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Cervicofacial Actinomycosis in Man

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Introduction

Cervicofacial actinomycosis is not a common disease (11), specially now that penicillin is the drug chosen for its treatment and many cases are not diagnosed particularly in rural areas. We think it may be helpful to publish reports on two cases with advanced jaw destruction.

Case Report

Case 1: Mr. M.A., 42 year-old, mason, was first admitted on January 2, 1973, because of oedema and redness of the left thight, plus polyuria, polydipsia and a sore around the left lower mandible; which had started six months before, following a carious tooth extraction. In his past history there was a recognised diabetes mellitus which started a year ago. His family history was not contributory.

On examination, the upper part of the face was normal, but in the left lower angle of the mandible there were many fistulas with yellow creamy pus exuded from them; besides there was asymmetry and the lower jaw was directed towards the left (lumpy jaw) (Fig. 1, 2). The fistulas were connected to the same side of the sublingual part of the mouth, and a granulomatous pus exuded from it. There were a few tiny,

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painful adenopathies in the left lower angle of the mandible the size of a pea. On the thigh red, tender masses with fluctuation were found, from which abundant pus drained after incision.

Laboratory findings were as follows:

Urine analysis: glucose ++++, keton bodies ++

Fasting blood sugar 297 mg%, blood urea 32 mg%, CBC: 15900 W.B.C. with marked polymorphonucleosis, Hematocrit 46%, Hemoglobin 13.7 mg%; coagulase positive staphylococci were isolated both in direct and culture of thigh abscesses. Actinomyces was isolated from exudate of mandibular sinuses both in direct and in anaerobic culture (Fig. 3).

