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Sialolithiasis of the right submandibular gland incidentally found on the panoramic radiograph

KEYWORDS
Sialolithiasis;
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Sialolithiasis (so-called salivary gland stones) may occur in all salivary glands, but they are predominantly found in the submandibular gland or its main excretory duct (Wharton's duct) (80 %–90 %). Sialolithiasis may arise from deposition of calcium salts around a nidus of debris within the duct lumen. This debris may include concentrated mucus, bacteria, ductal epithelial cells, or foreign bodies. Sialolithiasis may cause pain, inflammation, or swelling of the adjacent soft tissues, but they are sometimes asymptomatic.[1–3] In this article, we reported the detection of the sialolithiasis of the right submandibular gland on the panoramic radiograph of an adult patient incidentally.

This 63-year-old male patient came to our dental outpatient clinic in May 2019, with a request for the treatment of an impacted left mandibular wisdom tooth (tooth 38). The initial panoramic radiograph revealed a horizontally impacted tooth 38 with a dentigerous cyst-like radiolucent lesion surrounding the crown of tooth 38 in the left posterior region of the mandible. Other two calcified (radiopaque) masses were incidentally found superimposed on the lower-third of the ascending ramus of the right mandible (Fig. 1A). However, the patient had no complaints about the sialolithiasis. In July 2019, the impacted tooth 38 was extracted and cyst enucleation was performed under general anesthesia by the oral surgeon. The histopathological examination confirmed the removed cyst-like soft tissue specimen to be a dentigerous cyst. A half year after the surgery, the follow-up panoramic radiograph showed that there was new bone formation in the original surgical site. However, the calcified (radiopaque) masses in the ascending ramus of the right mandible remained the same (Fig. 1B). After discussion with the patient, continued follow-ups were suggested. Furthermore, a cone-beam computed tomography (CBCT) examination was obtained for the confirmation of the location of the sialoliths. The constructed CBCT image and the coronal sections of the CBCT exhibited the sialoliths in the right submandibular gland measuring about 10 mm × 8 mm in total (Fig. 1C and D). Finally, the follow-up panoramic radiograph revealed that the sialoliths remained the same 5 years later (Fig. 1E).

Sialolithiasis is more commonly discovered in men, and the peak age of onset is between 30 and 60 years. There is some evidence that the patients with sialolithiasis are more likely to develop nephrolithiasis.[3] Up to 90 % of the submandibular gland stones can be detected on the general radiographs. In contrast, only 10 % of parotid gland stones can be visualized on the general radiographs. Therefore, if the salivary gland stones are not detected or visualized on the general radiographs, it does not mean that there are no salivary stones.[4] Therefore, the high-resolution computed tomography, especially the CBCT, is currently the tool of choice for most clinicians to examine salivary gland stones in dentistry.

In addition, sialolithiasis may also cause serious complications, such as acute suppurative sialadenitis, dilatation of the salivary ducts, chronic fibrotic stenosis of the salivary

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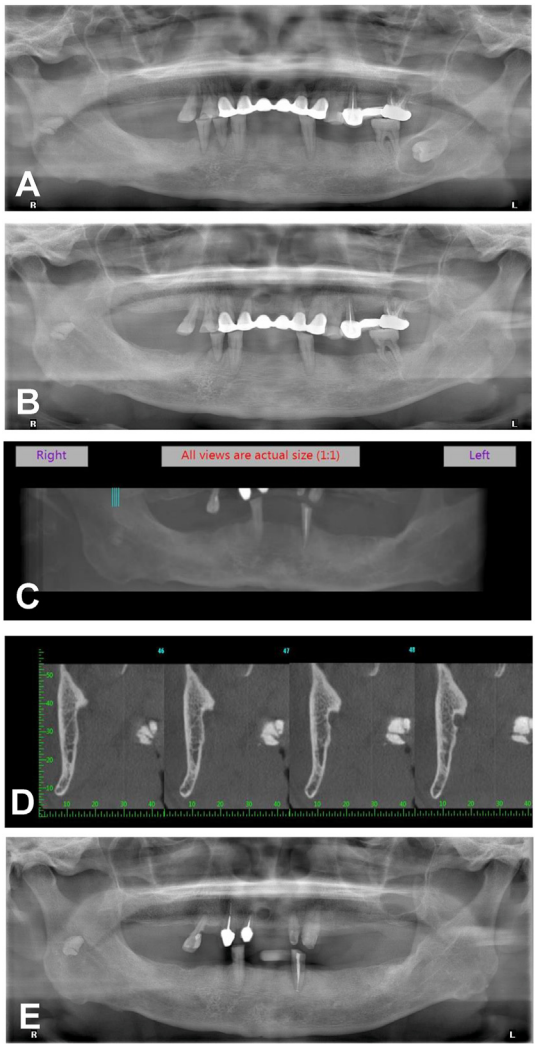

Figure 1 The sialolithiasis detected on the panoramic radiograph of our patient incidentally. (A) On the initial panoramic radiograph taken at the first visit for the consultation of the left mandibular third molar, there was a horizontally impacted tooth 38 with a dentigerous cyst surrounding the crown of the tooth 38 in the left posterior region of the mandible. Other two calcified (radiopaque) masses were incidentally found superimposed on the lower-third of the ascending ramus of the right mandible. (B) On the follow-up panoramic radiograph taken at the visit a half year after the extraction of the tooth 38 and removal of the dentigerous cyst, there was new bone formation in the original surgical site. However, the calcified (radiopaque) masses in the ascending ramus of the right mandible remained the same. (C and D) The constructed cone-beam computed tomography (CBCT) image (C) and the coronal sections of the CBCT (D) showed the sialoliths in the right submandibular gland measuring about 10 mm × 8 mm in total. (E) On the follow-up panoramic radiograph taken at the visit 5 years after the surgery, the sialoliths remained the same.

ducts, abscesses, deep neck infections, sepsis, and cellulitis. Therefore, it is still necessary for the dentists to detect asymptomatic sialolithiasis in the patients through the routine panoramic radiography. Under the current trend of dental practice, the dentists generally use the panoramic radiograph as a preliminary diagnostic tool of the tooth or jawbone diseases. We consider that the dentists have the opportunity to proactively detect salivary gland stones for the patients in their daily clinical work.[5]

Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

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None.

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