with TB. Furthermore, the anti-human immunodeficiency virus (HIV) test was negative. The patient was subsequently diagnosed with TB of the elbow joint.

The patient was given a standard first-line oral regimen of extrapulmonary TB treatment; an intensive phase for two months with rifampicin 450 mg once daily, isoniazid 300 mg once daily, pyrazinamide 1000 mg once daily, and ethambutol 1000 mg once daily (2HRZE) and seven months of a continuation phase with rifampicin 450 mg once daily and isoniazid 300 mg once daily (7HR). The patient had been undergoing continuation phase of the treatment and his condition showing improvements, including decreased pain, increased appetite, and weight gain. However, flexion and

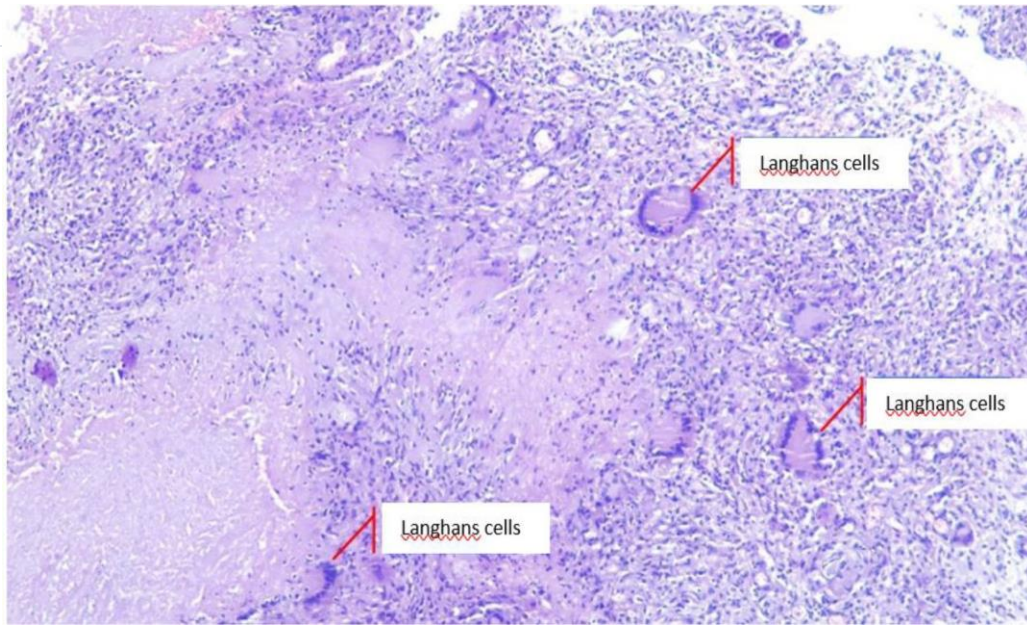


Figure 4. Granulomatous inflammation, swollen connective tissues containing epithelioid tubercle nests with necrotization, and datia Langhans cells.



Figure 5. Minimal improvement, AP and lateral projection of the left elbow joint radiographs showed erosion of the distal cortex of the humerus and radial bone, destruction of the distal cortex, and swelling of the soft tissue of the left elbow area (March 2021).



Figure 6. Computed tomography scan shows destruction of the lateral epicondylus of the humeral bone and the processus olecranon of ulna bones (red arrows = humerus bones, green arrows = ulna bones). Picture was edited with photoshop CS4 version 11.0 to remove specific details of dates of patient care and patient's identity.

extension are restricted. The patient reported clinical improvement and discharge was decreased. Left elbow joint radiographs showed minimal improvement (**Figure 5**). Computed tomography (CT) scan results showed destruction of the lateral *epicondylus* of the humeral bone and the *processus olecranon* of ulna bones, after two months of the treatment (**Figure 6**).

