Case Report

A case of empyema necessitans in an adolescent with mycobacterium tuberculosis

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1. Introduction

An empyema is a buildup of pus in the pleural space, most commonly associated with pneumonia. Although staphylococcus aureus is common in developing countries, pneumonia is the common cause of pneumonia. [1]. Pleural TB is the most frequent extrapulmonary tuberculosis presentation and the leading cause of pleural effusion in the world. [2]. empyema necessitans is An extravasation of purulent material outside the pleural space involving the chest wall. [3].An exudative fluid in the pleural cavity collects and forms a fistula, resulting in a subcutaneous accumulation where the patient might be present with a chest wall lump and that lump could go unnoticed since it does not cause significant symptoms Antibiotics, tube drainage, and decortication to obliterate the cavity and restore pulmonary function are all possible treatments for this illness. [4]. He we report a pediatric case of tubeculos empyema necessitans presenting with chest wall mass treated with open drainage, tube thoracotomy, and tuberculosis treatment.

2. Case report

A 15- years-old girl presented with swelling on the right thorax wall. and told that swelling was there for 1 year with moderate discomfort upon lifting object no other complaint. Her medical history was unremarkable until the mass appeared. There was no history of fever, cough, or weight loss, and there was no family history of tuberculosis.

Under sedation we made 4cm incision over the mass and deepened the incision through fascia and thorax muscles to mass then punctured the mass and took fluid sample from the mass content and sent to TB center for gene expert analysis,culture and sensitivity. then emptied whole content which was yellow purulent material and pus was also coming from thorax cavity through intercostals space which...
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Road to the diagnosis

Tuberculosis (TB) is a highly contagious infection that causes major morbidity and mortality. It is the tenth greatest cause of death among HIV-positive and immune-compromised patients worldwide, accounting for more than 90% of deaths in developing countries [6]. For current case study is HIV negative and has no immune compromising diseases and immune suppressing medication as well. Empyema necessitatis can be quite harmful. It has the potential to cause bone and soft tissue erosion. This may be asymptomatic at first and proceed at a slow and steady pace. Tuberculous EN can be treated with both surgical and medical treatments. This case applies to both surgical intervention and medical treatment with antituberculosis. Because of its paucibacillary form and frequently hidden location, extrapulmonary tuberculosis (EPTB) is difficult to diagnose. The diagnosis is frequently overlooked or discovered too late in the disease’s progression, when consequences have already developed and Direct isolation of tuberculous bacteria requires collecting the appropriate sample, mostly with invasive procedures [6].

Our case underwent surgical intervention to collect sample for isolation of tuberculosis bacteria. Potts KJ et al. described a 33-year-old female diabetic and hypertensive patient who developed pulmonary TB with empyema necessitatis and was treated with only TB medication [7]. The current case has no chronic disease and is being treated with surgical intervention and a combination of medical treatments.

Adolescence is marked by a significant increase in the incidence of TB, which has been known since the early twentieth century. The majority of the world’s adolescents reside in low and middle-income nations, where TB is still prevalent and they make up a quarter of the population. Despite this, teenagers have yet to be recognized as a unique demographic in TB policy or treatment programs, and new data reveals that current care models may not satisfy their requirements [8]. Finally, pediatric EN is quite rare. This may result in underdiagnosis in the early stages of pediatric cases [4]. If not detected early and treated appropriately, the morbidity and death can be substantial. This case serves as a reminder that extrapulmonary tuberculosis can manifest without the classic symptoms of pulmonary tuberculosis, such as cough, night sweats, and weight loss. The presence of a chest wall mass in a patient from a TB pandemic area should raise clinical suspicion for empyema necessitatis.

3. Discussion

Tuberculosis (TB) is a highly contagious infection that causes major morbidity and mortality. It is the tenth greatest cause of death among HIV-positive and immune-compromised patients worldwide, accounting for more than 90% of deaths in developing countries [6]. For current case study is HIV negative and has no immune compromising diseases and immune suppressing medication as well. Empyema necessitatis can be quite harmful. It has the potential to cause bone and soft tissue erosion. This may be asymptomatic at first and proceed at a slow and steady pace. Tuberculous EN can be treated with both surgical and medical treatments. This case applies to both surgical intervention and medical treatment with antituberculosis. Because of its paucibacillary form and frequently hidden location, extrapulmonary tuberculosis (EPTB) is difficult to diagnose. The diagnosis is frequently overlooked or discovered too late in the disease’s progression, when consequences have already developed and Direct isolation of tuberculous bacteria requires collecting the appropriate sample, mostly with invasive procedures [6].

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4. Conclusion

Empyema necessitatis is uncommon consequence of pleural space infection. Pulmonary mycobacterium tuberculosis, Actinomyces, and nontuberculous organisms such Staphylococcus aureus are the most prevalent causes. Gram-negative bacterial infections, such as those caused by Proteus spp., should also be evaluated as a cause of pleural effusion in empyema necessitatis. The diagnosis of this case was challenging since it was difficult to differentiate between tuberculous and nontuberculous effusion before effusion drainage culture result.

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No need ethical approval for case report study in our Hospital.

Consent

A written informed consent was obtained from her father for publication in this case study.

A copy of written consent is available for review by the editor-in-chief of this journal on request.

Author contributions

Abdishakur Mohamed Abdi wrote the manuscript and corrected the manuscript for its scientific basis.

Abdullah Yusuf Ali collected the data for the study.

Ervin Mambet director of the Department of Surgery and the consultant surgeon who provided the case.

All authors have read and approved the final manuscript.

Guarantor

DR. Abdishakur Mohamed Abdi corrected the manuscript for its scientific basis.

Declaration of competing interest

The authors have no conflicts of interests.

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Fig. 3. Thorax CT scan of post op day 5.