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Chest Wall Tuberculosis in an Infant: A Rare Case Report

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1. Abstract

1.1. Background: Tuberculosis is still an important world health problem. The parietal chest wall site in children is an extremely rare form of tuberculosis. Its diagnosis is often so difficult requiring a surgical biopsy.

1.2. Case Presentation: We report the case of 1.5-year-old infant, with no family history of active tuberculosis, who had a swelling of the anterior chest wall for two months. Physical examination found a swelling measuring 1.5 cm by 1 cm in relation to the second parasternal intercostal space, fluctuating in its center, with an inflammatory skin which fistulized giving a bud-like appearance with a purulent exudate. Chest X-ray was normal. The thoracic computed tomography showed a sternal mass responsible for a bone lysis with an infiltration. Pathology examination of biopsies of the parietal mass confirmed the diagnosis of caseo-follicular tuberculosis with lesion of tuberculosis osteitis. Human immunodeficiency virus serology was negative, early morning gastric aspirates performed on two consecutive days were negative for acid-fast bacilli, and quantiferon TB Gold in tube test resulted was also negative. Anti-tubercular therapy was started with prolonged regimens for 12 months. She has allowed a favorable outcome with healing of the thoracic parietal lesion after 6 months.

1.3. Conclusions: Diagnosis of chest well tuberculosis is still challenging even if we are in endemic area and it must be conducted early, his management is based on both surgery and anti-tubercular therapy for having a complete recovery. Prompt diagnosis and treatment are important to prevent serious complications.

2. Introduction

Tuberculosis remains a real health problem in developing countries. Its localization to the chest wall is extremely rare. It is an unusual presentation of extra-pulmonary tuberculosis, and accounts for less than 5% of osteoarticular tuberculosis, which is estimated to account for 15% of extra pulmonary tuberculosis [1]. The clinical symptomatology is not very specific. Diagnosis of this form of tuberculosis is often not so easy, relying on ultrasound and CT scan and surgical biopsy. We report an unusual case of chest wall tuberculosis in an infant after parental consent with a review of the literature.

3. Case History

One and half year-old girl was referred to the pediatric unit for right painless parasternal swelling. She had not relevant contact and received bacillus Calmette-Guérin vaccine at birth. The child has a painless right parasternal right swelling that has been developing insidiously for two months and gradually increasing in size. The examination did not show any signs of bad general condition, however the parents report no improvement to a usual antibiotic prescribed on an outpatient basis and a fairly satisfactory nutritional status. The physical examination heart rates of beats 130 per minute, respiratory frequency of breaths 35 per minute, arterial blood pressure of 90/50 mmHg, temperature 36.9 C, body weight 10 kg (- 1 DS), and size 75 cm (M). Moreover, we found a swelling measuring 1.5 cm by 1 cm in relation to the second parasternal

intercostal space, fluctuating in its center, with an inflammatory skin which fistulized giving a bud-like appearance with a purulent exudate (Figure 1). She had a bilateral cervical adenopathies, the pleuropulmonary examination was normal. Blood test was showed white blood cell count 13000 cell /mm^3 with lymphocytic at 9800/ mm^3 and a sedimentation rate of 13 mm at the first hour. Human immunodeficiency virus serology was negative, early morning gastric aspirates performed on two consecutive days were negative for acid-fast bacilli, and quantiferon in tube test resulted negative. Chest X-ray was normal. The thoracic ultrasound shows the presence of a heterogeneous hypoechoic formation adherent to the left sternochondral rib measuring 31 x 10 x 19.5 mm which appears fine in depth and is the site of multiple hyperechoic images without shadow cone. Thoracic CT revealed an oval sternal mass measuring 43.6 x 25.3 x 32.3 mm responsible for lytic bone lesion with adjacent infiltration, probably related to tubercular disease with a ground glass opacity in the right middle lobe. A biopsy of the mass showed epithelioid cells and langhans giant cells and caseous necrosis, with tuberculosis osteitis lesion and without signs of malignancy, a pus sample for bacteriological study and genexpert were negative. Chest X-ray and abdominal ultrasound were performed to search other locations were normal. Antitubercular therapy (isoniazid, rifampin, pyrazinamide and ethambuthol) was started with prolonged regimens (2 RHZE/10 RH) for 12 months. During treatment, the patient had a good weight, no adverse drug reactions. The follow – up was only clinical and the recovery was obtained after 6 months of treatment with healing of the thoracic parietal lesion (Figure 2).