Discussion

Musculoskeletal TB occurs in about 10% of all cases of extrapulmonary tuberculosis, which commonly affects weight-bearing joints such as spine (51%), pelvis (12%), hip and femur (10%), knee and tibia (10%). Reported cases of non-weight-bearing joints such as elbow joint TB are still relatively few, and the diagnosis still often to be neglected.¹

Reactivation of bacilli embedded in bone during the first mycobacteremia of primary infection causes tuberculous elbow and arthritis. The extensive vascular supply of the vertebra and growth plates of the long bones explains the bacillus'

preference for the spine and major joints. Musculoskeletal tuberculosis develops as a result of the bacilli being seeded in the bloodstream shortly after the initial pulmonary infection. Osteoarticular tuberculosis begins as osteomyelitis in the growth plates of bones, where the blood supply is strongest, and subsequently spreads locally into joint spaces. It can also spread through the lymphatic system; however this is a less usual occurrence. The stimulation of dormant lymphatic or blood stream areas of morbidity might cause infections in joints. In the long bones, tuberculosis begins in the epiphysis and progresses to the marrow, where it causes tubercle formation and trabeculae infection. The mycobacteria cause an inflammatory response in the synovium of the joint, which is followed by the production of granulation tissue. The granulation tissue pannus then starts to erode and degrade cartilage and finally bone, resulting in demineralization.⁵⁻⁷

Diagnosis of musculoskeletal TB requires the clinician's ability to pay attention to joint swelling and chronic pain, as well as their effects on joint function.⁵

Usually, respiratory and systemic symptoms are absent or only briefly present. In this report, only a history of fever was identified. Radiological examination of the lungs showed no abnormality. The complaints for joint TB are often non-specific, hence a late diagnosis.¹

The findings in this report are consistent with several previous studies. A study by Yazici *et al.* (2016) reported a TB of the elbow joint case in which there were no signs and symptoms of respiration. The results of chest radiographs were still within normal limits. The diagnosis was confirmed by AFB and histopathology examinations.⁸ Another study by Guan & Zeng (2021) reported osteoarticular TB with a picture of swelling and pain that was previously diagnosed as osteoarthritis. Although these cases are rare, they are difficult to diagnose and can cause pain and impaired function.⁹

Radiographic changes of the joints may suggest multiple osteolytic lesions and there may be erosions of the joints and swelling of the soft tissues.¹⁰ Unfortunately, this patient did not undergo a magnetic resonance imaging examination due to the limited available facilities. Definite diagnosis required synovial fluid aspiration. Microscopic examination and culture of fluid aspiration were very helpful, followed by histopathological results showing the caseous granuloma.¹¹ These non-specific sign and symptoms were often delay the diagnosed as skeletal TB, as reported in one study that shows the time lag from the onset of complaints until the diagnosis was confirmed as approximately 4-11 months. Additionally, some cases of skeletal TB occasionally showed negative results on AFB and culture.^{12,13}

Clinicians should not neglect to explore the history of exposure and factors that increase the risks of TB infection such as close contact with confirmed TB patients, immunocompromise (e.g. HIV infection), diabetes *mellitus*, and having comorbid diseases such as chronic kidney disease. Therefore, it is necessary to screen the patient for co-infectious diseases listed above. Other risk factors are old age, poor nutrition, and receiving immunosuppressive treatments.⁶ Regarding this case, the risk factors are not clear.

In summary, the significance of this case is the recognition of risk factors for skeletal TB and chronic symptoms, so that they can be treated properly. Early diagnosis and treatment can be achieved through with careful anamnesis that does not ignore the history of close contact with confirmed case TB patients, risk factors for TB infection, physical/clinical, radiological, and laboratory examinations. It is important for clinicians, especially those who work in an area endemic to suspect chronic joint pain whose clinical symptoms do not improve with conventional treatment as skeletal TB as the differential diagnosis. The specific AFB smear and culture tests are still important, although can occasionally show false negative results. Extrapulmonary TB can be deceptive because it does not always cause typical symptoms and pulmonary involvement. Prompt diagnosis and treatment are essential to prevent joint damage and impaired function.

Patient's perspectives

Left-arm and elbow pain, swelling, and immobility made me suffer. I knew that I had to go to the hospital for further treatment. However, I was afraid of surgery and at the suggestion of my family, I underwent traditional medicine with massage therapy for almost 1 year. I didn't expect that my illness would get worse and I had to have surgery immediately and take long-term medication. Now I feel better, my arm pain and swelling of my left elbow have decreased, even though

I haven't been able to move my arm to its full potential.

