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CLINICAL STUDY

TUBERCULOSIS OF THE PAROTID GLAND IN CHILDREN A REPORT OF 4 CASES

Dr Rajae Borki[a], MD; Dr Khalid Bouti[b], MD; Dr Jawad Lahma[a], MD; Dr Noureddine Bouadel[a], MD; Dr Ilham Rkain[a], MD; Pr Sophia Nitassi[a], MD; Pr Ali El Ayoubi[a], MD; Pr Razika Bencheikh[a], MD; Pr Anass Benbouzid[a], MD; Pr Leila Essakalli[a],MD.

[a] Department of Otolaryngology, Head and Neck Surgery, Specialties Hospital, Rabat, Morocco.

[b] Center of Tuberculosis and Lung Diseases, Tétouan, Morocco.

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ABSTRACT

Tuberculosis is a chronic granulomatous infection caused by Mycobacterium tuberculosis or bovis that can affect all organs. However being located in the salivary glands is rare, affecting mainly adults between 20 and 50 years, although a few cases were described in children. We reported a series of 4 children with parotid TB diagnosed and treated at the ENT department of the hospital of specialties of Rabat.

The average age was 9.25 years and sex ratio M/F was 1. All children were admitted for parotid swelling evolving over an average period of 6 months which fistulized afterwards, a child had also facial paralysis. Histological analysis of the fine-needle aspiration or the sample taken from the fistula confirmed the diagnosis of tuberculosis with the presence of giant cell granuloma with caseous necrosis. All children received anti-bacillary treatment during 6 months, and showed good evolution.

Although being rare, the parotid TB in children remains a condition to be considered at the occurrence of any chronic parotid swelling, especially in endemic countries.

KEY WORDS: Parotid gland – children – tuberculosis.

Corresponding author:

Dr Rajae Borki, Department of Otolaryngology, Head and Neck Surgery, Specialties Hospital, Rabat, Morocco.
E-mail: b.rajae@hotmail.com.

INTRODUCTION

The location of parotid TB is exceptional, even in an endemic country such as Morocco, especially in children. It could manifest under different clinical pictures. No means of imaging could confirm the diagnosis; however, only the discovery of giant cell granuloma with caseous necrosis in the sample taken from the fistula or the demonstration of Koch's bacillus after fine-needle aspiration could confirm the diagnosis, thus avoiding a devastating surgery.

Recalling the disparity in clinical images and the different diagnostic methods, we report 4 cases of primary parotid TB in children.

CASES

Case 1

A 13 year old Moroccan child was admitted for an isolated right parotid mass evolving for about 3 months. The mass was soft, mobile, painless and measuring about 3 cm long axis.

Cervical ultrasound showed a fluid image of the lower pole of the right parotid gland. Magnetic resonance imaging (MRI) showed a posterior inferior lesion process of the right parotid, of hypointense fluid signal in TI, hyperintense in T2, delimited by a hull, containing a few partitions enhanced after gadolinium injection (Fig1). The evolution was marked by spontaneous fistulization of the mass in the cervical region (Fig 2). Histopathological study of a sample taken through the fistula opening revealed an epithelioid giant cell granuloma with caseous necrosis. The culturing of the puncture liquid on Lowenstein-Jensen site showed an acid-fast bacillus, allowing us to confirm the diagnosis of tuberculosis of the parotid gland. The mycobacterium type in question was Mycobacterium bovis.

The child received medical treatment according to the Moroccan protocol, based on 4 anti-TB adapted to his weight for a period of six months, and showed a good therapeutic tolerance. Evolution was favorable within a follow-up of 33 months after the end of treatment. The child had no signs of local recurrence or any other tuberculosis location.

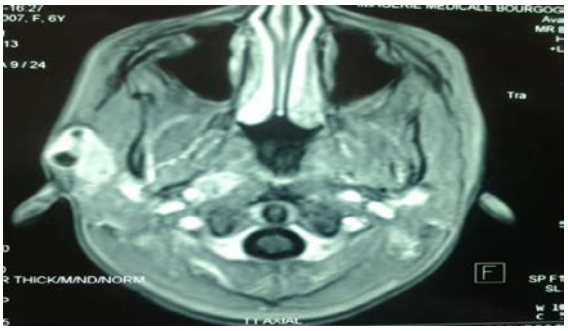

Figure 1: MRI image of right parotid swelling.

