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Antroscleroma

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Abstract

Oedema, hypertrophy, polyposis, atrophy or empyema of the maxillary sinus are common features of rhinoscleroma. However, actual involvement of the antrum by the nasal granuloma is rare and primary scleroma of the antrum is of extreme rarity. Three cases of antroscleroma are presented, one secondary to an extensive rhinoscleroma and two primary. The difference in the physical, biological and microbiological environment in the antrum from that in the nose might explain the rarity of antroscleroma.

Introduction

Antroscleroma is a term proposed, here, to describe scleroma of the maxillary sinus. The term serves to differentiate actual involvement of the sinus by the infective granuloma from changes due to inadequate aeration and drainage caused by the nasal granuloma. While these changes are frequent, antroscleroma is rare. As far as is known, primary antroscleroma has been reported only once (Mossallam and Attia, 1956). Yassin and Safwat (1966) explored the maxillary antra in 25 cases of extensive rhinoscleroma and found only three cases of antroscleroma.

The extreme rarity of primary antroscleroma and the rarity of secondary antroscleroma prompted this record of three cases; two primary and one secondary.

Case reports

Case 1

A primary antroscleroma confined to the maxillary sinus.

A female aged 53 presented with left-sided cheek pain of three months' duration. The nose and the rest of the upper respiratory tract were free. Sinus X-rays showed generalized opacity of the left maxillary sinus with thinned, partially destroyed bony walls (Fig. 1). The antrum was punctured through the inferior meatus and then through the incisive fossa, but saline could not be injected. A neoplasm was suspected and the antrum was explored through the canine fossa. Reddish soft granulations and polypi filled the antrum and bled easily. Histological examination revealed scleroma. Punch biopsy from the nose, on the other hand, showed normal histology.

Case 2

A primary antroscleroma presenting as an antronasal polyp.

A female aged 55 presented with a 6-month history of right-sided nasal obstruction, purulent discharge and epistaxis. Examination revealed a granular reddish polyp in the middle meatus extending backwards to the choana. The lesion bled easily on touch and was bathed in pus, its culture producing *Klebsiella rhinoscleromatis*. CT scan showed a lesion filling the antrum and extending into the nasal cavity (Fig. 2a and b). While microscopy of the antral lesion showed scleroma, that of the inferior turbinate revealed normal mucosa and submucosa.

Cases 3

Antroscleroma secondary to an extensive rhinoscleroma.

A 25-year-old farmer presented with right-sided nasal obstruction. Examination revealed a crusting nodular lesion in the anterior part of the right nasal cavity which proved histologically to be scleroma. After 6 weeks of specific chemotherapy, the patient returned with increasing obstruction and epistaxis. Examination revealed an extensive granular mass filling the nasal cavity and bleeding easily. Sinus X-rays (Fig. 3) showed complete opacity of the expanded antrum with partial destruction of its bony walls. Histological examination of both nasal and antral lesions showed the same pathology-scleroma. In spite of continued specific chemotherapy, the patient developed a subglottic scleroma a few months later.

Discussion

1. Antroscleroma is very rare (Yassin and Safwat, 1966). This



FIG. 1

Case I. Radiograph showing opaque left antrum with thinned bony walls.

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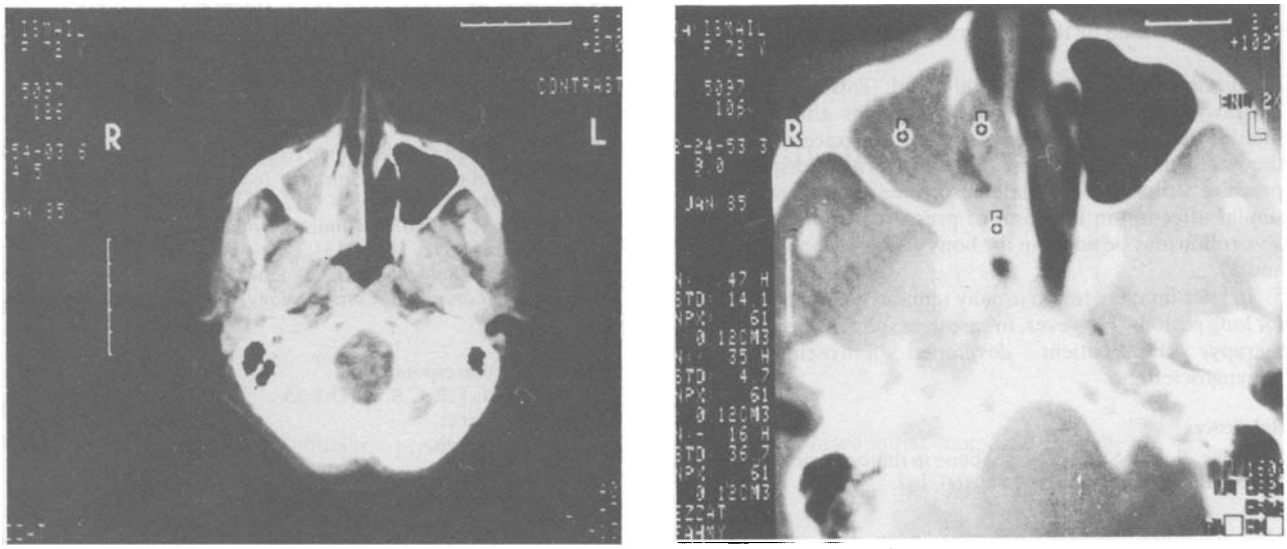


FIG. 2
Case II. Postcontrast CT scan showing scleroma filling the right antrum completely and extending into the nasal cavity.