Data availability

All data underlying the results are available as part of the article and no additional source data are required.

Consent

Written informed consent for publication of their clinical details and clinical images was obtained from the patient.

References

1. Thimmaiah VT, Deepashree: Unusual presentation of tuberculosis of elbow joint: a case report. *Res Rev: J Med Health Sci.* 2013; 2(4): 17–20.
2. World Health Organization: WHO. Global tuberculosis report[Internet]. *Who. int.* 2018 [cited 2021 Apr 1].
[Reference Source](#)
3. Holmes CB, Hausler H, Nunn P: A review of sex differences in the epidemiology of tuberculosis. *Int J Tuberc Lung Dis.* 1998; 2(2): 96–104.
4. Broderick C, Hopkins S, Mack DJF, *et al.*: Delays in the diagnosis and treatment of bone and joint tuberculosis in the United Kingdom. *Bone Joint J.* 2018 Jan; 100-B(1): 119–24.
[PubMed Abstract](#) | [Publisher Full Text](#)
5. Pigrau-Serrallach C, Rodríguez-Pardo D: Bone and joint tuberculosis. *Eur Spine J.* 2012 Jun 19; 22(S4): 556–66. [PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
6. Mousa HA-L : Bones and Joints Tuberculosis. *Bahrain Med Bull.* 2007; 29(1): 17–21.
7. Dhillon M, Goel A, Prabhakar S, *et al.*: Tuberculosis of the elbow: A clinicoradiological analysis. *Indian J Orthop.* 2012 Mar; 46(2): 200.
8. Yazici A, Kayan G, Yaylaci S, *et al.*: Tuberculous arthritis of the elbow joint: A case report. *Eur J Rheumatol.* 2016 Sep 26;

3(3): 142–3.

[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)

9. Guan Y, Zeng Z: Elbow arthroplasty complicated by Mycobacterium tuberculosis infection. *Medicine*. 2021 Mar 5;100(9): e24376.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)

10. De Backer AI, Vanhoenacker FM, Sanghvi DA: Imaging features of extraaxial musculoskeletal tuberculosis. *Indian J Radiol Imaging*. 2009; 19(3): 176–86.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
11. Arathi N, Fayaz A, Huda N: Osteoarticular tuberculosis-a three years retrospective study. *J Clin Diagn Res*. 2013; 7(10):2189–92.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
12. Held MFG, Hoppe S, Laubscher M, *et al.*: Epidemiology of Musculoskeletal Tuberculosis in an Area with High Disease Prevalence. *Asian Spine J*. 2017 Jun 30 [cited 2021 Apr 1]; 11(3):405–11.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)
13. Garg RK, Somvanshi DS: Spinal tuberculosis:
A review. *J Spinal Cord Med*. 2011 Sep [cited 2021 Apr 1]; 34(5): 440–54.
[PubMed Abstract](#) | [Publisher Full Text](#) | [Free Full Text](#)

Open Peer Review

Current Peer Review Status:  

Version 2

Reviewer Report 15 June 2022

<https://doi.org/10.5256/f1000research.133791.r137727>

© 2022 Arliny Y. This is an open access peer review report distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

 **Yunita Arliny** 

Department of Pulmonology and Respiratory Medicine, Faculty of Medicine, Universitas Syiah Kuala, Banda Aceh, Indonesia

Changes made in version 2 are good and appropriate.

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: pulmonary infection

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Reviewer Report 06 June 2022

<https://doi.org/10.5256/f1000research.133791.r137728>

© 2022 Rusli M. This is an open access peer review report distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

 **Musofa Rusli** 

Department of Internal Medicine, Faculty of Medicine, Airlangga University, Surabaya, Indonesia

I have no further comments to make.

