



Case report

Chest wall tumor tuberculosis in Indonesian adolescent: A rare case

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ARTICLE INFO

Keywords:

Chest wall tumor

Extrapulmonary tuberculosis

GeneXpert

Tuberculosis

ABSTRACT

Background: Extrapulmonary tuberculosis has increased in the last few decades, and establishing a diagnosis is still challenging.

Case presentation: A 15 years old Indonesian adolescent complained of a lump on the right lung. The patient and his mother had a history of pulmonary tuberculosis and received the anti-tuberculosis drug. Chest inspection showed a soft consistency mass, smooth surface, poorly defined borders, and size of 7 × 7 cm in the posterolateral dextra region. Radiological examination showed a mass of 2 × 2.5 × 5.3 cm in the right anterior mediastinum. FNAB lymph nodes showed granulomatous inflammation consistent with tuberculosis. The patient had a wide excision tumor, and a GeneXpert MTB/RIF examination of the tumor excision material showed that *Mycobacterium tuberculosis* was detected very low. The patient received an anti-tuberculosis drug and had a good prognosis.

Discussion: Patients with a family history of tuberculosis should be examined for tuberculosis. Although in a patient with lung carcinoma signs and symptoms, it does not rule out chest wall tuberculosis.

Conclusion: Enforcement of the correct diagnosis can increase the prognosis of extrapulmonary tuberculosis.

1. Introduction

Cases of extrapulmonary tuberculosis in the last few decades have continued to increase, and the diagnosis of extrapulmonary tuberculosis is still tricky and a challenge for clinicians and laboratories because of the atypical symptoms, complex sampling, and causing errors in diagnosis [1–3]. Cases of extrapulmonary tuberculosis are estimated at 14 %, and 3.5 % resistance to rifampicin is found in new cases [1,2,4]. Recently, an increase in extrapulmonary tuberculosis cases in children has also been reported [5,6]. Based on this description, we are interested in reporting An Indonesian adolescent with chest wall tumor tuberculosis. The report based on SCARE 2020 guidelines [7].

2. Case presentation

A 15 years old Indonesian adolescent complained of a lump on his right lung 2 months ago A painful lump was initially found and are no longer felt. The patient and his mother had a history of pulmonary tuberculosis and consumed anti-tuberculosis drugs. In contrast, his

grandfather has nasopharynx carcinoma. Physical examination showed palpable enlarged lymph nodes in the right Colli with the size of 1 × 1 cm and mobile. There was a mass in the right posterolateral region on the chest. The mass was soft in consistency, smooth surface, not well defined, with size of 7 × 7 cm (Fig. 1). Chest X-ray and thorax CT scan showed multiple subpleural right middle hemithorax nodules (Fig. 2). FNAB shows granulomatous inflammation consistent with tuberculosis.

The patient underwent wide excision of the tumor with a margin of 2 cm. The removed tissue was then examined for vries coupe or frozen section to ensure tumor-free margin and tumor type (benign/malignant). After ensuring the margin was free from tumor, the chest wall defect was closed with polypropylene mesh and then sutured layer by layer. Anatomical pathology results indicated that the epithelioid formed granulomas with cell datia (Fig. 3). This condition is supported by the GeneXpert MTB/RIF examination with tuberculosis detected. The patient has treated for the post-surgical wound and was given an anti-tuberculosis drug. The patient had a good prognosis and no nodule recurrence was found. 6 months after receiving the anti-tuberculosis drug, and the patient was declared cured.

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<https://doi.org/10.1016/j.ijscr.2022.107587>

Received 11 August 2022; Accepted 29 August 2022

Available online 31 August 2022

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Fig. 1. Chest inspection showed a mass in hemithorax dextra.

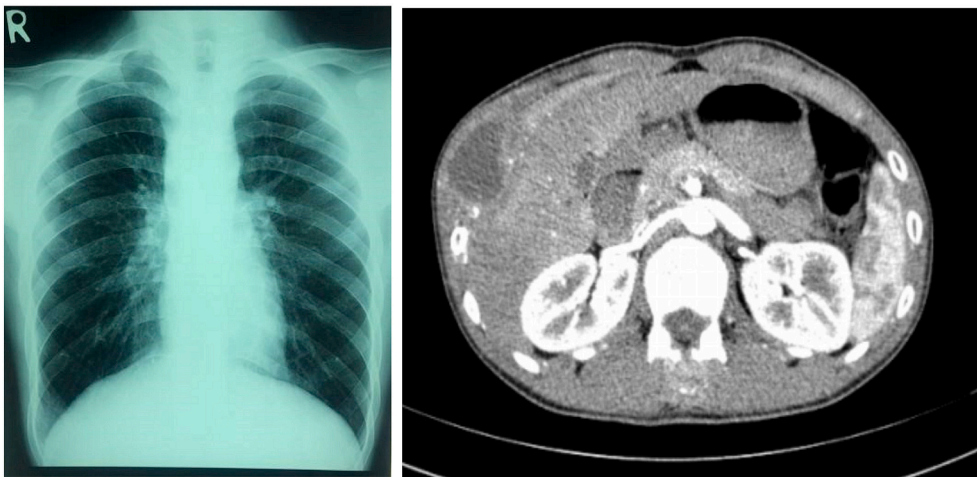


Fig. 2. Radiological investigation showed a mass in hemithorax dextra.