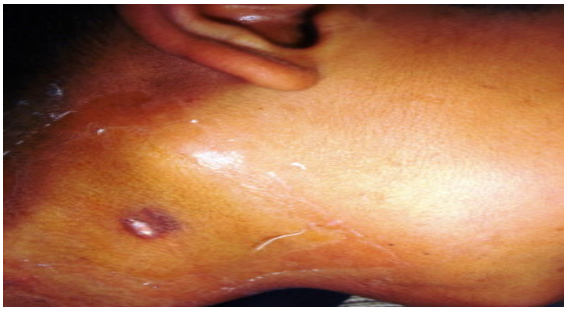

Figure 2: Image of a little girl with right protid swelling fistulized in the cervical region.

Case 2

A 7 year old girl, with no significant medical history, was admitted for a left parotid mass that was evolving for about 1 month, with no other associated clinical signs.

The child was in good condition and had a swelling of the left parotid area (Fig 3), firm in some places, measuring about 12 cm long axis, fixed and painful with extended inflammatory signs in the surroundings. Furthermore, the child had an internal canthal ipsilateral, ulcerated and oozing lesion.

Head and neck CT scan showed a significant enlarged left parotid which had a large mass enhancing heterogeneously and highlighted several cyst formations suggesting the diagnosis of superinfected cystic hygroma (Fig4).

After an ineffective antibiotic therapy, the mass was spontaneously fistulized on the postauricular level, after the pus stopped. Histopathological study of samples taken after curettage biopsy revealed an epithelioid giant cell granuloma with caseous necrosis.

The child received medical treatment adapted to her weight, based on 4 anti-TB according to the Moroccan protocol, for a period of six months. The child showed a good tolerance and the evolution was favorable with no recurrence within a follow-up of 26 months after the end of treatment.

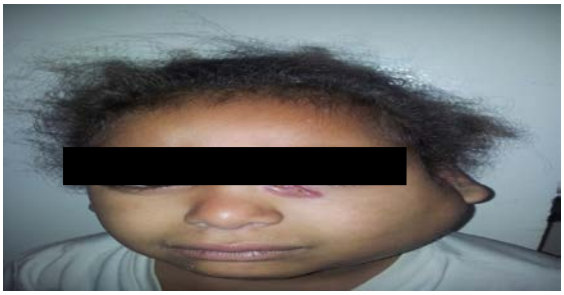

Figure 3: Image of a girl with left parotid swelling and canthal ipsilateral lesion.

Figure 4: Axial scanography in parenchymal window showed left parotid swelling with areas of collection.

Case 3

A 6 year old Moroccan girl had a swelling of the right parotid area gradually increasing in size during 5 months. Physical examination revealed a mobile lobed mass of the right parotid area. There were no signs of inflammation of the skin around the area or facial paralysis. MRI showed the presence of a right parotid nodular formation developed mainly on the outer lobe of the gland, in hyposignal T1 (Figure 5) and in hypersignal T2, enhanced after heterogeneously contrast injection.

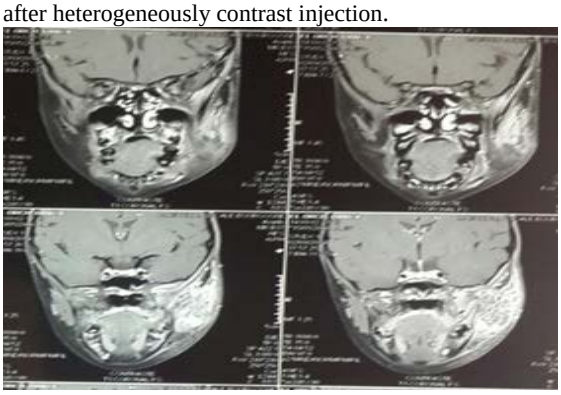

Figure 5: MRI image showing left parotid swelling.