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Infectious disease

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 1

Reviewer Report 04 April 2022

<https://doi.org/10.5256/f1000research.56876.r127931>

© 2022 Arliny Y. This is an open access peer review report distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

**Yunita Arliny**

Department of Pulmonology and Respiratory Medicine, Faculty of Medicine, Universitas Syiah Kuala, Banda Aceh, Indonesia

1. Reflexology that is done for complaints of elbow pain or pain in other places? Because it is somewhat contrary to the statement of elbow pain and does not seem to be related to delayed therapy.
2. On photo session, it's better if you include a photo of the elbow before the operation.
3. The sentence "The patient was subsequently diagnosed with TB of the elbow joint" should be placed after the results of AFB and histopathological examinations are obtained. the sentence "diagnosed with TB of the elbow joint" should be replaced with suspected TB elbow joint.
4. Please complete the result of AFB examination (IULTD scale) and culture.
5. Has the patients examined of Gene Xpert MTB/RIF from the tissue? Please mention this.
6. Please add an explanation of the epidemiology of bone and joint TB (age, gender) and its pathogenesis.
7. Please explain the sentence "The specific AFB smear and culture tests are still important, although they can occasionally show false negative results.
8. Please mention the gold standard of diagnostics for bones or joint TB.

Is the background of the case's history and progression described in sufficient detail?

Partly

Are enough details provided of any physical examination and diagnostic tests,
— treatment given and outcomes? _____

Partly

Is sufficient discussion included of the importance of the findings and their relevance to future understanding of disease processes, diagnosis or treatment?

Partly

Is the case presented with sufficient detail to be useful for other practitioners?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: pulmonary infection

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 05 May 2022

Desdiani Desdiani, Universitas Sultan Ageng Tirtayasa, Cilegon, Indonesia

Dear Dr. Yunita Arliny,

Thank you for allowing us the opportunity to submit a revised draft of the manuscript "Case Report: Delayed treatment of tuberculosis of the elbow joint" for publication in the F1000Research.

We appreciate the time and effort that you dedicated to providing feedback on our manuscript and are grateful for the insightful comments and valuable improvements to our paper. We have incorporated most of the suggestions made by the reviewers. Please see below, for a point-by-point response to the reviewers' comments and concerns:

Reflexology that is done for complaints of elbow pain or pain in other places? Because it is somewhat contrary to the statement of elbow pain and does not seem to be related to delayed therapy.

This patient complained about pain in his left elbow and noticed swelling. Initially, he complained about pain all over his left arm, after several reflexology massages to alleviate his toothache for almost 2 months. However, instead of seeking medical treatment, he visited a traditional massage therapist every week without improvement in his left arm pain including his left elbow for almost one year. At the first hospital visit, the elbow pain had gotten more severe and it became swollen. Discharge emerged from a small skin perforation located on the inner side of the left elbow. The patient finally went to the orthopedic department and underwent surgery.

On photo session, it's better if you include a photo of the elbow before the operation.

Initially, this patient came to the orthopedic clinic and was treated because of severe pain and swelling in the elbow of the left arm. Unfortunately, the orthopedic specialist did not think to take a photo, he was immediately treated and underwent laboratory and

radiological examinations, and then surgery was performed.

The sentence "The patient was subsequently diagnosed with TB of the elbow joint" should be placed after the results of AFB and histopathological examinations are obtained. the sentence "diagnosed with TB of the elbow joint" should be replaced with suspected TB elbow joint.

We agree and have updated.

Please complete the result of AFB examination (IULTD scale) and culture. The result of the AFB examination is based on types of grading scale by the World Health Organization and the International Union against Tuberculosis and Lung Disease (WHO-IUATLD): **1–10 AFB per field, 2+**. Tissue culture was found to be positive.

Has the patients examined of Gene Xpert MTB/RIF from the tissue?

Please mention this.

Initially, this patient came to the orthopedic clinic and was treated because of severe pain and swelling in the elbow of the left arm. Unfortunately, the orthopedic specialist did not think to take a photo, he was immediately treated and underwent laboratory and radiological examinations, and then surgery was performed. The source of the sample for histopathological examination was taken from white granulation tissue on the posterior region of cubiti sinistra. Histopathological examination showed granulomatous inflammation, swollen connective tissues containing epithelioid tubercle nests with necrotization, and datia Langhans cells.

Please add an explanation of the epidemiology of bone and joint TB (age, gender) and its pathogenesis.

