Mandibular osteomyelitis due to *Actinomyces* spp

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DESCRIPTION

A 68-year-old hypertensive and diabetic (glycosylated haemoglobin 10%) man presented with complaints of swelling and multiple discharging sinuses in the right jaw for 2.5 years. He was a known tobacco and areca nut chewer for last 30 years. Before the onset of these manifestations, he had a history of impacted areca nut in the right jaw, which required surgical removal. His jaw swelling was insidious in onset, painless and slowly progressive. One year into the illness, he developed discharging sinuses in the right jaw. The discharge was initially mucoid and gradually became foul-smelling and purulent. On general examination, he was found to have bilateral cervical lymphadenopathy. Local examination revealed hard woody swelling of the right jaw with multiple discharging sinuses and yellow-coloured discharge (figure 1A). Along with dental caries, ulceroproliferative lesion was also noticed inside the oral cavity (figure 1B). X-ray of the mandible showed mandibular osteomyelitis. Histopathology of the biopsy from the sinus tract was suggestive of actinomycosis (figure 1C). He was treated with intravenous piperacillin-tazobactam to cover for possible anaerobic infection as the discharge was foul-smelling. He received intravenous therapy for 1 month, following which his facial swelling started to improve. He was discharged on oral amoxicillin-clavulanate and doxycycline. A follow-up after 6 months showed a significant decrease in the jaw swelling.

Cervicofacial actinomycosis is a chronic disease caused by a branching, filamentous, gram-positive bacilli belonging to the genus *Actinomyces*. It is characterised by progressive swelling in the jaw with a tendency to spread beyond the fascial planes.¹ It is also accompanied by tissue fibrosis and multiple discharging sinuses. Cervical lymphadenopathy is seen only if the disease has progressed considerably. Osteomyelitis of the mandible is rarely seen in actinomycosis.² Antecedent tissue injury and infection in the cervicofacial region are important risk factors of actinomycosis.¹ Immunosuppressed state, including diabetes, increases the risk of actinomycosis as well.¹ In this patient, impacted betel nut, poor dental hygiene and diabetes were the possible risk factors. The characteristic macroscopic and microscopic appearance of the yellow-coloured 'sulfur' granules helps to make the diagnosis of actinomycosis. Culture, although valuable, becomes negative with short courses of antibiotic therapy.³ The infection is commonly polymicrobial, and therefore, treatment should cover for other suspected organisms as well. Initial parenteral therapy (penicillin, ceftriaxone, piperacillin-tazobactam, imipenem-cilastatin) is given for a month after which patients are shifted on

Figure 1 (A) Ulceroproliferative lesion of the right jaw with yellow coloured discharge, (B) oral proliferative lesion, (C) Histopathological examination (20× magnification) showing a clump of basophilic filamentous bacteria surrounded by acute inflammatory cells (H&E, 20×).

long-term oral therapy (oral penicillin, amoxycillin, doxycycline).^{4,5} Aggressive therapy was undertaken in this patient considering the severity of disease and possible concurrent anaerobic infection.

Patient's perspective

My illness began with a small swelling of the jaw. I ignored it in the beginning but eventually it was very difficult for me to eat food. I initially tried with homeopathic medicines and local doctors but my condition did not improve. I had to come to this hospital which is more than a 1000 km away. I had to stay here for a month but I am happy now that the swelling and discharge have considerably reduced.

Learning points

- ▶ Actinomycosis should be suspected in patients with jaw swelling and discharging sinuses (showing sulfur granules), especially with a history of trauma/infection.
- ▶ Osteomyelitis is a rare manifestation of actinomycosis and may require long-term and aggressive treatment with beta-lactams/doxycycline.

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