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Giant dental calculus in an older patient

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Dental examination remains an important step before the prescription of antiresorptive medication for osteoporosis. Antiresorptive medication may result in osteonecrosis of the jaw.[1] Invasive dental procedures may require interruption of these medications, and the procedure itself may result in osteonecrosis if patients are concurrently taking them.[1] Dental examination should include identification of obvious dental caries and periodontal disease. We report a case of an unusually large dental calculus in an older adult, highlighting the importance of routine dental examination, particularly in this population.

A 92-year-old man was admitted to our institution in March 2025 with vertebral fractures at the 1st lumbar and 12th thoracic vertebrae. Past medical history included minor stroke, hypertension, gout and atrial fibrillation for which the patient was prescribed an oral anticoagulant. Physical examination revealed no neurological deficit. Dual energy X-ray absorptiometry had not previously been performed. Examination of the oral cavity, performed before prescribing antiresorptive medication, revealed a 3-cm yellowish-white, calcified mass on the lower gingiva (Fig a). No teeth were seen in the oral cavity. The tooth to which the calculus might have been attached could not be identified. The deposit had been present for over 20 years, but the patient had not sought dental evaluation. X-ray revealed an oval-shaped calcified mass near the mandible (Fig b). Microscopic examination of the scraped lesion showed calcified foreign materials admixed with bacterial microorganisms and benign epithelial cells. A speech therapist was consulted and reported no dysphagia related to the calculus. The patient was referred to the dentist for extraction and to exclude malignancy, although he and his relatives were indecisive. Antiresorptive medication was not prescribed. He was prescribed a calcium and a vitamin D supplement.

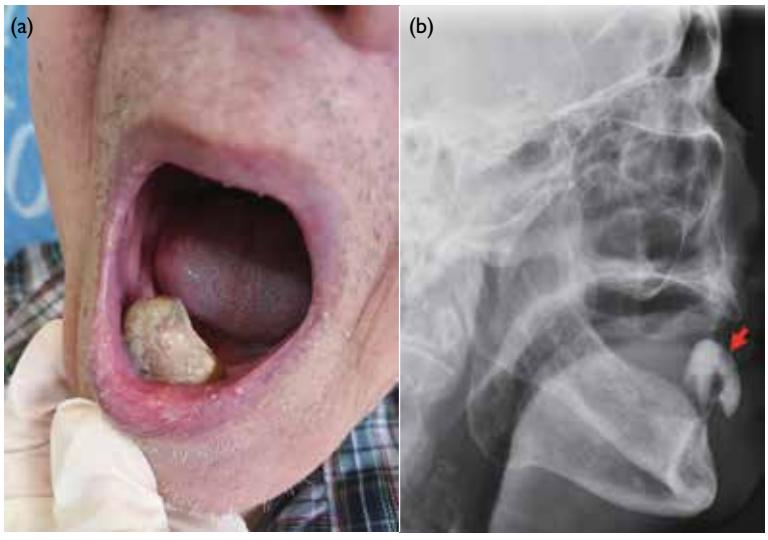

FIG. (a) A 3-cm yellowish-white, calcified mass on the lower gingiva of the patient. No other teeth were identified in the oral cavity. (b) A 2.4-cm dense radiopaque mass was observed in the lower anterior tooth region on X-ray (arrow)

Dental calculus is a calcified deposit that forms on teeth and other oral structures when plaque hardens over time.[2-4] Often it is related to poor oral hygiene.[2-4] Although small amounts of calculus are common, the presence of a large, longstanding deposit is rare and can lead to significant oral and systemic health issues if left untreated. There have been previous case reports of huge dental calculus reported and often extraction is needed to allow complete examination for underlying malignancy.[3,4] Prominent calculus impairs mastication and increases the risk of periodontal disease, limiting food choices and increasing the risk of malnutrition and sarcopenia.[2] In addition, the potential need for invasive dental procedures will preclude the early prescription of antiresorptive agents.

Previously, there were concerns about the provision of non-urgent public dental services for older adults in Hong Kong.[5] With the provision of an electronic booking system, the Community Care Fund Elderly Dental Assistance Programme and the Elderly Health Care Voucher Scheme, it is hoped that older adults will have improved access to local non-emergent dental services.[5]

This case underscores the need for dental examination in older adults before starting antiresorptive medication.

Author contributions

Both authors contributed equally to the concept or design, acquisition of data, analysis or interpretation of data, drafting of the manuscript, and critical revision of the manuscript for important intellectual content. Both authors had full access to the data, contributed to the study, approved the final version for publication, and take responsibility for its accuracy and integrity.

Conflicts of interest

Both authors have disclosed no conflicts of interest.

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Ethics approval

The patient was treated in accordance with the Declaration of Helsinki. Informed consent was obtained from the patient for all treatments and procedures. The patient also provided written consent for publication of this case report with the accompanying images.

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