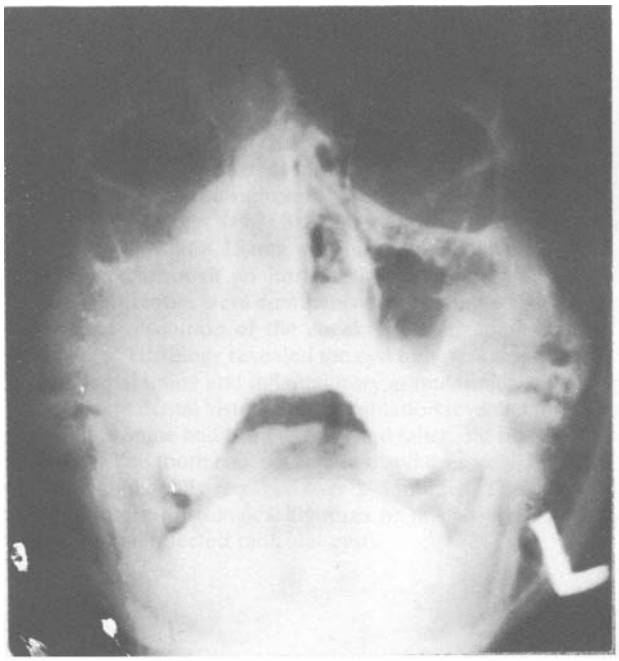


FIG. 3
Case III. Radiograph showing extensive unilateral nasal and antral scleroma. The antrum is expanded with partially destroyed bony walls.

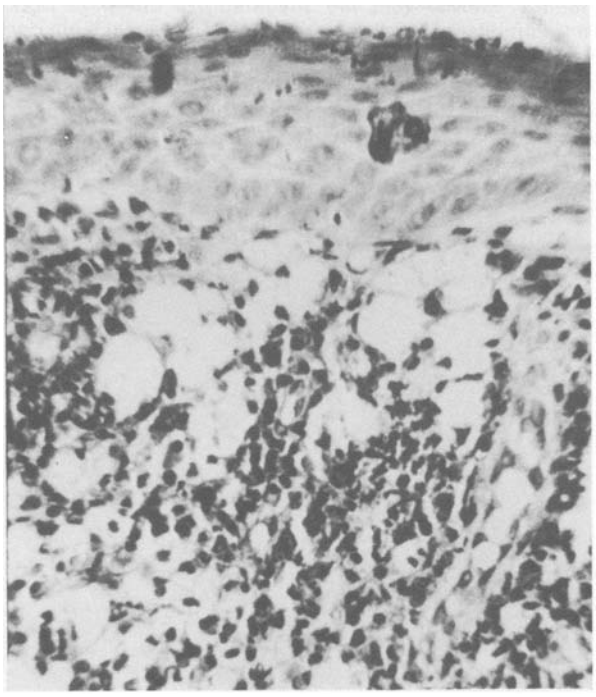


FIG. 4
Photomicrograph of scleroma showing metaplasia of overlying epithelium to stratified squamous epithelium.

is surprising when it is considered that rhinoscleroma is endemic in many countries and that the mucous and submucous lining of the antrum is continous with that of the nose. Probably, the physical, biological and microbiological environments in the antrum, differing from those in the nose, might explain the rarity of antroscleroma.

2. While antroscleroma is rare, changes in the antrum due to rhinoscleroma are frequent. Oedematous, hypertrophic, polypoid or atrophic changes, with superadded infection are common. These changes are caused by the nasal granuloma obstructing the drainage and aeration of the antrum. Moreover, rhinoscleroma causes metaplasia of the epithelium (Fig. 4) destroying its muco-ciliary activity. This interferes with cleansing of the sinuses. Radiological changes in the antrum are, therefore, frequent. Shehata *et al.* (1975) found, in the Alexandria University Hospital series of 342 cases (1959 to 1973), that the maxillary sinus was radiologically affected in 118 cases. Examining this report, Shum (1982) had the impression that "maxillary sinus involvement is most common among the paranasal sinuses, where the overall incidence may be as high as 40 per cent". While cloudiness, opacity, mucosal thickening and polyposis are the usual radiological findings, expansion with absorption or partial destruction of the bony walls is very rare and it suggests actual involvment, i.e. antroscleroma. Massoud and Awwad (1959) noted in their series of 84 cases of scleroma that 34 had radiological affection of the antrum (40 per cent); of these, only one case (1.2 per cent) exhibited expansion of the antrum with depression of its floor.

3. The route of infection in primary antroscleroma is obscure. Infection of the antrum through its ostium seems likely perhaps when the intranasal pressure is raised as in nose blowing. On the other hand, the route of infection in secondary

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antroscleroma may be through the ethmoids which may be directly infiltrated by the nasal granuloma (Yassin and Safwat, 1966).

4. In scleroma, bone may be affected. This was studied by Badrawy (1966) who found that the bones affected are the inferior turbinate, nasal bones, lamina papyracea and floor of the nose, and the affection takes the form of displacement, pressure atrophy or complete absorption. In antroscleroma, a similar affection in the form of pressure atrophy and partial absorption may be noted in the bony walls of the antrum (Fig. 1 and 3).

5. In scleroma, the lesion usually remains confined to the nose for long periods. However, in case 3, in spite of specific chemotherapy, the patient developed antroscleroma and largyngoscleroma.

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