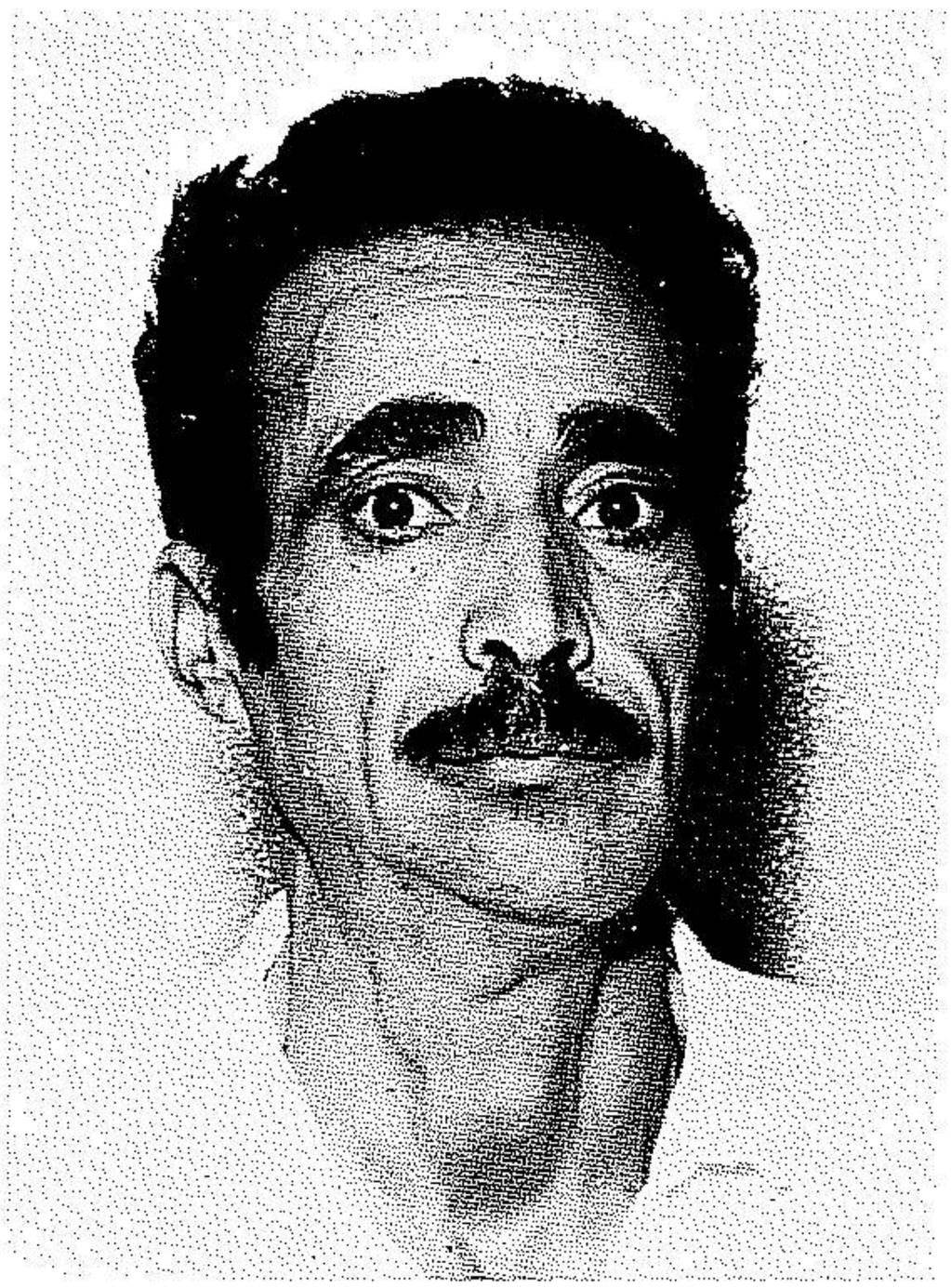

Fig 1

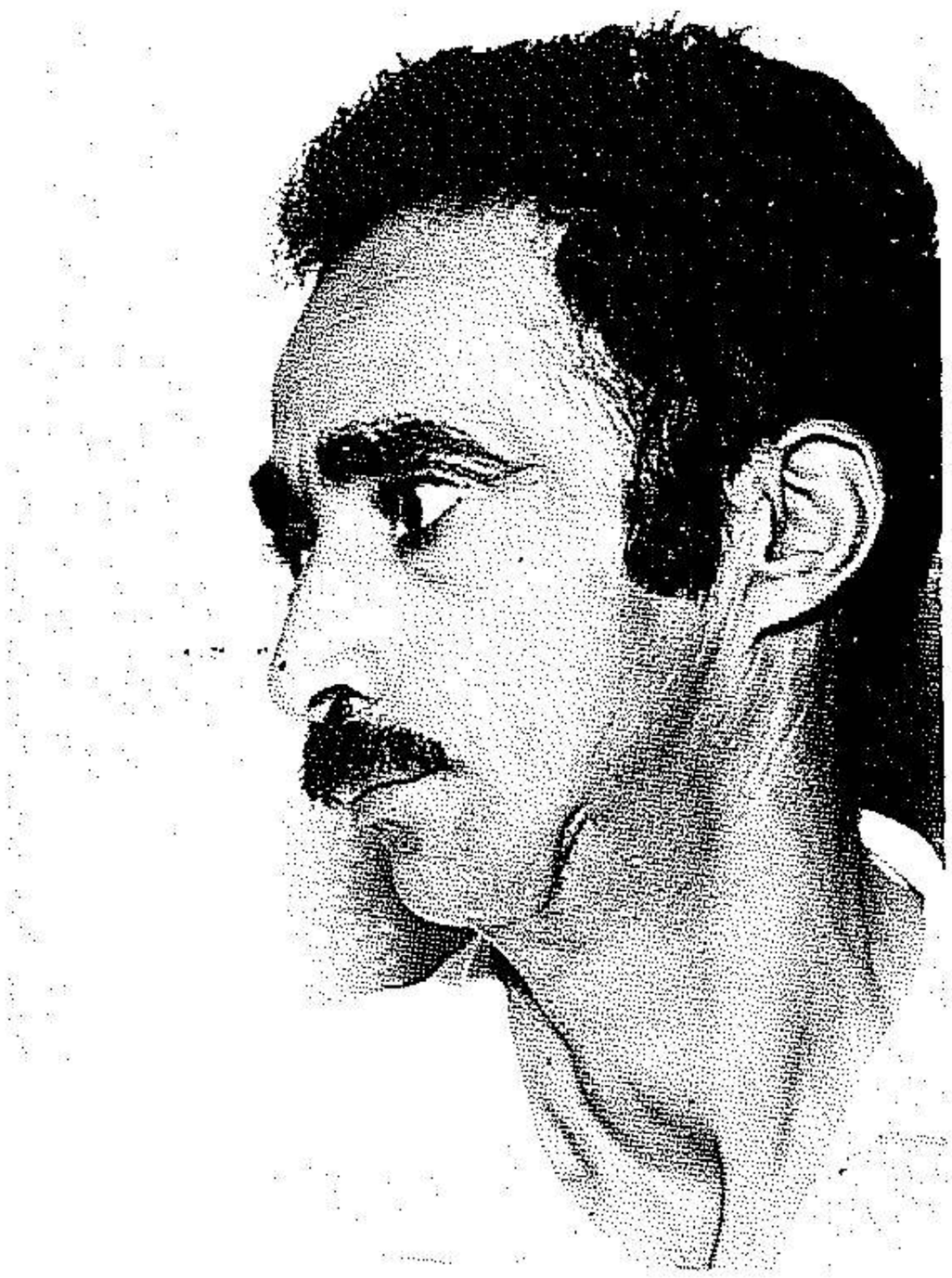

Fig 2

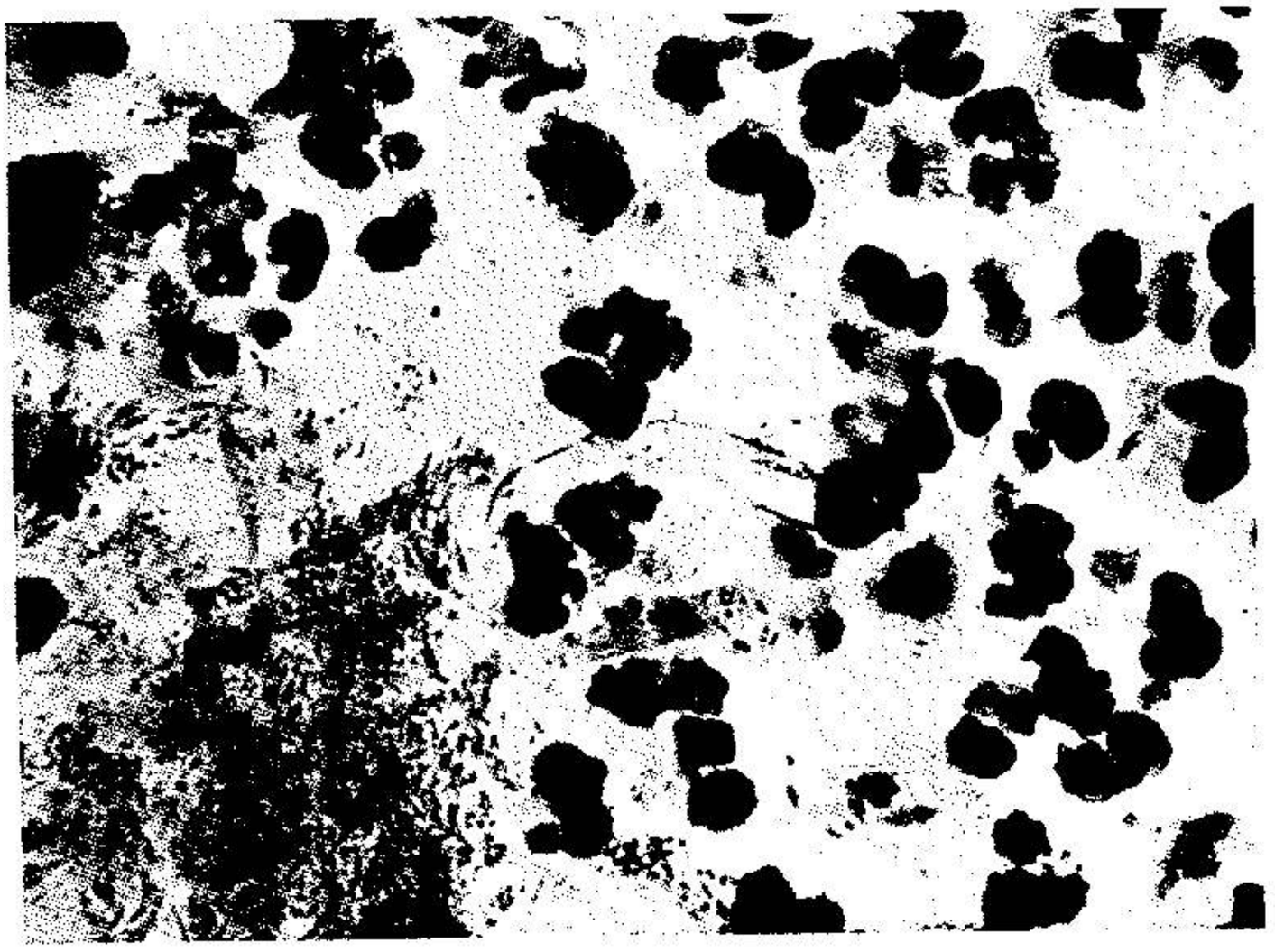

Fig 3

X-ray of the left lower mandible was very interesting and showed destruction of the left angle of the bone tissue without formation of new bone (Figs. 4, 5). X-ray of left femur, heart and lungs did not reval any pathological chenges. Examination of the funds of the eye showed vascular tortuosity.

Treatment: Consisted of insulin therapy, first cristallin followed by N.P.H. insulin plus cristallin penicillin G (20 millions perfusion per day) (7-9-14) and cloxacillin; which continued for a month. The patient did not yield to operation for his fungal focus, but the thigh collection was drained out.

