OSTEOMYELITIS OF THE MAXILLA*

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SUMMARY

A case of maxillary osteomyelitis is presented. This condition was traumatic in origin and demonstrates the extent to which the adjacent bones may become involved. The pathology and treatment are reviewed.

Osteomyelitis of the maxilla is a rare condition, the gravity of which was appreciated by Hippocrates as long ago as the 5th century BC.[1] In the pre-antibiotic era patients died of meningitis, brain abscess, cavernous-sinus thrombosis or septicaemia; or they survived with gross deformities and bony sequestra.

MacBeth,[2] in a comprehensive review, classifies the condition as follows:

1. *Traumatic*: following injury or surgery. The primary site of infection may be the antrum, teeth or mouth, or lacrimal sac.[3]

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2. *Rhinogenic*: spontaneous spread of infection from the antrum is rare. Cases have been described by Hirst,[4] MacBeth,[2] and Holden and Durcan.[5] Postoperative rhinogenic cases are more common.

3. *Odontogenic*: at any age dental-root sepsis may progress to osteomyelitis.

The majority of cases reported in the literature have been in infants under 18 months. The infection is considered by most authors to arise from the nursing mother or attendant, the organisms entering through abrasions of the gum. Asherson[6] has suggested that the infection may be blood-borne. Haworth[7] stated that the infection may derive from the antrum, the lacrimal apparatus or the dental germ. MacBeth[2] believes that the unerupted tooth germ is the most common primary focus.

Infection is more likely to occur in the spongy bone of the alveolar arch than in the relatively hard, compact bony walls of the antrum. Wilensky[8] has described the arterial supply, which is derived almost entirely from the

internal maxillary artery, its branches being arranged in anastomosing arcades. Sequestra may therefore be localized, but when the internal maxillary artery is itself thrombosed, the whole maxilla sequestrates.

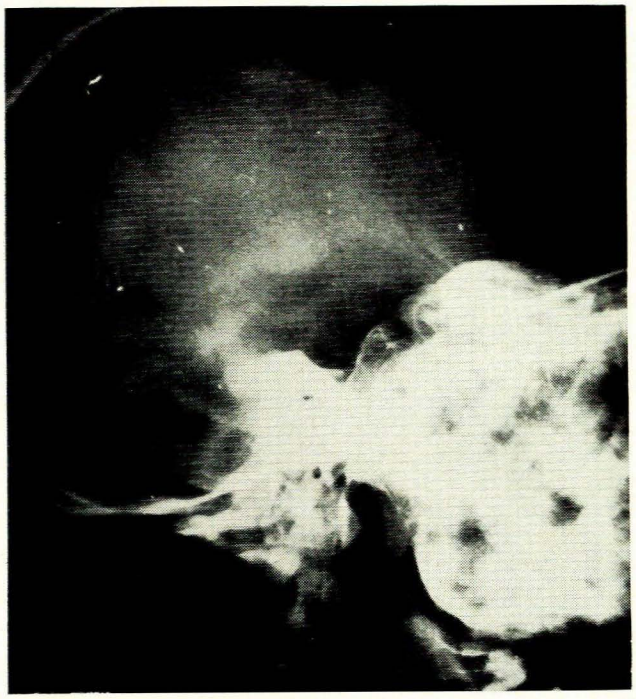

Fig. 1. Lateral view of skull showing extensive osteomyelitis of facial bones.

