Case Report

Cutaneous Tuberculosis (Scrofuloderma) in a Five Year-Old Boy: Case Report

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ABSTRACT

Cutaneous tuberculosis (CTB) is a rare form of extra-pulmonary TB in our region. The incidence of CTB seems to be increasing in some countries. CTB continues to be one of the most elusive and difficult diagnoses to make for dermatologists practicing in developing countries. We report the case of a five-year-old boy with an infected discharging ulcer on his face referred to our hospital in Gorgan, north of Iran. After physical, pathological and radiological examination, the diagnosis of CTB was confirmed. The condition improved after standard antitubercular regimen.

KEY WORDS: CTB, Middle East

INTRODUCTION

Tuberculosis (TB) is still a serious problem in both developing and developed countries[1]. The incidence of TB registered an upward trend even in developed countries with the advent of HIV infection[2] and chemotherapy[3]. Cutaneous TB (CTB) is a rare form of extra pulmonary TB primarily occurring in developing countries[4] and accounts for 1 - 2% of extra-pulmonary cases. It is often confused with various cutaneous disorders both clinically and hist opathologically[1,2,5]. In such a situation, it is crucial to recognize the different clinical features of CTB to prevent missed or delayed diagnoses[5]. The incidence of CTB seems to be increasing in some countries like Tunisia[6]. Lupus vulgaris and TB *verrucosa cutis* remain the most common forms of CTB, and *erythema induratum* of bazin is the most common tuberculid[7,8]. In *Lupus vulgaris* the usual sites of involvement are head and neck[8]. In the whole spectrum of CTB, there are a proportion of patients with disseminating involvement, who are of great epidemiological significance as they require a change in the standard therapeutic regimens recommended for CTB[9,10]. CTB is a rare form of extra-pulmonary TB in our region (Middle East). This form should be more extensively studied because it may be suggestive of visceral forms of TB.

CASE PRESENTATION

A five-year-old boy was referred to our dermatology clinic with a suppurative discharging ulcer in the periauricular region. It had developed over the last eight months before admission as a painful red swelling of periauricular region which then ruptured to form a fistula after three months with suppurative discharge (Fig. 1). The patient had a history of productive cough, anorexia and night sweats since one year. A diagnosis of dermatophytosis with superadded bacterial infection was made, which was unsuccessfully treated with different drugs such as systemic antibiotics (penicillin, cephazolin, erythromycin, cloxacillin, cephalexin) and antifungal drugs (griseofulvin, terbinafin). His vital signs were normal. On physical examination, an ulcerative nodule was seen in the periauricular region with tenderness and induration. Retro-auricular and cervical lymphadenopathy was seen. Smears and cultures were negative for dermatophytosis and the smear was negative for Leishman bodies. Smears of sputum and the lesion were positive for acid-fast bacillus (AFB). Pathological and histological findings of skin biopsy specimen were as follows: ulcerated skin tissue with multiple granuloma formation in the dermis composed of epitheloid and multinucleated giant cells (Langhans type) surrounded by chronic inflammatory cells (lymphocytes and plasma cells) (Fig. 2). A consolidation was seen on chest X-ray, in the upper lobe of the right lung obliterating the right border of the upper mediastinum and hilum of the right lung (silhouette sign). An air-bronchogram was apparent in the lesion (Fig. 3). Based on the above mentioned clues, the diagnosis of CTB was established and the standard regimen was prescribed for a period of six months. Subsequently, improvement was noted on his face (Fig. 4) and in his chest X-ray.

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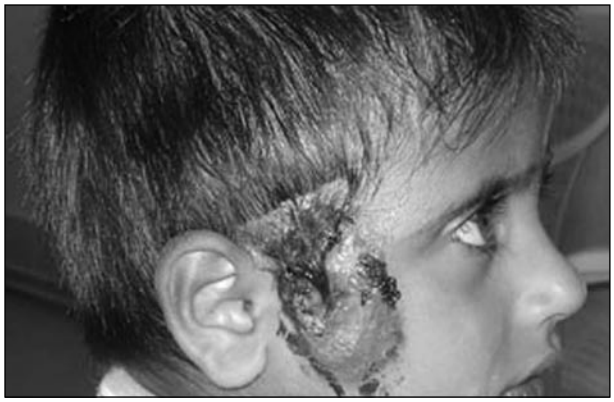

Fig 1: A case of cutaneous tuberculosis with ulcerated nodules in preauricular area with infective discharge

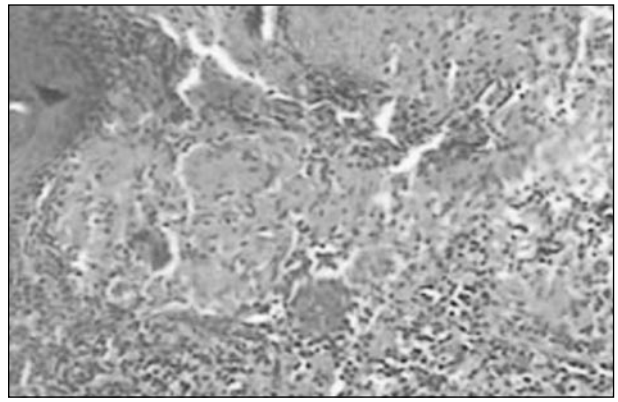

Fig 2: Scrofuloderma (low magnification). There are several tubercles (×100)