He was discharged with a good general condition, whilst no discharge exuded from the mandibular sinuses.

Case 2: On July 8, 1968, Mr. A.P., 48 year-old referred to the private clinic of Dr. H. Mahdavi because of extraoral swelling and signs of fracture of the left angle of the mandible. His past history revealed a trauma with a fistula on the site of fracture which had exuded pus for the last 12 months. His general condition was normal. X-ray of the mandible revealed a fracture of the left body with extensive bone destruction of the fracture site (Fig. 6). X-ray of the chest was normal.

Laboratory findings: In both direct and anaerobic culture of the sinuses actinomyces were obtained (Fig. 7). Blood urea 34 mg%, fasting blood sugar 102 mg%, CBC: 18400 W.B.C. with 90% polymorphonuclear. Other laboratory tests were within normal limits.

Treatment: Consisted of reduction of the fracture employing arch bars and intermaxillary fixation; besides he was placed on the following regimen:

1. Potassium iodide, three drops three times daily, increasing gradually to 15 drops three times daily.

2. Intravenous aquous crystalline penicillin 10.000 units daily for eight days followed by pencillin v.k. orally 500 mg every six hours for about 4 months and then penicillin benzoate 2.400.000 monthly.

The swelling and discomfort gradually subsided a roentgenogram after six months revealed some resolution of the bone of the mandible.

