CASE STUDY

Actinomycosis of the Paranasal Sinuses☆

Actinomicosis de senos paranasales

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Received 12 November 2011; accepted 19 February 2012

Introduction

Actinomycosis is a chronic suppurating granulomatous disorder specific to soft tissue. It is produced by Actinomyces israelii, gram positive anaerobic bacteria that are very difficult to culture, and a commensal saprophyte of the oral cavity (tonsillar crypts, saliva and gingival dental sulci) and the gastro-intestinal tract; it becomes a pathogen in the face of erosions of the oropharyngeal mucosa arising from maxillofacial trauma, dental caries, gingival micro-trauma and tooth extractions.1,2

It presents various clinical-anatomical forms: bone-type cervicofacial (50%), generally located at the submandibular or parotid level (in the sinuses is very uncommon); and others, abdominal-pelvic (23%) and thoracopulmonary (17%).2

It is an uncommon pathology these days. In the last 25 years, it has decreased considerably in incidence, which is attributed to better dental hygiene, to water fluoridation and, above all, to generalised use of antibiotics.

It is not usually suspected initially. In fact, the majority of the cases in the literature were diagnosed after surgical resection, probably due to the low index of suspicion and the difficulties involved in microbiological diagnosis.

Clinical Case

This was a 25-year-old female patient, without toxic habits, having chronic allergic rhinosinusitis. She presented with discomfort in the left cheek, which had lasted for 8 months. She reported that part of a dental prosthesis of the upper left first premolar was extracted when she was 22 years old.

Upon examination, several dental pieces were missing, above all in the upper left dental arch, while the rest was normal. An X-ray and CAT scan of the paranasal sinuses were taken (Fig. 1A and B), with a metallic foreign body in the left maxillary sinus being noticeable.

A left Caldwell-Luc procedure was performed, showing hyperplasia of the sinus mucosa with a metallic foreign body of 0.5 cm in diameter surrounded by a granuloma. That sinus was washed with an aqueous solution of 1% gentian violet and a specimen sent Pathology, which reported Actinomyces infection. Evolution was favourable with nasal washes and oral antibiotic (amoxicillin/clavulanic acid, 875 mg/8 h) and corticosteroid (deflazacort, 60 mg/24 h in progressive doses) treatment for 2 weeks followed by 3 months of treatment with amoxicillin/clavulanic acid, 500 mg/8 h. At 2 years, she is asymptomatic.

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Actinomycosis of the paranasal sinuses

Figure 1  (A and B) Water’s view X-ray and CAT scan of the paranasal sinuses: it can be seen that there something like a foreign body in the left maxillary sinus.

Discussion

Actinomycosis of the paranasal sinuses is very infrequent and affects preferentially young adult males. Clinically, the symptoms are chronic, non-specific and confusing, and can simulate a tumour.² It appears as submucosal mass that degenerates into granulomas or semi-abscesses. Initially, it is relatively painless. However, the trismus can become related to the mass effect of the lesion and drain spontaneously later, with a thick, yellowish serous exudate that contains the characteristic "sulphur granules". When the abscesses occur in deep tissues, no fistulous tracts are found. If left untreated, it can affect the periosteum and destroy the bone marrow, allowing the infection to spread rapidly and leading to meningitis and death.⁴,⁵

This type of actinomycosis should be suspected when a mass remains unresponsive to normal antibiotic treatment. In the working diagnosis multiple yellowish granules that simulate clusters of sulphur are characteristic. Findings from CAT scans are non-specific. In 30% of the cases, definitive diagnosis is established by culture, requiring fine needle aspiration or biopsy.⁶

Differential diagnosis consists of neoplasm, bronchial cyst and lymphadenopathy; if it is a late case, it will simulate tuberculosis or sarcoidosis.⁷

Treatment consists of the combination of surgery (incision and drainage) followed by antibiotic therapy with Penicillin G at 40 000 000–6 000 000 U/12 h or 3rd-generation cephalosporins for 2 or 3 weeks, followed by amoxicillin/clavulanic acid for 6 months. Other active drugs would be erythromycin, clindamycin, tetracycline and metronidazole. Prolonging treatment past resolution reduces the possibility of relapse to the minimum.⁸,⁹

Conflict of Interest

The authors declare no conflict of interest.

References