We agree and have updated.

In Europe and the United States, bone and joint TB accounts for 2.2–4.7 percent of all TB cases and roughly 10–15 percent of EPTB cases, whereas in developing countries, particularly Asia, the incidence of EPTB rises to 15–20 percent. Males and females have identical rates of infection with Mycobacterium tuberculosis until adolescence, following which males have a greater rate. For all ages, male rates became higher than female rates. Many developing countries' current notification rates for both sexes are comparable to those of industrialized countries in the mid-twentieth century, though the sex and age pattern is similar to that of industrialized countries today, with men's disease rates exceeding women's after the age of fifteen. These data raise the potential that tuberculosis cases among women in underdeveloped countries are underreported. The average age of tuberculous vertebral osteomyelitis patients is 45–60 years old. Nonetheless, some research show a bimodal age distribution, with two peaks, one between 20 and 30 years old, linked to immigration and/or HIV infection (60 percent of cases in one study), and the other between 60 and 70 years old. Simultaneous extraspinal involvement is seen in 5–50% of cases, while concomitant lung illness is seen in 2.3–65% of cases. The development of symptoms in spinal TB is usually gradual, and the disease progresses slowly, albeit an early

onset has been documented. Symptoms might last anywhere from two weeks to many years at the time of diagnosis. The typical symptom duration was at least 12 months in early studies, although more current articles report a symptom duration of 2–7 months. Pain is

common (83–100%), although only a third of individuals have a fever or other constitutional symptoms. Patients with extraspinal TB and those with disseminated disease are more likely to experience these symptoms. In tuberculosis of the upper limb, the elbow joint is the most commonly implicated joint. The incidence of elbow tuberculosis has been observed to range from 2 to 5% of all skeletal sites. There are only a few important reports on TB of the elbow joint that have been published. There were no management options or classifications. Histopathology, AFB staining, and polymerase chain reaction (PCR) were all performed on the samples.

Pathogenesis

Reactivation of bacilli embedded in bone during the first mycobacteremia of primary infection causes tuberculous elbow and arthritis. The extensive vascular supply of the vertebra and growth plates of the long bones explains the bacillus' preference for the spine and major joints. Musculoskeletal tuberculosis develops as a result of the bacilli being seeded in the bloodstream shortly after the initial pulmonary infection. Osteoarticular tuberculosis begins as osteomyelitis in the growth plates of bones, where the blood supply is strongest, and subsequently spreads locally into joint spaces. It can also spread through the lymphatic system; however this is a less usual occurrence. The stimulation of dormant lymphatic or blood stream areas of morbidity might cause infections in joints. In the long bones, tuberculosis begins in the epiphysis and progresses to the marrow, where it causes tubercle formation and trabeculae infection. The mycobacteria cause an inflammatory response in the synovium of the joint, which is followed by the production of granulation tissue. The granulation tissue pannus then starts to erode and degrade cartilage and finally bone, resulting in demineralization. Proteolytic enzymes that damage peripheral cartilage aren't created because tuberculosis isn't a pyogenic infection. As a result, for a long period, the joint space is kept. Abscesses in the surrounding tissue may occur if the infection is allowed to proceed without treatment. Sequestration of bone is uncommon due to the absence of space-occupying exudates with substantial interruption of vascular supply. As a result, the active phase of tuberculous elbow is characterized by bone loss without sequestra and little new bone growth.

Please explain the sentence "The specific AFB smear and culture tests are still important, although they can occasionally show false negative results."

A negative AFB smear indicates that there is no infection, that symptoms are caused by anything other than mycobacteria, or that mycobacteria were not present in sufficient numbers to be detected under a microscope. In order to increase the likelihood of finding the organisms, at least three samples are usually taken. However, if AFB smears are negative but a strong suspicion of a mycobacterial infection remains, more samples may be taken and analyzed on different days. Because the culture media permits tiny amounts of germs to thrive and be detected, a smear negative sample can nonetheless grow mycobacteria. AFB smears that are positive suggest a mycobacterial infection. To confirm a diagnosis, however, a culture must be taken. AFB smear results are combined with results from the nucleic acid amplification test (NAAT) for TB in persons who have signs and symptoms of an active TB infection. Though a culture is required for a conclusive diagnosis, the results of the smear and NAAT may be useful in determining what to do.