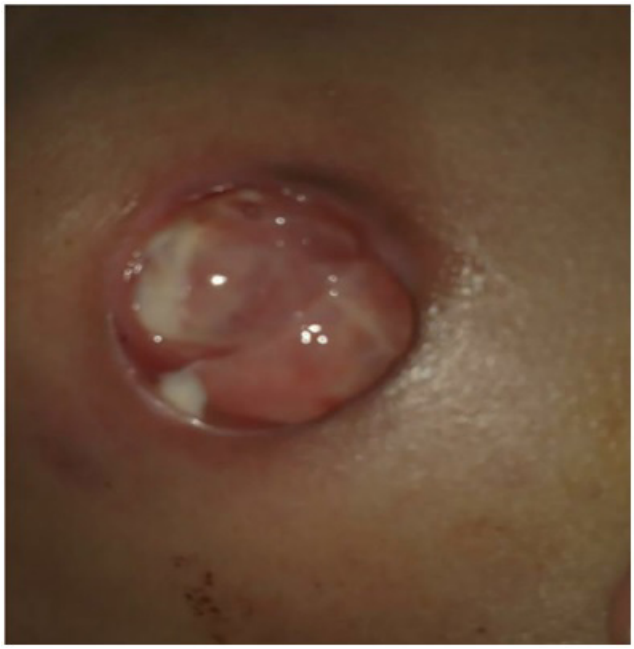

Figure 1: A swelling mass in relation to the second parasternal intercostal space, fistulized in the skin with a purulent exudate

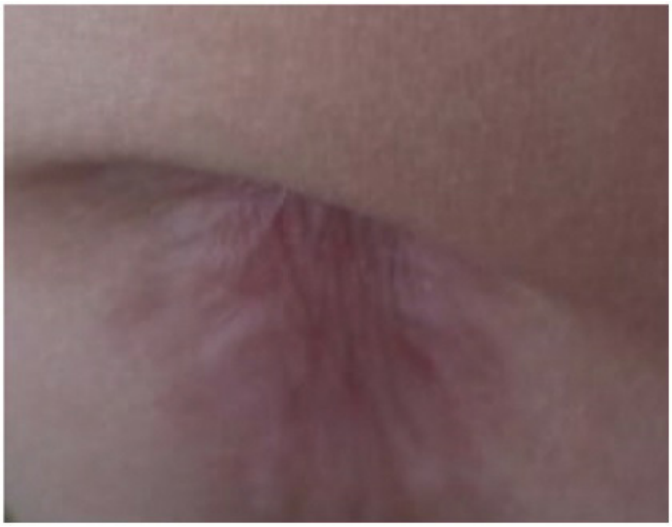

Figure 2: Healing of the thoracic parietal lesion after 6 months of treatment

4. Discussion

Tuberculosis continues to be an important world health problem. Tuberculosis of the chest wall is extremely rare. It accounts for 0.1% of all forms of tuberculosis [1], and occurs by three mechanisms: direct extension from a pleuropulmonary site, lymphatic involvement from lymphadenopathy, or dissemination by blood [2, 3]. Costal and intercostal involvement is the most common. Sternal, clavicular, subcostal and soft tissue damage without associated bone involvement is exceptional [4]. The parasternal site encountered in our case is the preferred site, this could be explained by the anterior intercostal lymph nodes that are most often involved. Anterior tuberculosis is encountered in 83% of patients with cold abscesses of the chest wall [5]. We had no known family history of tuberculosis, but this does not rule out a diagnosis [6]. In fact, we must keep in mind tuberculosis diagnosis because we are an endemic area of tuberculosis. Time before diagnosis was 2 months which was similar to a Mexican series [7]. Clinically, the mass is rarely fluctuating and is characterized by the absence of inflammatory signs [2], which contrasts with our case.