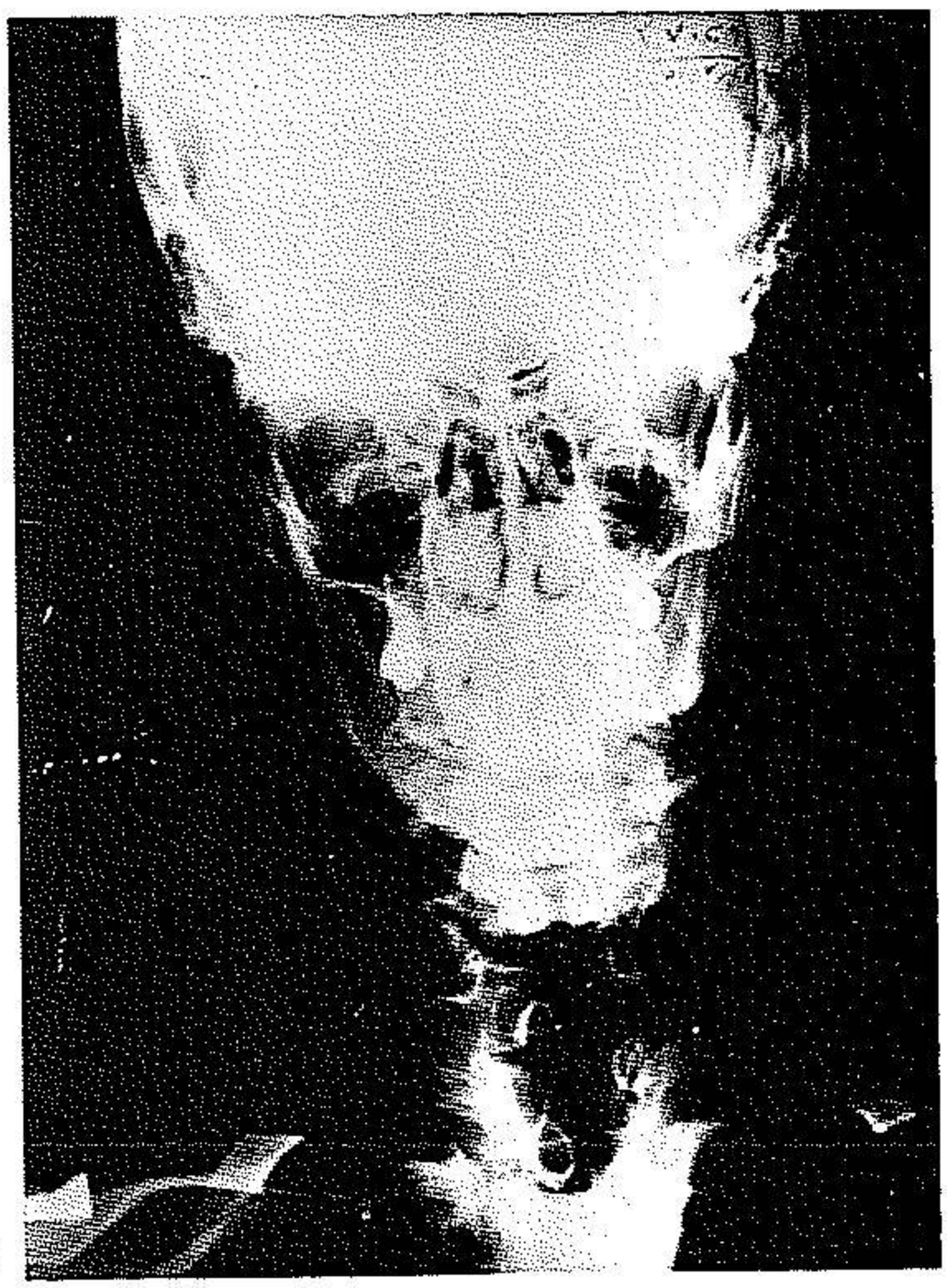

Fig 4

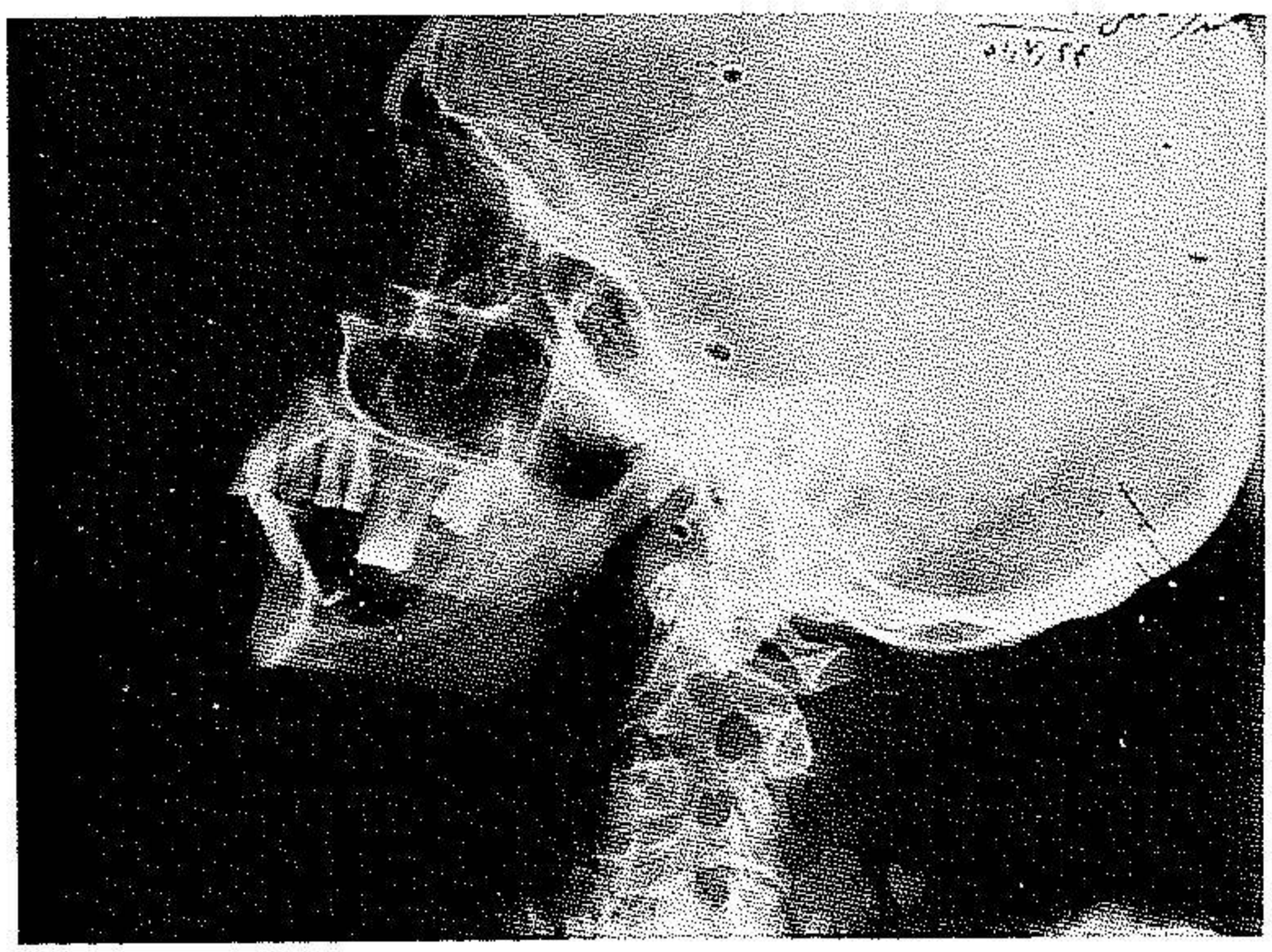

Fig 5

Fig 6

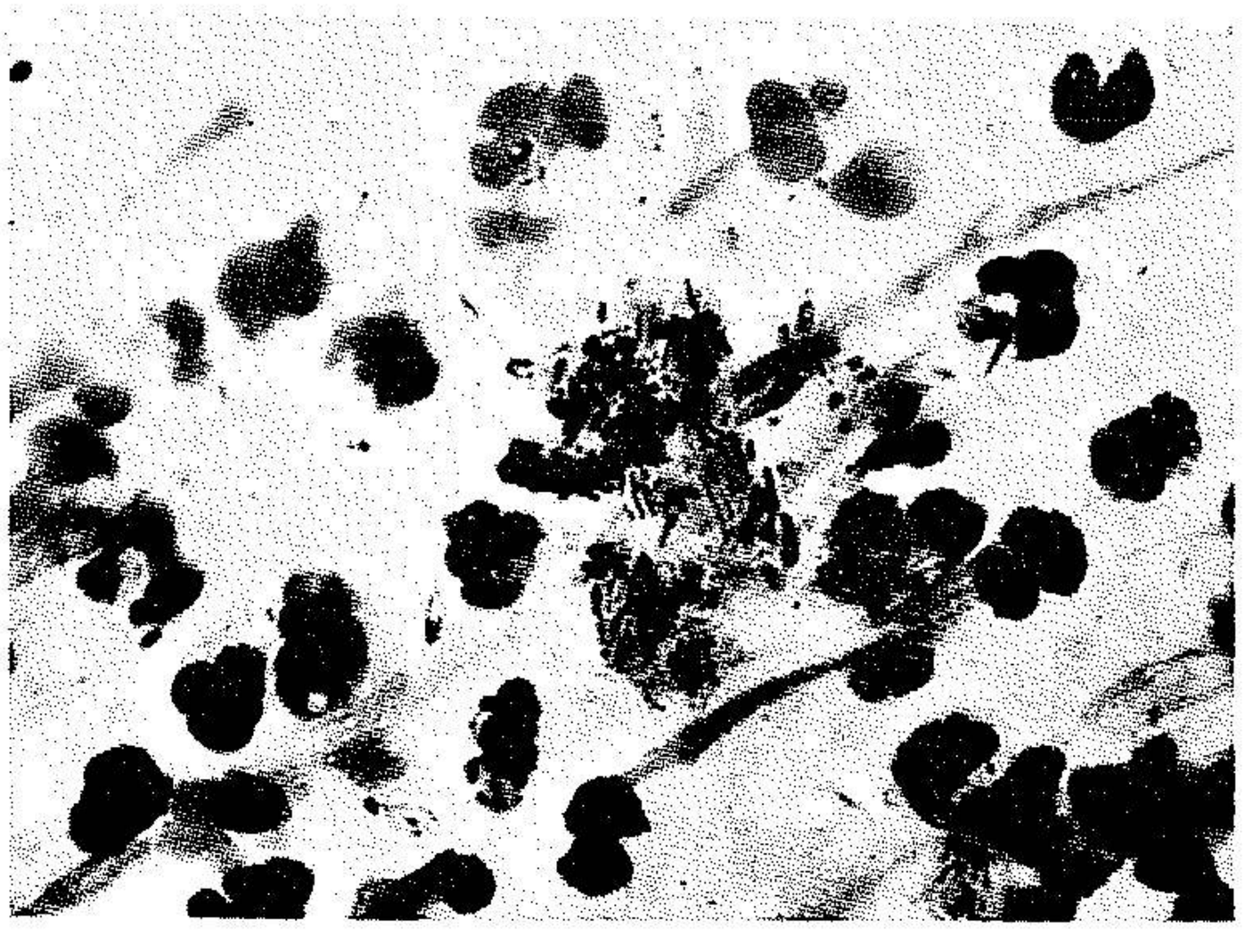

Fig 7

Discussion

Actinomycosis is a rare affection (11) caused by Actinomyces Israeli (3, 9, 13, 17, 20). Complete bibliography of the disease was published by Al Doory in 1971 (1). It is three times as common in males as in females and ten times as common in rural districts as in largetowns, and about 80 per cent of cases occur in persons over 20 years of age (19). This disease is caused by a gram positive bacteria like fungus, Actinomyces Israeli; (or A. Bovis in animals) (3, 4, 5, 9, 18, 20) which had the very unusual property for a fungal pathogen of being an anaerobic organism (15).

This requirement limits growth to situations where the oxygen tension of the tissue is greatly reduced, as in devitalised tissues of occluded spaces, and is the central feature in understanding the pathogenesis and course of infection. The