Histological analysis of the fine-needle aspiration showed the presence of numerous foamy histiocytes and a few epithelioid cells of pace and the bottom contained an eosinophilic necrotic material of cracked appearance. The culturing of this sample showed the presence of Mycobacterium Bovis. The patient showed good tolerance and evolved in a period of six months of using 4 antibacillaries recommended by the national protocol and adapted to her weight (Figure 6). After 22 months of monitoring, the patient remained stable and asymptomatic.

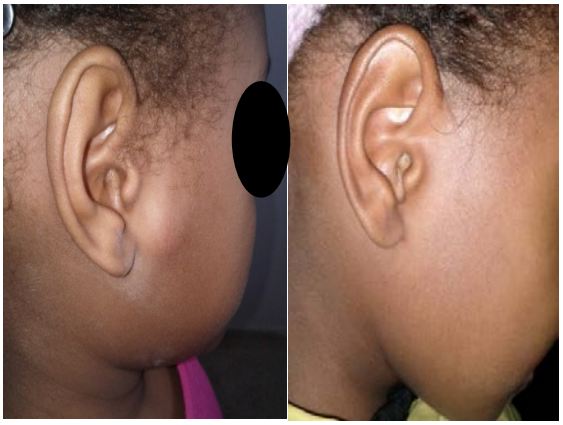

Figure 6 : Image of a patient with right parotid swelling evolved under treatment.

Case 4

An 11 year old Moroccan boy was admitted for the occurrence of a left parotid mass over a period of 4 months, which got complicated 3 days before his consultation with a gradually worsening total peripheral ipsilateral facial paralysis (Figure 7), all in a context of preserving general health with low-grade fever at night.

MRI revealed a left parotid lesion process, hypointense fluid signal in TI, hyperintense in T2, delimited by a hull, enhanced after gadolinium injection.

A fine-needle aspiration confirmed the diagnosis by direct examination; also a treatment involving antibacillaries for a period of six months, respecting the national system, and corticosteroids for a period of 7 days was indicated, with a total regression of facial paralysis and disappearance of parotid mass. After 40 months of monitoring, the patient remained stable.

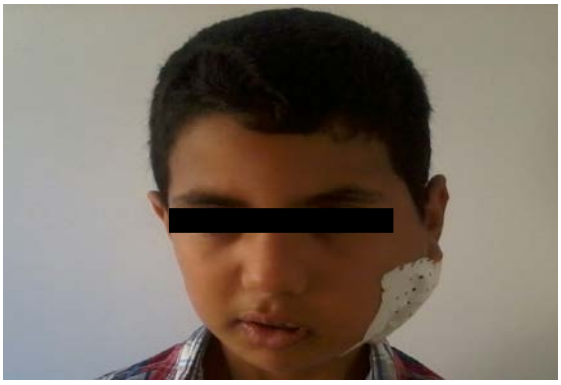

Figure 7: Left parotid swelling with ipsilateral facial paralysis.

Case	Sex	Age	Medical history	Duration	Clinical information
1	Male	13	None	3 months	Chronic parotid swelling fistulized to the skin
2	Female	7	None	1 month	Chronic parotid swelling fistulized to the skin
3	Female	6	None	5 months	Chronic multilobed parotid swelling with no inflammatory signs.
4	Male	11	None	4 months	Parotid swelling with facial paralysis

Table I : Clinical information on reported cases.

Case	Tuberculin skin test (TST)	Chest X-rays	Imaging	Diagnostic confirmation
1	15	Normal	MRI	Fistula sample
2	13	Normal	TDM	Fistula sample
3	12	Normal	MRI	Fine-needle aspiration
4	16	Normal	MRI	Fine-needle aspiration

Table II : Diagnostic analyses of reported cases.

DISCUSSION

Although being rare, the parotid TB remains an infection to be considered at the occurrence of any chronic parotid swelling even in children. The para-clinical and laboratory images are not specific, in endemic countries, it is necessary to think systematically and also to target explorations.