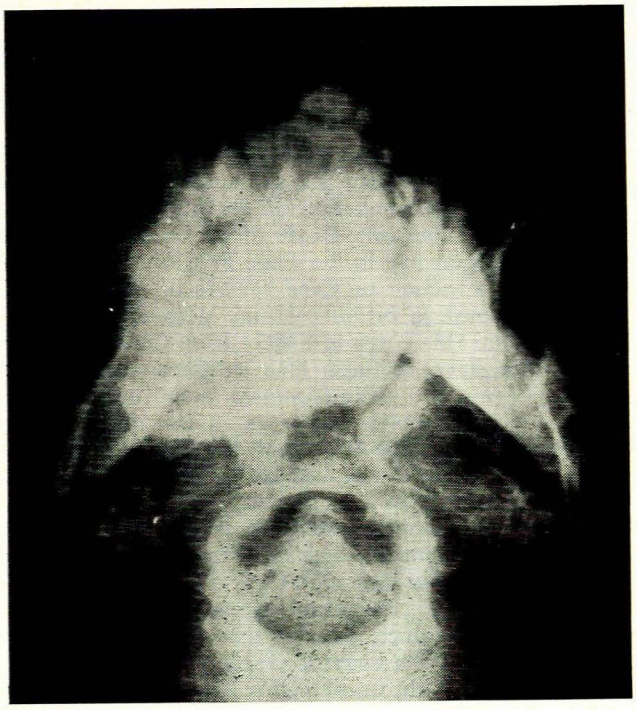

Fig. 2. Basal view of skull in the same patient demonstrating the posterior extent of osteomyelitis.

Conservative treatment with antibiotics for prolonged periods is successful in most cases. Intranasal antrostomy may be required to establish drainage, and sequestra should be removed surgically if they occur. It is unusual nowadays to see the extensive disease that occurs in neglected cases of maxillary osteomyelitis. The following report documents a case which occurred subsequent to multiple facial fractures, and which presented as a gross tumour of the maxilla.

CASE REPORT

A 25-year-old Coloured male was involved in a car accident in which he sustained multiple facial fractures 7 years before his admission to hospital. He complained of a painful left ear and upper jaw. The skin of the face was badly scarred and pus was discharging from a fistula under the left eye. Proptosis and severe lateral displacement of the left eye was present; vision was normal, however. The left maxilla was greatly swollen and distorted, with a mass involving the left zygoma and nasal bones. The hard palate was ulcerated in two areas and pus was draining into the oral cavity. The left nostril was filled with a pink granular mass. The postnasal space was normal.

Blood investigations showed the following results: haemoglobin 13·5 g/100 ml, ESR 46 mm/hr, leucocyte count 9 300/mm^3. The Wassermann reaction was negative. The film appearances were normal. Culture of the pus yielded no growth.

Radiological examination of the sinuses showed a mottled bony overgrowth involving the entire left maxilla, the left ethmoid sinus and nasal cavity, the left zygoma, orbit and nasal bone, and the floor of the left frontal sinus. Posteriorly the mass filled the sphenoid sinus and encroached upon the pituitary fossa and anterior cranial fossa. The chest X-ray was normal.

A conductive hearing loss of 45 db. was present in the left ear, with a 36% loss for speech on that side. The tympanic membrane and mastoid X-rays were normal.

The patient was treated with tetracycline 250 mg *q.i.d.* with daily irrigations of the discharging fistulae. The discharge improved after one month. Several biopsies were taken through the fistula under the left eye, and from the palatal perforations. The histological features were those of chronic osteomyelitis. The biopsies were then repeated, taken this time from deeper areas unrelated to the septic fistulae, through an intranasal antrostomy. The tissue removed was spongy and haemorrhagic, and the histology report read as follows: 'Section through the biopsy taken from the maxillary sinus shows dense hyaline fibrous tissue in which there are irregular foci of calcification and ossification, the bone showing irregular cement lines. A few foci of lymphocytic infiltration are noted. Section of the biopsy from the palate shows similar fibrous tissue with calcification and ossification together with a more extensive infiltrate of plasma cells, lymphocytes and neutrophils. The features are consistent with those found in chronic osteomyelitis.'

Surgical exenteration of the mass was considered too dangerous a procedure, and conservative therapy was continued for 3 months. The pain and discharge ceased after 2 months, and a diminution in the size of the external swelling was noted.

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