3. Discussion

According to the WHO classification, extrapulmonary tuberculosis is a *Mycobacterium tuberculosis* infection that attacks tissues and organs outside the lung parenchyma in as many as 20–25 % of tuberculosis cases [8]. Organs and clinical manifestations often found in extrapulmonary tuberculosis include meningitis, lymphadenitis, pleurisy, pericarditis, peritonitis, abdominal, genitourinary, musculoskeletal and ocular oral [9]. In Korea, extrapulmonary tuberculosis cases are reported as much as 20 % of all tuberculosis cases and continue to increase from year to year [10].

In this case, there was a complaint of a lump on the right chest for two months without pain and getting bigger. Tuberculous lymphadenitis cases, or what is known as scrofula, is a clinical manifestation that is often found in extrapulmonary tuberculosis cases by 35–40 %, is a harmless case and usually occurs on one side of the affected organ [11]. Enforcement of the diagnosis of extrapulmonary tuberculosis is still a challenge for clinicians and laboratories, so a fast, accurate examination is needed. Investigations, in this case, are rapid molecular examination or GeneXpert MTB/RIF. GeneXpert MT/RIF can detect *M. tuberculosis* and rifampicin resistance [1,10,12].

The sensitivity and specificity of GeneXpert MTB/RIF for detecting rifampicin resistance were 98 % and 99 %, and for detecting *Mycobacterium tuberculosis*, the sensitivity and specificity of GeneXpert MTB/RIF

were 78 % and 90 % [1]. The sensitivity of GeneXpert depended on the material examined. The high sensitivity of GeneXpert was found in lymph node preparations, followed by preparations of cerebrospinal fluid to detect TB meningitis (80.5 % and 83.1 %) [10].

Wide excision tumor in cases of chest wall tumor tuberculosis is effective because, in this case, it is not a malignancy where the risk of recurrence is minimized. The wide excision of a tuberculous tumor also depends on the nodule's location. In this case, the diagnosis plays a vital role because it serves as a reference in the treatment [13,14].

4. Conclusion

Establishing a diagnosis of extrapulmonary tuberculosis is still tricky, so it becomes a challenge for clinicians and laboratories due to complex specimen collection, which can lead to false negative results. Examination using rapid molecular tests or GeneXpert MTB/RIF can assist in the diagnosis of extrapulmonary tuberculosis, where the sensitivity and specificity of GeneXpert MTB/RIF for pulmonary tuberculosis are 78 % and 90 %, respectively. Enforcement of the correct diagnosis can increase therapy's success and prognosis.

Funding

None.

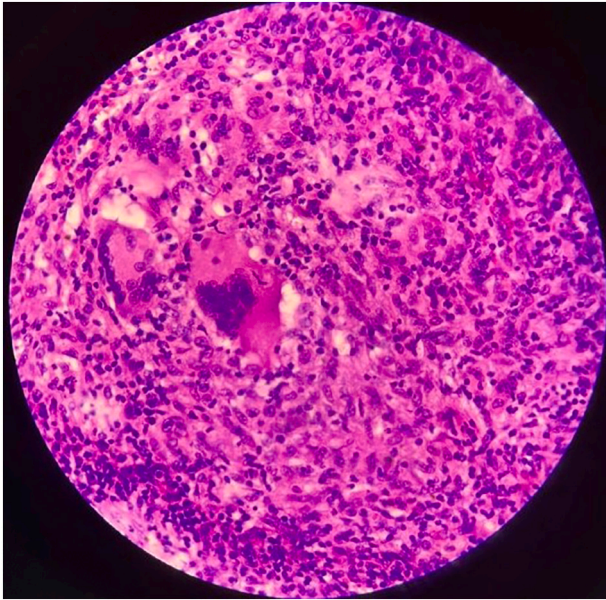


Fig. 3. Histopathological analysis result was granuloma tuberculosis with cell debris.

Ethical approval

Not applicable.

Consent

Written informed consent was obtained from the parent/guardian for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

All authors contributed toward data analysis, drafting and revising the paper, gave final approval of the version to be published and agree to be accountable for all aspects of the work.

Registration of research studies

None.

Guarantor

Jusak Nugraha is the person in charge of the publication of our

manuscript.

Declaration of competing interest

Asih Herawati, Jusak Nugraha, Dhihintia Jiwangga Suta Winarno, and Mohamad Rizki declare that they have no conflict of interest.

Acknowledgement

We would like thanks to our editor, “Fis Citra Ariyanto”.

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