The first case of parotid tuberculosis was described by von Stubenrauch in 1894 (1). The majority of cases reported in the literature were in Africa or India.

Parotid TB can affect all ages, especially young adults (2). According to a literature review reported by Lee and Liu, the average age is 38 years (3).Tthe special feature about our series is that it contains only children.

The location of TB in the parotid gland is often secondary and exceptionally primitive (2-4). None of our patients reported early tuberculosis. There are two possible forms: focal form and hematogenous dissemination form (5).

Clinically, parotid TB can have polymorphous and nonspecific aspects. It is most often a progressive unilateral parotid swelling leading to a pseudo tumor syndrome as was the case for all our patients. General symptoms are rarely present and the presence of a fistula is highly suggestive of an inflammatory pathology (6). The presence of a facial paralysis suggestive of malignant parotid tumor can occur in painful and invasive forms (4, 7).

No radiological examination showed specific signs of tuberculosis. Fine-needle aspiration has no value only if it was positive, but there is a risk of facial paralysis and fistulization (3). In the parotid lesions, fine-needle aspiration cytology had a sensitivity of 81-100% and specificity of 94-100% (8). Only the histopathological study of the surgical sample from the parotidectomy can confirm the diagnosis and eliminate neoplastic association (2).

The treatment was medical and surgical for a long time, involving a conservative parotidectomy with antibacillaries. However, due to the risks of surgery and the effectiveness of medical treatment alone, it is recommended to prescribe antibacillaries for a period of six months, allowing the sterilization of the tuberculous area and the rapid disappearance of the parotid tumor syndrome. This treatment, as stated by the Moroccan protocol on the treatment of extrapulmonary tuberculosis, was carried out in two phases: during the first phase, four drugs (ethambutol, isoniazid, rifampicin and pyrazinamide) were used for two months. During the

second phase, the patient received isoniazid and rifampicin for four months (9).

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Declared none.

COMPETING INTERESTS
The authors declare no competing interests.

PATIENT CONSENT
Written informed consent was obtained from patients for publication of this study.

AUTHORS' CONTRIBUTIONS
The participation of each author corresponds to the criteria of authorship and contributorship emphasized in the Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly work in Medical Journals of the International Committee of Medical Journal Editors. Indeed, all the authors have actively participated in the redaction, the revision of the manuscript and provided approval for this final revised version.

REFERENCES:

[1] Kontopoulou T, Fanourgiakis P, Samarkos M, Mintzias D, Peppas C, Rontogianni D, et al. Tuberculosis of the parotid gland: case report and literature review. Medecine et maladies infectieuses. 2004;34(10):488-90.
[2] Franzen A, Franzen CK, Koegel K. [Tuberculosis of the parotid gland: a rare differential diagnosis of parotid tumor]. Laryngo-rhino- otologie. 1997;76(5):308-11.
[3] Lee IK, Liu JW. Tuberculous parotitis: case report and literature review. The Annals of otology, rhinology, and laryngology. 2005;114(7):547-51.
[4] Touiheme N, Kettani M, Messary A. [Primary tuberculosis of the parotid gland: report of two cases]. The Pan African medical journal. 2014;18:237.
[5] Vyas S, Kaur N, Yadav TD, Gupta N, Khandelwal N. Tuberculosis of parotid gland masquerading parotid neoplasm. National journal of maxillofacial surgery. 2012;3(2):199-201.
[6] Benhammou A, El Ayoubi A, Benbouzid M-A, Boulaich M, Essakali L, Kzadri M. Tuberculose primaire de la glande parotide. Archives de pédiatrie. 2007;14(10):1206-9.
[7] Suoglu Y, Erdamar B, Colhan I, Katircioglu OS, Cevikbas U. Tuberculosis of the parotid gland. The Journal of laryngology and otology. 1998;112(6):588-91.
[8] Iseri M, Aydiner O, Celik L, Peker O. Tuberculosis of the parotid gland. The Journal of laryngology and otology. 2005;119(4):311-3.
[9] Suleiman AM. Tuberculous parotitis: report of 3 cases. The British journal of oral & maxillofacial surgery. 2001;39(4):320-3.