Tuberculosis abscesses can often fistulate in the skin, which was the case in our patient [4]. A part from Mycobactérium, bacterial infections caused by Staphylococci, Streptococci, Salmonella, Haemophilus influenzae, Brucella and Actinomycetes, and fungi infections such ascoccidioidomycosis and blastomycosis can also cause rib osteomyelitis [8]. Chest X-ray may show pleural effusion or parietal opacity [9]. It was normal in our case, however associated pleuropulmonary tuberculosis has been reported in about 30 to 40% of cases in the literature [10]. Elsewhere, ultrasonography may show the softened character of the mass and guide the biopsy. Thoracic tomodensitometry, which is more efficient and more sensitive than chest X-ray, reveals a mass of heterogeneous density with hypo dense central areas of necrosis, sometimes with

calcifications and bone or costal destruction. It looks for other pulmonary or pleural localizations and allows us to guide the biopsy, which is similar to our case. Tests measuring in vitro the release of interferon gamma in response to specific antigens of the mycobacterium tuberculosis complex (IGRAs) can replace intradermal tuberculin reaction at any age [6]. Histological evidence allows the elimination of a tumor origin, especially if the patient is immunocompetent. The treatment of cold abscesses is not very codified, it combines surgery with anti-tubercular therapy to prevent relapse. The usual treatment is similar to the one recommended by the world health organization for osteoarticular tuberculosis, which is based on isoniazid, rifampicin, pyrazinamide, and ethambutol for 2 months and followed by isoniazid and rifampicin for 10 months [7]. The prognosis is most often good, depending on the delay in diagnosis and the start of treatment. Finally, the best treatment is preventive and BCG vaccination at birth if the immune status is normal.

5. Conclusion

Parietal chest wall tuberculosis is extremely rare in pediatrics. Its clinical signs are non-specific. Diagnosis is challenging and management is based on surgery with anti-tubercular therapy. The prevention still mandatory.

References

1. Mathlouthi A, Ben Mrad S, Meral S, et al. Tuberculosis of the chest wall: development from 4 personal observations and review of the literature. Rev Pneumol Clin. 1998; 54: 182-6.
2. El Barni R, Lahkim M, Achour A. Tubercular abscess of chest wall in children. Pan African Medical Journal. 2013; 14: 9.
3. Zidane A, Bakzaza O, Afandi O, et al. Cold abscess of the chest wall: About 3 cases. Rev Pneumol clin. 2015; 71: 290-3.
4. Ka AS, Brousse V, Diakhate I, et al. Tubeculosis cold abscess of chest wall in children: About 3 cases. Arch Pediatr. 2006; 13(9): 1265-6.
5. Faure E, Souilamas R, Riquet M, et al. Cold abscess of the chest wall: A surgical entity? Ann Thorac Surg. 1998; 66: 1174-8.
6. Delacourt C. Pediatric tuberculosis in 2020: What's new? Perfectionnement in pediatrics. 2020; 3: 46-5.
7. Saldaña NG, Parra MM, Arias de la Garza E, et al. Case Report: Chest wall tuberculosis without pulmonary involvement in three pediatric immunocompetent patients. Am. J. Trop. Med. Hyg. 2019; 101(5): 1073-6.
8. Bishara J, Gartman-Israel D, Weinberger M, Maimon S, Tamir G, Pitlik S. Osteomyelitis of the ribs in the antibiotic era. Scand J Infect Dis. 2000; 32: 223-7.
9. Mahouachi R, Zendah I, Taktak S, et al. Tuberculosis of chest wall. Rev Pneumol Clin. 2006; 62: 56-8.
10. Gupta AK, Uppal SS. Unusual rib destruction in pleuropulmonary tuberculosis. Indian J Chest Dis. 1991; 33: 87-89.