hallmark of the disease is the formation of granulomatous draining sinuses exuding pus containing "sulphur granules" which are actually colonies of fungus.

The source of the organism is endogenous, it exists as a harmless resident in the month of some normal individuals, being found particularly where anaerobic conditions favor its growth. Actinomycosis is classified into three main types, according to its location: 1. cervicofacial 56.7% 2. thoracic 22.3%, 3. abdominal 15%, generalised infection is uncommon (22). Seven cases of cervicofacial actinomycosis have been reported from the Pathology Department of the Tehran University, Medical School (2).

Therapy of actinomycosis includes penicillin G (2-5 millions units daily for four to eight weeks) potassium iodide and surgical drainage of abscesses. Sulfamides have been given in combination with penicillin G on occasion but are usually not indicated except in the presence of aerobic actinomyces (Nocardia) (6, 17).

Seabury et al reported good results with penicillin G alone or in combination with a sulfonamide in 20 patients (21). Tetracycline (8, 12) and lincomycin have been used in those who show sensivity to penicillin, particularly because it can diffuse in the bone tisse (1, 16).

Before the antibiotic era radiotherapy was used in the cervicofacial localization form with more or less satisfactory results.

Summary

Two cases of advanced jaw destruction due to Actinomyces is reported; one with diabetic diathesis and a history of tooth extraction the other had a trauma of the mandible with the fracture; good results were obtained with penicillin therapy.

Résumé

Deux cas d'actinomycose cervico-facial dû mendibule inferieur sont décrits. L'un avec diabète mellitus ayant l'histoire d'extraction de dents et l'autre avait un histoire de traumatisme. La penicilline a effectué de bons résultats thérapeutiques chez ces malades.

Acknowledgment

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