Tubercular with tubercular osteomyelitis of skull

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Tuberculosis with tubercular osteomyelitis of skull

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***Abstract*---**Tuberculous osteomyelitis of skull is a rare form of tuberculosis with an incidence of 0.2 – 1.3% of all skeletal tuberculosis. A 9-year-old boy presented with a history of prolonged fever, recurrent cough since 2 months before admitted and painless scalp swelling for the previous 1 month. A diagnosis of tubercular etiology was established with the rapid molecular test and histopathology of the fine needle aspiration biopsy specimen. The patient was kept on antitubercular treatment for 12 months. After 2 months treatment he responded well, with a marked resolution of symptoms and physical examination findings.

***Keywords*---**Tuberculosis, skull, osteomyelitis.

Introduction

Tuberculosis of skull is a very rare occurrence and accounts for approximately 1% of skeletal tuberculosis. It usually affects children, 50% being less than 10 years of age and 75-90% less than 20 years of age [1,2].The objective of this case was to report the case of pulmonary tuberculosis with tubercular osteomyelitis of skull.

Case Reports

A 9-year-old boy, presented to hospital with chief complaint of fever since 2 months before admitted. The symptoms accompanied with recurrent cough for 2 months and a scalp swelling in the right and left forehead since one month before admitted which slowly enlarge, painless, red colored and fluctuating. Patients also complained of decreased appetite and weight loss 2 months before being admitted to hospital.

There was a a swelling in scalp in the right and left forehead which slowly enlarge, painless, red colored and fluctuating on right and left frontal. There also node enlargements was found in neck with mobile and soft consistency. The breath sound in both lung were vesicular, there was fine ronchi on the basal of the left lung. From the nutritional state revealed child with moderate malnutrition.

Figure 1: A nine year old boy with lump in frontal areas.

The laboratory examination on the first admission revealed CRP 38.19 mg/L. Thorax xray showed a consolidating with the airbronchogram in the left lung, and skull xray from previous hospital revealed multiple punch out lesion in the right-left frontal and parietal region.

Figure 2: Thorax xray revealed consolidation in the left lung

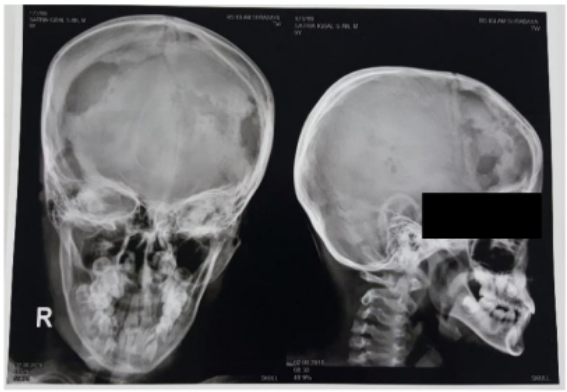

Figure 3: Skull xray revealed multiple punch out lesion

The patient underwent fine needle aspiration biopsy from the nodule in the forehead, the result was a suppurative granuloma inflammation, positive acid fast bacilli. BMA was also performed, revealed non diagnostic bone marrow. On the 6 day of hospitalization rapid molecular tuberculosis test revealed mycobacterium tuberculosis detected low.

Patient was given fixed dose combination with dose 4 tablets a day and ethambuthol 400 mg per day. The current condition of the patient after two weeks given fixed dose combination and ethambuthol remained in fairly good clinical condition, patient no fever and no cough. The skin lesions has already improved gradually, patient increase in comfort and well-being. The weight of the patient remains the same along with improving appetite for daily foods.

Figure 4: After one week fixed dose combination and ethambuthol

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Discussion

Tuberculosis of skull is a very rare occurrence and accounts for approximately 1% of skeletal tuberculosis.[1–3] It usually affects children, 50% being less than 10 years of age and 75-90% less than 20 years of age. Painless swelling of scalp and

discharging sinuses are common presentations but rarely seizures and motor deficit can occur. Our patient initially presented with painless swellings with no motor deficit.[1,4,5]

Parietal and frontal bones are most commonly involved and have been attributed to relatively more cancellous bone elements in these bones as compared to other bones of skull vault. Occipital and sphenoid bones are rarely affected. Though dura acts as strong barrier against intracranial spread, such spread is rarely known to occur.[6] The most frequently involved sites are the frontal and parietal, followed by the occipital and sphenoid bones. This may be due to the abundance of cancellous bone with diploeic channels in this area.[4,7]

The primary infection in most cases is located elsewhere in the body with the lungs being the most common site. Calvarial tuberculosis is believed to result from bacilli that seed hematogenously to the diploe. In the skull, lymphatic dissemination is not as common as in other bones. Another thought suggest a lymphatic mode of transmission which explains the rarity of calvarial tuberculosis. This is because the skull has poor lymphatic supply.[3,7]

Radiographs of the skull, although they are variable and non-specific, can help establish the diagnosis. Rarely seen areas of osteolytic and osteoblastic may be seen early in the disease, later progressing to a punched-out defect with a central sequestrum.[4,7,8] Identification of acid-fast bacilli on smears or biopsy specimens is the definitive diagnosis for tuberculosis, with histopathological findings suggesting a granulomatous lesion.[4] Culture yield is as high as 75% although the results of AFB staining often show negative results.[9] In this case, the FNAB was done to confirm the diagnosis with the results positive for acid fast bacilli.

The management of tuberculosis in children and adolescents has the same basic principles as in adults. To affect a relatively rapid cure and prevent the emergence of secondary drug resistance, several drugs are used during the course of treatment. The choice of a given regimen depends on the extent of the tuberculosis disease, the host, and the likelihood of drug resistance. Extrapulmonary tuberculosis is usually caused by a small number of mycobacteria. Treatment for extrapulmonary tuberculosis in children is generally the same as for pulmonary tuberculosis. This is the exception in cases of bone and joint, disseminated, and CNS tuberculosis which requires 9-12 months of treatment due to insufficient data to recommend 6 months of therapy.[10,11] Based on the technical guidelines for management and treatment of tuberculosis in children, the treatment given for cases of bone/joint tuberculosis is given regimen 2HRZE and 10HR.[12]

Conclusion

Pulmonary tuberculosis with tuberculous skull osteomyelitis is a rare disease, even in countries where tuberculosis is endemic, and generally affects the younger age group of children. The common presentation is swelling of the scalp. Identification of acid-fast bacilli on a smear or biopsy specimen is the definitive diagnosis. Based on the technical guidelines for management and treatment of

tuberculosis in children, the treatment given for cases of bone/joint tuberculosis is given regimen 2HRZE and 10HR.

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