Histopathology, AFB staining, and polymerase chain reaction all validated the diagnosis of

elbow tuberculosis (PCR). Biopsy without affecting the bone's integrity. The histopathologic

results such as epitheloid infiltration, tubercle formation, caseous necrosis, and Langhan's giant cells confirmed the TB pattern.

Please mention the gold standard of diagnostics for bones or joint TB. Bone biopsy is the gold standard for diagnosis.

References :

- [1] Holmes CB, Hausler H, Nunn P. A review of sex differences in the epidemiology of tuberculosis. *Int J Tuberc Lung Dis.* 1998;2(2):96-104.
- [2] Dhillon M, Goel A, Prabhakar S, Aggarwal S, Bachhal V. Tuberculosis of the elbow: A clinicoradiological analysis. *Indian J Orthop.* 2012;46(2):200. DOI: <https://doi.org/10.4103/0019-5413.93684>
- [3] Haider Abdul-Lateef Mousa. Bones and Joints Tuberculosis. *Bahrain Med Bull .* 2007;29(1):17-21.
- [4] Pigrau-Serrallach C, Rodríguez-Pardo D. Bone and joint tuberculosis. *Eur Spine J.* 2013;22 Suppl 4(Suppl 4). DOI: <https://doi.org/10.1007/S00586-012-2331-Y>

Competing Interests: None

Reviewer Report 05 July 2021

<https://doi.org/10.5256/f1000research.56876.r88014>

© 2021 Rusli M. This is an open access peer review report distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



Musofa Rusli 

Department of Internal Medicine, Faculty of Medicine, Airlangga University, Surabaya, Indonesia

The background and risk factors of the case and the case's progression are sufficiently described. In addition, there are enough details provided of the physical examination, diagnostic tests, and brief outcome of the case. Furthermore, a good discussion is included of the importance of the findings and their relevance in managing the particular case. Finally, there is an adequate presentation of the clinical management to be useful for other practitioners.

However, some issues need to be taken into account. For example, it is better to use a proofreading service to correct some typographical mistakes. In the Case Report Section, the source of sample in the sentence "histopathological examination was also performed" needs to be clarified; is it from the pus or other tissue?

Below are some references worth considering to be included in the manuscript:

- Boodoo *et al.* (2020¹)
- Liao *et al.* (2017²)

References

1. Boodoo KN, Lillis R: Osteoarticular tuberculosis involving the elbow. *Oxf Med Case Reports*. 2020; **2020** (10): omaa085 [PubMed Abstract](#) | [Publisher Full Text](#)
2. Liao Q, Shepherd JG, Hasnie S: Mycobacterium tuberculosis of the elbow joint. *BMJ Case Rep*. 2017; **2017**. [PubMed Abstract](#) | [Publisher Full Text](#)

Is the background of the case's history and progression described in sufficient detail?

Yes

Are enough details provided of any physical examination and diagnostic tests, treatment given and outcomes?

Yes

Is sufficient discussion included of the importance of the findings and their relevance to future understanding of disease processes, diagnosis or treatment?

Yes

Is the case presented with sufficient detail to be useful for other practitioners?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Infectious disease

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Author Response 13 Jul 2021

Desdiani Desdiani, Universitas Sultan Ageng Tirtayasa, Cilegon, Indonesia

Dear Dr. Musofa Rusli,

Thank you for allowing us the opportunity to submit a revised draft of the manuscript "Case Report: Delayed treatment of tuberculosis of the elbow joint" for publication in the F1000Research.

We appreciate the time and effort that you dedicated to providing feedback on our manuscript and are grateful for the insightful comments and valuable improvements to our paper. We have incorporated most of the suggestions made by the reviewers. Please see below, for a point-by-point response to the reviewers' comments and concerns:

1. We have used a proofreading service to correct some typographical mistakes with scribendi.com
2. The source of the sample for histopathological examination was taken from white granulation tissue on the posterior region of *cubiti sinistra*.

