International Journal of Current Advanced Research
ISSN: O: 2319-6475, ISSN: P: 2319-6505, Impact Factor: 6.614
Available Online at www.journalijcar.org
Volume 7; Issue 10(C); October 2018; Page No. 15887-15889
DOI: http://dx.doi.org/10.24327/ijcar.2018.15889.2915

Case Report

CUTANEOUS TUBERCULOSIS OF THE PINNA: AN UNUSUAL LOCATION

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ARTICLE INFO

Article History:

Received 15th July, 2018
Received in revised form 7th August, 2018
Accepted 13th September, 2018
Published online 28th October, 2018

Key words:

tuberculosis, Cutaneous, pinna.

ABSTRACT

Cutaneous tuberculosis (CT) is a relatively uncommon, presenting 1-1.5% of all extrapulmonary tuberculosis manifestations. The pinna location is exceptional. We reported the case of an immunocompetent, vaccinated 59 year-old man, who presented a chronic skin lesion of the left ear evolving for 2 years and wrongly treated with topical and oral antibiotics. In histopathological evaluation of the incisional biopsy from the lesion, she was found to have tuberculosis. The patient responded to 4-drug anti-tubercular treatment. CT should be mentioned as a differential diagnosis in all chronic skin lesions of the external ear especially in endemic countries.

INTRODUCTION

CT is less common than other more severe forms of tuberculosis, such as pulmonary tuberculosis, but it is still encountered regularly in african dermatologic practice and is estimated to present 2% of dermatology outpatients in Morroco [1]. The pinna location is exceptional [2]. The precise diagnosis is often overlooked, due to clinical presentations as those of cutaneous diseases with different etiology and the relative paucity of the pathogens in the lesions [3]. As a result, tuberculosis is not usually considered in the differential diagnosis of cutaneous lesions involving pinna and may present the clinician with a diagnostic dilemma. The purpose of this work, was to highlight and alert the clinicians of an extremely unusual presentation of Tuberculous gum of the pinna as a primary focus of tuberculosis in an immunocompetent adult.

CASE REPORT

A 59 years-old man, vaccinated, with no medical history of personal or family tuberculosis, presented a swelling of the left pinna for the past 2 years with recurrent crusting, associated with mild pruritus and blood stained discharge. Clinical examination revealed a subcutaneous nodule involving the posterior surface of the left pinea reached 1,5 cm in its largest diameter, associated with a irregular ulceration fistulized in the anterior surface and showing purplish margins with purulent background (Fig 1.) The external auditory canal and tympanic membrane were found to be normal.

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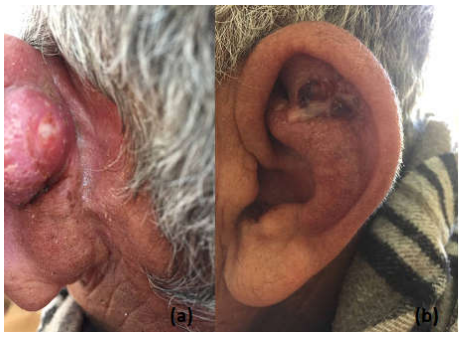

Figure 1 (a) subcutaneous nodule involving the posterior surface of the left pinea, associated with (b) a irregular ulceration fistulized on the anterior surface

There was no lymphadenopathy. The rest of physical and general examination was unremarkable. The patient had been treated elsewhere with topical and oral antibiotics on several occasions, which gave only symptomatic relief for a few weeks. Skin biopsy showed epithelioid and giant cell granuloma with many foci of caseous necrosis (Fig 2.)

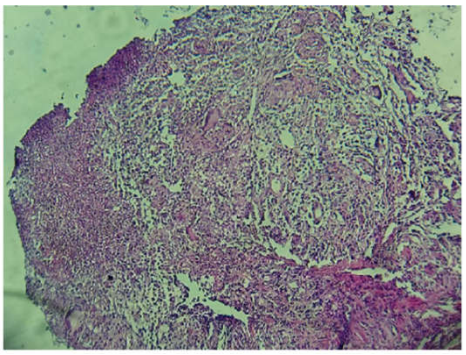

Figure 2 Histology in Patient showing a polymorphous dense inflammatory infiltrate of the dermis, with a well-formed epithelioid cell granuloma, rimmed by lymphocytes. (Hematoxylin and eosin stain)

Table 1 Distribution of different forms of cutaneous tuberculosis

Authors	Marcoval	Yates	Varshney	Bhutto	Chong	Abdelmalek	Zouhair
Country	Spain	England	India	Pakistan	Hong Kong	Tunisia	Morocco
Number of cases	36	47	137	153	176	137	156
Lupus vulgaris	61%	18.2%		31%	42.6%	6,3%	11%
scrofuloderma	11%	55.3%	36.5%	35.3%	4%	65%	73%
Tuberculous gumma		8.5%					
Tuberculosis verrucosa cutis			12.9%	19.5%	4.5%		7%
miliary tuberculosis	11%	4.4%					
Orificial tuberculosis		2.2%		3.92%			1%
Erythema Induratum of Bazin		10.5%	1.5%				
tuberculids		2.2%	3.8%		4%		7%
Lichen scrofulosorum				1.7%			
Erythema nodosum		6.5%					

Acid-fast stains for mycobacteria and fungal stains were negative. The tuberculin skin test (TST) was positive at 20mm. The HIV serology was negative. The chest X-ray and ENT examination showed no other tuberculous location. Given the biopsy report and strongly positive tuberculin skin test results, a diagnosis of tuberculosis gum was made. A tissue sample was sent for mycobacterial culture that was later traced and showed growth of Mycobacterium tuberculosis and the patient. The patient was given a six-month anti-tuberculous treatment: 2RHZE/4RH (Rifampicin (450mg), Isoniazid (300mg), Pyrazinamide (1500mg) and Ethambutol (1200mg) for 2 months, followed by Rifampicin (450mg) and Isoniazid (300mg) for 4 months), with complete cure and healing of the lesion.