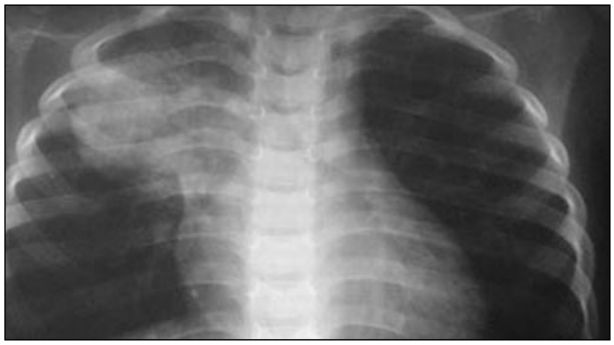

Fig 3: Chest X-ray with consolidation in the right upper lobe with air bronchogram appearance

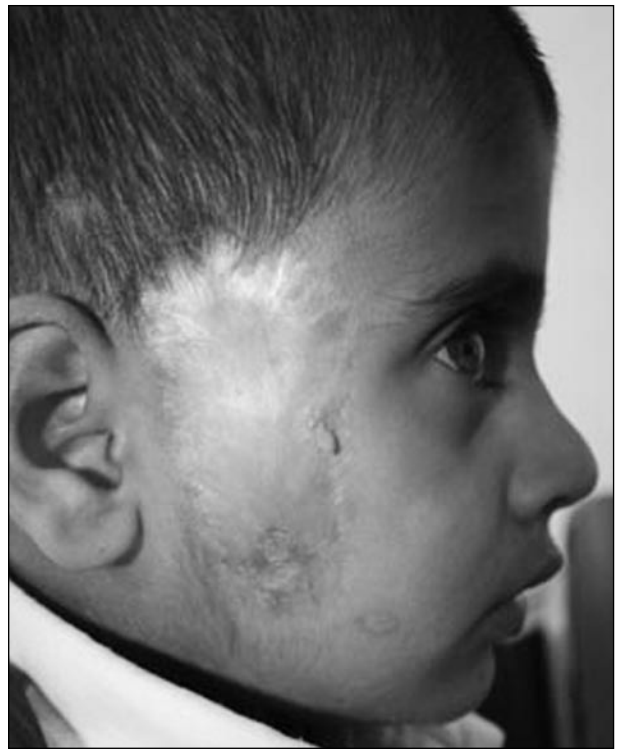

Fig 4: Atrophic scars after antitubercular treatment

DISCUSSION

CTB is a rare infection, with an incidence of 3.5% reported among patients with organ TB[3]. The clinical presentation of CTB may vary depending upon host immunity, infection route and previous exposure[3,11]. Unexpected areas such as the trunk, extremities, periocular and perianal regions might be involved instead of the conventional regions such as the head and neck, especially the nose, the cheek, and the ears[8,11].

Generally CTB is classified to two groups: the first group is CTB with actual invasion of bacillus into the skin and the second group is tubeculoids or hypersensitivity reactions accompanied with primary foci in other sites. The most common form of CTB is different depending on geographical areas. The majority of investigators believe that *lupus vulgaris* is the most common clinical form of CTB[12].

The characteristic lesion is a plaque, composed of nodules of an 'apple-jelly' colour, which extend irregularly in some areas, and when they ulcerate, they heal by scarring causing considerable tissue destruction over many years[13]. Although scrofuloderma is one of the most common forms of CTB as reported in some series[14], most cases develop from an infected lymph node, and less commonly as a result of an infected bone, joint[15] and infection of the lacrimal system[16].

This case highlights scrofuloderma arising from underlying lymph node involvement. Other diagnoses that need to be considered include carbuncle, deep mycotic infections, leishmaniasis, atypical mycobacteriosis, tertiary syphilis and cutaneous malignancies. Although a positive culture remains the gold standard for diagnosis of TB, PCR may actually have a higher sensitivity than culture. A further advantage for PCR is the possibility for early diagnosis and institution of treatment in these patients[17]. Our patient had a suppurative discharging ulcer in the periauricular region eight months before admission and a history of productive cough, anorexia and night sweats since one year. Smears of sputum and the lesion were positive for AFB. Pathological and histological findings of skin biopsy were as follows: ulcerated

skin tissue with multiple granuloma formation in the dermis composed of epitheloid and multinucleated giant cells (Langhans type) surrounded by chronic inflammatory cells (lymphocytes and plasma cells) (Fig. 2). A consolidation was seen in the chest X-ray, in the upper lobe of the right lung which obliterated the right border of upper mediastinum and hilum of right lung (silhouette sign). An air-bronchogram was apparent in the lesion (Fig. 3). Based on the above mentioned clues, the diagnosis of CTB was established and the standard regimen was prescribed for a period of six months. Subsequently, clinical improvement was noted on his face (Fig. 4) and on his chest X-ray. A six-month regimen including four drugs in the initial two months (rifampicin, isoniazid, pyrazinamide plus ethambutol or streptomycin), followed by rifampicin and isoniazid in the four-month continuation phase is highly effective in patients with fully sensitive organisms. This standard six-month regimen is now recommended by the British and American Thoracic Societies. For osteoarticular TB, the American Thoracic Society recommends six-to-nine-month duration of therapy for patients with drug sensitive disease[18].

CONCLUSION

It is very important to consider the diagnosis of CTB in chronic lesions, especially when there is a chronic infection. Unusual cases of CTB are not uncommon and a high index of clinical suspicion is one of the most important factors in making a correct diagnosis.

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