An elderly with a 'bony' smile

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Case summary

A 62-year-old Caucasian man presented with progressive painless loss of the upper dentition and discolouration of the upper gums. He was referred by a dentist after undergoing dental treatment with debridement twice before his presentation to the otolaryngology department. He had a long history of hypertension and was diagnosed with osteoporosis 3 years ago. He was on regular antihypertensive medication and had been taking oral bisphosphonate for more than 2 years for osteoporosis. He denied steroid use in any form. No history of malignancy, radiation to the head and neck region or pre-existing dental or oral cavity issues was found. He was a smoker of 30 pack-years and an occasional alcohol user.

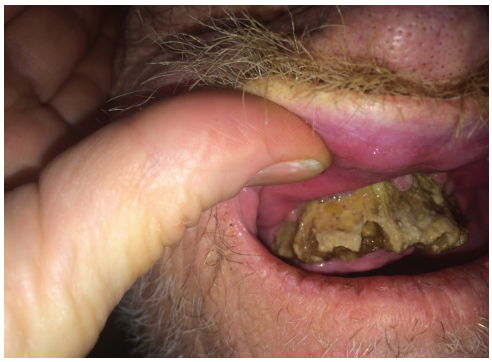

Figure 1. Maxilla can be seen upon smiling

Questions

1. Describe the abnormality?
2. What is the diagnosis?
3. What are the risk factors?
4. What are the options of management?

Answers

1. The oral cavity shows exposed maxillary alveolar bone, some residual gingival granulation tissue and the loss of upper dentition.

2. This is a classical appearance of 'medication-related osteonecrosis of the jaw (MRONJ)'[1]. In this case, it happened at the alveolar process of the maxilla.

3. Bisphosphonate treatment, treatment with other antiresorptive [e.g. receptor activator of nuclear factor-κB ligand (RANKL inhibitors)] or antiangiogenic agents (tyroxine kinase inhibitors), monoclonal antibody therapy against vascular endothelial growth factor (VEGF), prolonged duration of osteoporosis treatment, chronic corticosteroid treatment, chronic dental infection conditions such as periodontal disease and dental procedures (often the trigger) are some of the known risk factors.

The association between bisphosphonate and osteonecrosis of the jaw/maxilla has long been established.[2] However, previously it was predominantly observed after intravenous use of bisphosphonate for hypercalcaemia of malignancy and bone metastasis. A worrying trend has emerged recently as oral bisphosphonate is used for the treatment and prophylaxis of osteoporosis and osteopenia.[3]

The incidence of osteopenia and osteoporosis is bound to increase with increasing life expectancy. It is inevitable that treatment complications of the aforementioned conditions will be on the rise. The risk of new cases of MRONJ varies between 1/100,000 and 1/10,000 per year of therapy.[4,5] Duration of treatment has a negative impact. Thus, it is important that primary care physicians, specialist physicians and dentists are aware of this condition so that prompt and early action can be taken. If a patient has risk factors such as a history of cancer, chemotherapy, radiation therapy or steroid use, the implementation of dental screening and appropriate dental measures before initiating antiresorptive therapy can lower the risk.[1]

4. When a patient is diagnosed with MRONJ, the subsequent treatment aim is to eliminate pain, control the secondary infection to the soft and hard tissues and minimise the progression of bone necrosis.[1] The treatment can be non-surgical or surgical depending on the severity at presentation.

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A teenager with mucoid discharge from the neck

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Case summary

A 15-year-old boy presented with a history of recurrent discharge from an opening located at the lower anterior part of the neck since childhood. Occasionally, the surrounding area became swollen, and the amount of discharge increased. Examination revealed a non-tender fullness at the right lower one-third of the sternocleidomastoid region. A punctum with colourless mucoid discharge was also observed. The amount of discharge increased on applying pressure (Figures 1 and 2).

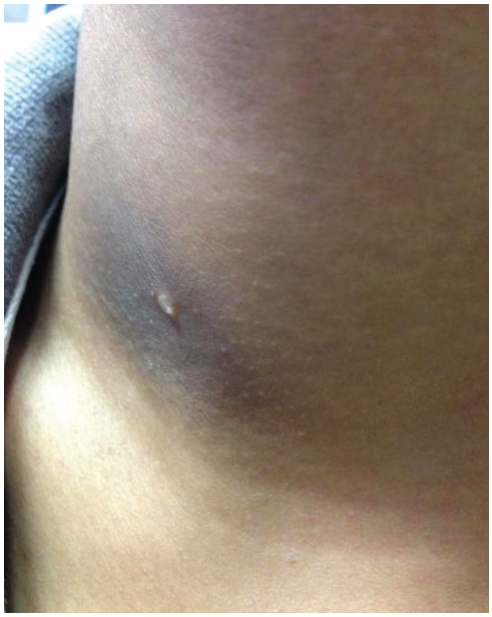

Figure 1. A punctum with colourless mucoid discharge

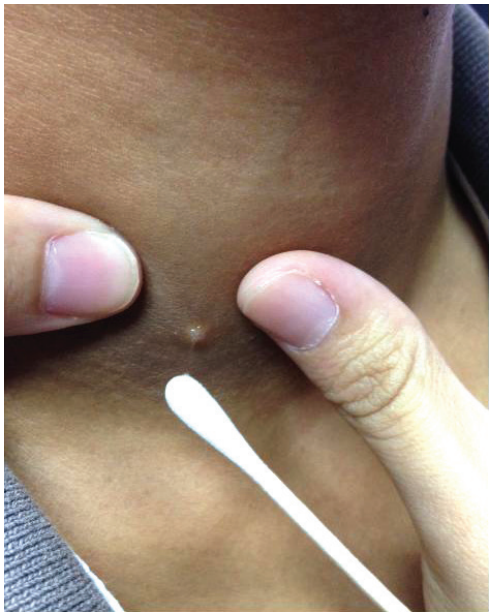

Figure 2. Increased discharge on applying pressure

Questions

1. What are the differential diagnoses?
2. State the required investigation.
3. Outline the management.

Answers

1. The presence of punctum indicates a communication between the deeper structure or space and the skin. In this case, the problem began in childhood. The most probable diagnosis is a branchial sinus, which is congenital in origin. The patients commonly present in the first 2 decades of life.[1] A complete branchial fistula (internal and external openings) needs to be ruled out. Sebaceous cyst, cervical abscess and suppurative thyroid lesions are differential diagnoses.[2]

2. A discharging sinus in the neck must be imaged to establish whether the communication ends in a blind sac (a sinus) or connects to the aerodigestive tract (a complete fistula). A fistulogram should be performed by injecting a contrast dye into the tract, and the flow should be captured on fluoroscopy.[2] In this case, the study showed a small loculated contrast collection at the anterolateral aspect of the right lower neck, approximately 1 cm beneath the surface of the tract opening. No communication with the internal lumen was observed.

   During the 2nd to 6th week of embryological life, six branchial arches develop to form the important structures in the head and neck region. Even though the underlying pathogenesis of branchial anomalies remains uncertain, the most

widely accepted theory is the incomplete obliteration of the branchial apparatus, resulting in the formation of cyst, sinus or fistula.[3] While most of the cases are unilateral, bilateral and multiple-arch abnormalities in a single patient have been reported.[4]

3. The patient can be reassured that this lesion is benign. However, the treatment of choice is complete surgical excision of the fistulous tract.[1,3] In this case, the surgery was indicated because the reservoir of mucoid content was present. This lesion may get infected and abscess can develop. Incision and drainage alone will not be a sufficient treatment strategy, as the fluid-containing sac will still be present under the skin.

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