

via cavernous sinus and intracranial propagation of periorbital cellulitis. This was not required in our case due to probably institution of appropriate antibiotic therapy. It may be of merit in severe or late diagnosed cases. Staphylococcal colonization of nasopharynx can lead to ethmoiditis in immunocompromized or susceptible child, with rapid progress locally and hematogenous seeding as in our case. A variety of organisms other than staphylococcus can cause this infection, which is dangerous because it may be complicated by retrobulbar abscess and cavernous sinus infection and thrombosis. Treatment should be started early with intravenous antibiotics. Also, concomitant staphylococcal foci should be looked for and dealt with surgically if necessary. If in any doubt, a contrast enhanced

CT or an MRI should be done as the investigation of choice to differentiate between an inflammatory lesion and a tumor.

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Multifocal Cystic Bone Tuberculosis with Lupus Vulgaris and Lymphadenitis

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Multifocal cystic bone tuberculosis involving axial and extra-axial skeleton is a rare form of this disease entity in children.

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Rarer still is its association with skin tuberculosis and lymphadenopathy. Here we are reporting a case of multiple cystic bone tuberculosis with lupus vulgaris and lymphadenopathy.

Case Report

A 2V2-year-old male child presented with low grade fever and painless swelling of hands and feet for ten months. Three brownish raised lesions on skin and multiple swellings of groin and neck were present for the last 6 months. He had been immunized for BCG and had a history of contact with a patient of tuberculosis in the neighborhood. Examination revealed a child of average built and nutrition, mild pallor, 3-4 firm, nontender and mobile palpable lymphnodes 1-2 cm in size in right cervical region, groin and left axilla. Nodular, brownish lesion 2 x 6 cm was seen on the right buttock and similar lesions were documented on left toe and right leg. The

region of hand over metacarpals and metatarsals was swollen. Spine examination revealed a depression in the region of T₇-T₈ vertebrae. Examination of abdomen, cardiovascular and respiratory systems did not reveal any abnormality.

On investigation, child was found to have a hemoglobin of 8.5 g/dl, ESR of 65 mm, Mantoux of 12 x 12 mm. Chest X-ray revealed a fibrotic band in the right upper zone with areas of spotty calcification in right hilar region, destruction of D8 vertebrae with bilateral paravertebral abscesses. Cystic lesions were seen in metacarpals of both hands, shafts of tibia and fibula, metatarsals and cuboid bone (*Figs. 1 & 2*). X-ray skull did not reveal any abnormality. Fine needle aspiration cytology (FNAC) from cervical lymphnode revealed caseating granuloma with acid fast bacilli. Skin biopsy was suggestive of lupus vulgaris. ELISA for HIV was negative.

The child was treated with four antitubercular drugs (streptomycin, pyrazinamide, isoniazid and rifampicin) for two months and later isoniazid and rifampicin was continued. Swellings subsided and

scales over skin lesions cleared within two weeks of treatment. Cystic lesions of tibia and fibula showed radiological improvement after four months. The child gained height and weight normally as observed on follow up.

Discussion

With the advent of effective chemotherapy for tuberculosis, the incidence of bone tuberculosis has declined. The most frequent site of involvement in skeletal tuberculosis is spine followed by joints. Tuberculous dactylitis and cystic tuberculosis are rare(1). They represent special forms of tuberculous osteomyelitis. Various terminologies have been used for multiple cystic tuberculosis including Jungling's disease, pseudocystic tuberculosis in children and disseminated bone disease in adults(2). In children, multiple focal lesions are more common and peripheral skeleton is more commonly involved than axial skeleton as compared to adults. Lesions in shaft or metaphysis of long bones as seen in our case are seen in less than 1% cases(1). The exact incidence of multifocal cystic tuberculosis is not known but a study has given



Fig. 1. Cystic lesion in first metatarsal.

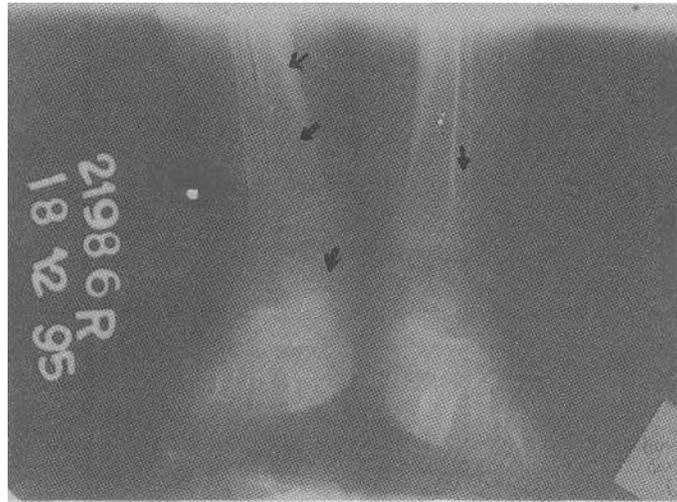


Fig. 2. Multiple cystic lesions in lower end of tibia, fibula and cuboid bone.

an incidence of multifocal osteoarticular tuberculosis in the Indian population to be 7-10% of skeletal tuberculosis(3). This study included children as well as adults with bone involvement, joint involvement or both. Tuberculous dactylitis is more common than cystic tuberculosis and its reported incidence is 0.5 to 14% and is usually seen in children less than 5 years of age(4).

Mantoux positivity varies from 60-80% and most cases have evidence of pulmonary involvement(3). Bone lesions present in a bizarre fashion and mimic other diagnosis like pyogenic osteomyelitis, sarcoidosis and fungal infection; hence biopsy is usually required to confirm the diagnosis^(^). Biopsy was not done in our case as we had evidence of tuberculosis in the form of Mantoux positivity and primary involvement of lungs. Skin biopsy and FNAC of lymph nodes was diagnostic of *Mycobacterium tuberculosis* infection. Multiple cystic lesions usually respond well to chemotherapy and curettage, and bone grafting is rarely required(3). Overall the prognosis of this form of tuberculosis is good.

Most Indian studies have reported cases

of cystic tuberculosis involving only the skull(6,7) with few reports similar to our case(8). The incidence of skin tuberculosis with cystic bone tuberculosis in children is not known. There is one case report of lupus vulgaris with multiple bone lesions due to BCG in 1954(9). It was estimated that 40% cases of lupus have associated cervical adenitis or lupus of mucous membranes and 10-20% have pulmonary or bone involvement(10). Multiple lesions in bone can also be seen due to hematogenous spread of bacilli 6-12 months following BCG vaccination. They are usually seen in children 5 months to 6 years of age. Tubular bones and ribs on side of vaccination are usually involved. The computed incidence is 1 in 5000 to 1 in 8000 and these lesions have a good prognosis. Such lesions are not associated with immunological disorders and diagnosis can be established only by culture of organisms(11,12). In our case, pulmonary involvement was seen and lesions were not predominant on the side of vaccination and hence BCG osteomyelitis was not considered as the etiology.

Both lupus vulgaris and multifocal bone tuberculosis are seen in patients with good immunity. Response to therapy is excellent and prognosis is good as seen in our case.

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