DISCUSSION

In Morocco, tuberculosis (TB) remains endemic with 30 000 new cases annually reported. Cutaneous tuberculosis is a rare form of extrapulmonary tuberculosis, ranks fifth in frequency in our country after pleural, lymph node, urogenital, and intestinal tuberculosis and represents 2% of all the dermatologic seen diseases [1]. It accounts for <0.5% of all skin diseases in Europe [2], and between 0.1% and 0.5% of skin conditions in India [4] . It is most commonly seen in young adults without any predominance of sex [1].

Cutaneous tuberculosis exhibits diverse clinical manifestations. The clinical diversity depends on the route of acquisition of infection and on the patient's immune status [3]. In relation to host immunity, cutaneous tuberculosis represents a continuous spectrum with lupus vulgaris (high degree of immunity) at one extreme, scrofuloderma and tuberculous gumma (low degree of immunity) at the other, and tuberculosis verrucosa cutis occupying an intermediate position [1].

Gumma and scrofuloderma are the most frequent forms in Moroccan series [5]. Scrofuloderma results from contiguous involvement of the skin from underlying tuberculosis in deeper structures such as lymph nodes, bone, or epididymis. The lesion is often unique with an average size of 3 to 5cm. Tuberculous gum lesions present as cold, metastatic abscesses. They are the result of Dissemination of the Koch bacillus in subcutaneous tissue occurs during a bacillemia, from a distant tuberculous focus.

The gums can be part of an array of miliary tuberculosis. Sometimes, the initial focus is not identified and we speak of a silent bacillemia. Reactivation of quiescent KB may occur after local trauma, non-specific inflammation, or when local or general cell-mediated immunity is affected [1]. The gums are often multiple asymmetric, of variable size (3 to 10 cm in major axis), located in the limbs, the chest wall, the buttocks, the forehead and the penis. Auricular location such our case is exceptional and only a few cases have been reported in the literature [6]. The gums present as single or multiple subcutaneous nodules which grow, fluctuate and may break down the overlying skin to form draining sinuses unless incised and drained surgically.They are often multiple in the malnourished or immunodeficient but usually single in healthy immunocompetent adults.They are a bad prognostic sign in the former group, but in the latter, may drain chronically for months to years and ultimately resolve without antibacterial treatment [6].

The optimal diagnosis of cutaneous tuberculosis relies on the demonstration of acid-fast bacilli in skin lesions, although culture provides only a small diagnostic yield in patients with cutaneous tuberculosis[7]. The diagnosis is typically made presumptively based on the correlation of various criteria including the presence of active tuberculosis elsewhere, histopathologic findings, clinical history and physical signs, a positive purified protein derivative (PPD) skin test reaction, and a therapeutic response to antituberculous treatment[3]. Automated culture systems such as the Bactec provide rapid and sensitive results but are expensive. Several case reports indicate the usefulness of polymerase chain reaction (PCR) in the diagnosis of scrofuloderma, lupus vulgaris, and tuberculids[7]. Differential diagnosis includes other causes of cold abscess such as syphilitic Gumma, leishmaniasis, and deep fungal infection[8].

Concomitant extracutaneous tuberculosis has been reported in 5% to 21% of patients with cutaneous tuberculosis in moroccan series. This percentage of active extracutaneous disease may be explained by the predominance of scrofuloderma and gumma. The HIV epidemic has strong associations with increasing susceptibility to TB, reactivation of TB and spread. Although our participant was HIV negative, one has to question whether other immunodeficiency states can

account for his presentation and dissemination of Mycobacterium tuberculosis. Interferon γ (IFN-γ) and interleukin 12 (IL-12) pathway defects have been implicated in increasing susceptibility in mycobacterium tuberculosis, an intracellular bacterium that can avoid cell-mediated immunity cannot completely avoid the host response. Once phagocytosed by the macrophage, subsequent cytokine production (IL-2, IL-12 and IL-18) can stimulate production of IFN-γ by CD4T cells and natural killer cells, promoting IFN-γ receptor binding to its macrophage receptor. This leads to enhanced antigen processing through tumour necrosis factor α and the production of toxic intermediates which ultimately destroy Mycobacterium. 11 Mutations of IFN-γ receptors and IL-12 receptors or defects in IFN-γ/IL-12 pathways (as depicted in knock-out models of mice) have been identified which results in increased susceptibility to infection with MTB. This may be due to failure of protective immunity after vaccination with BCG or the reduction in IFN-γ pathways allowing development of active disease.10

Because most cases of TB of the skin are related to tuberculous disease of other organs and the bacillary load in the skin is usually less than elsewhere, treatment regimens, such as used to treat pulmonary TB, should be sufficient. In Morocco the current national first-line drug regimen for pulmonary and extrapulmonary tuberculosis consists of Isoniazid, Rifampin, and Pyrazinamide administered for the first two months, followed by Isoniazid plus Rifampin given for an additional four month[1].

CONCLUSION

This report seeks to illustrate the importance of maintaining a high index of suspicion for cutaneous TB when dealing with any longstanding inflammatory dermatosis in an unusual site like pinea especially in endemic countries even in the absence of pulmonary symptoms.

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How to cite this article:

Hicham Attifi *et al* (2018) 'Cutaneous Tuberculosis of The Pinna: An Unusual Location', *International Journal of Current Advanced Research,* 07(10), pp. 15887-15889. DOI: http://dx.doi.org/10.24327/ijcar.2018.15889.2915

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