3. We are agree that references such as Voodoo et al. (2020) and Liao et al. (2017) can be used for comparison of clinical, histopathological and radiological findings with the patients we analyzed and reported at this time.

Thank you so much,
Best Regards,

Desdiani Desdiani

Competing Interests: No competing interests were disclosed.

Author Response 15 Jun 2022

Desdiani Desdiani, Universitas Sultan Ageng Tirtayasa, Cilegon, Indonesia

Dear Musofa Rusli,
Thank you for your respond and review.

Best Regards,
Desdiani Desdiani

Competing Interests: No competing interests were disclosed.

The benefits of publishing with F1000Research:

- Your article is published within days, with no editorial bias
- You can publish traditional articles, null/negative results, case reports, data notes and more
- The peer review process is transparent and collaborative
- Your article is indexed in PubMed after passing peer review
- Dedicated customer support at every stage

For pre-submission enquiries, contact research@f1000.com

F1000Research

Published Article Online

F1000Research

SUBMIT YOUR RESEARCH

BROWSE GATEWAYS & COLLECTIONS HOW TO PUBLISH ABOUT BLOG
MY RESEARCH SIGN IN

[Home](#) » [Browse](#) » [Case Report: Delayed treatment of tuberculosis of the elbow joint](#)

CASE REPORT Check for updates

REVISED **Case Report: Delayed treatment of tuberculosis of the elbow joint [version 2; peer review: 2 approved]**

✉ [Desdiani Desdiani](#) ^{1,2}, [Hidayat Rizal](#) ³, [Anindita Basuki](#) ⁴, [Fadilah Fadilah](#) ⁵

[Author details](#)

Abstract

Extrapulmonary tuberculosis (TB) is known to occur in the musculoskeletal system, including the elbow joints. These cases are rarely found because the signs and symptoms are not specific to extrapulmonary TB or other diseases. We report a case of a 24-year-old male, who complained about pain in his left elbow and noticed swelling. Initially, he complained about pain all over his left arm, after several reflexology massages to alleviate his toothache. However, instead of seeking medical treatment, he visited a traditional massage therapist every week without improvement in his left arm pain including his left elbow for almost one year. Examination showed skin perforation with discharge. He also had fever during the first few days when the elbow became swollen. Weight loss and a decreased appetite were also noticed by the patient. The patient went to the orthopedic department and underwent surgery. Radiological examination indicated bone erosion on the left humerus and radius, while posteroanterior chest X-ray did not show any abnormality. Histopathological examinations from biopsy and fluid aspiration showed granulomas and datia Langhans cells. *Mycobacterium tuberculosis* was found on acid-fast bacteria smear and culture. The patient was administered multidrug tuberculosis therapy, which consisted of two months of an intensive phase and seven months of a continuation phase, in accordance with the World Health Organization's guidelines for extrapulmonary tuberculosis treatment. He has currently undergone the continuation phase of the treatment and his condition has improved. Early detection of tuberculosis of the elbow can prevent damage to joint structure and impairment of joint function.

Keywords

Elbow, Arthritis, Tuberculosis, Delayed treatment

✉ Corresponding author: [Desdiani Desdiani](#)

Competing interests: No competing interests were disclosed.

Grant information: The author(s) declared that no grants were involved in supporting this work.

Copyright: © 2022 Desdiani D et al. This is an open access article distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

ALL METRICS

1430
VIEWES

72
DOWNLOADS

[Get PDF](#)

[Get XML](#)

[Cite](#)

[Export](#)

[Track](#)

[Share](#)

Open Peer Review

Reviewer Status ✓✓ ⓘ

Reviewer Reports

	Invited Reviewers	
	1	2
Version 2 (revision) 13 May 22	✓ read	✓ read
Version 1 18 Jun 21	✓ read	? read

1. [Musofa Rusli](#) ¹, Airlangga University, Surabaya, Indonesia
2. [Yunita Arliny](#) ², Universitas Syiah Kuala, Banda Aceh, Indonesia

Comments on this article

All Comments (0)

[Add a comment](#)

Sign up for content alerts

SIGN UP

Browse by related subjects

Link : <https://f1000research.com/articles/10-486/v2>

