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Endoscopic retrieval of phleboliths in the infratemporal fossa: A rare case report

The infratemporal fossa (ITF) is an anatomically complex region containing critical structures such as the mandibular nerve, chorda tympani, maxillary artery, and pterygoid venous plexus.[1] Surgical management of ITF lesions, including neoplasms, foreign bodies, and infections, poses significant challenges due to the risk of vascular and neural injury. Traditional approaches, such as lateral (transtemporal or periauricular) and anterior (transfacial) techniques, often result in complications.[2] Injury of lingual nerve, inferior alveolar nerve, and facial paresis were reported to be common complications after traditional surgery approaching ITF.[3] This report presented a rare case of phleboliths in the ITF, which were successfully removed using a minimally invasive transoral endoscopic-assisted approach (see Fig. 1).

A 72-year-old woman was referred to oral and maxillofacial surgery after her dentist noted multiple radiopacities on a panoramic radiograph. She had no significant medical or surgical history. Physical examination showed a symmetrical face with no swelling or nodules, and intact oral mucosa. Contrast-enhanced CT revealed small, round radiopacities in the right ITF and left retromolar region. The patient reported a foreign body sensation, prompting surgical intervention. A transoral endoscopic-assisted approach was performed. Two 2-cm incisions were made in the bilateral retromolar areas. A 0-degree endoscope was inserted, and dissection proceeded through the pterygoid musculature to expose the lesions. Three phleboliths measuring up to 0.6 × 0.5 × 0.5 cm were removed from the right side, and one measuring 1.3 × 0.7 × 0.6 cm was removed from the left side. Histopathological analysis confirmed calcified nodules with an onion ring-like lamellar pattern and surrounding elastic fibers, consistent with phleboliths. The patient recovered without complications and has remained symptom-free during a follow-up period of 12 months.

Phleboliths, commonly found in the parotid and masseter regions, are rare in the ITF.[4] Although usually asymptomatic, they may require intervention if symptomatic or complicated. Traditional ITF surgeries involve significant risks, including vascular injury, hemorrhage, and nerve damage. In this case, the transoral endoscopic-assisted approach minimized these risks, avoiding external incisions and reducing trauma. This minimally invasive technique preserved vital structures and expedited recovery.[5] To the best of our knowledge, this may be the first documented case of phlebolith retrieval from the ITF using this minimally invasive technique. This report underscores the value of endoscopic techniques in managing challenging lesions in anatomically complex regions.

Declaration of competing interest

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

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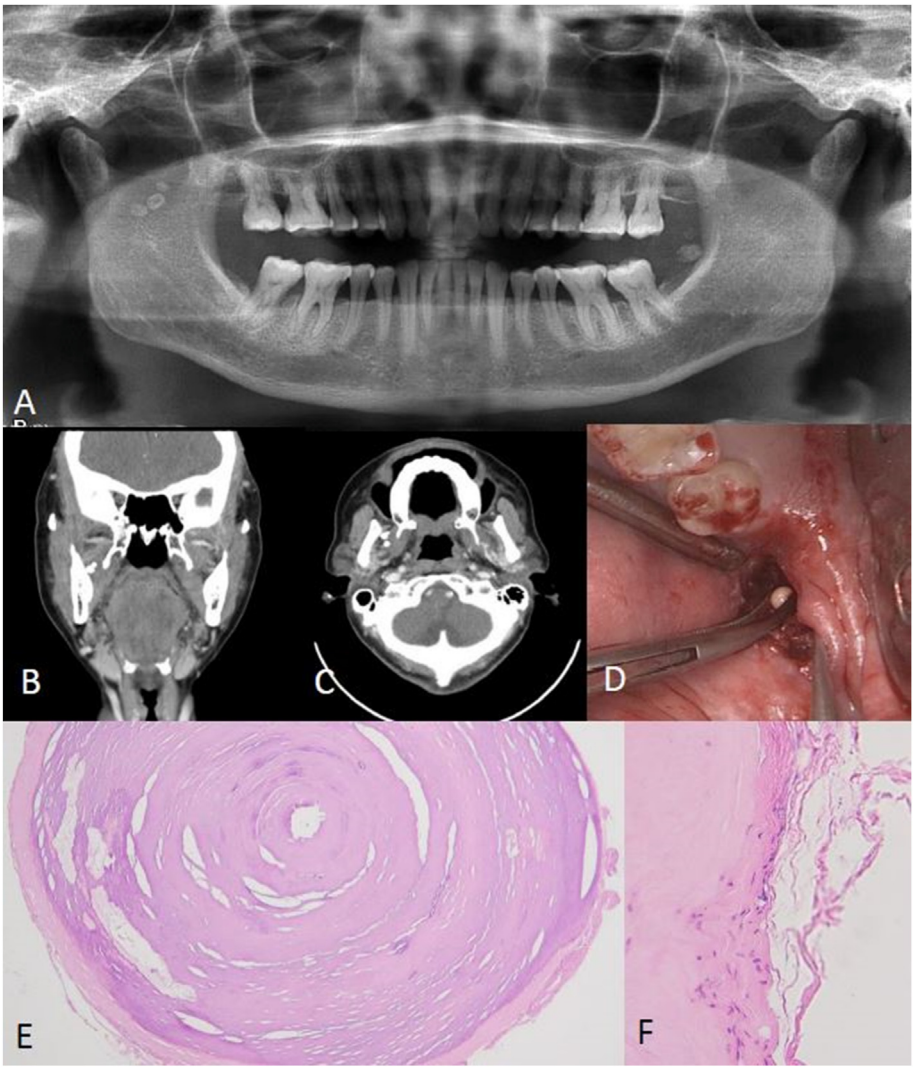

Figure 1 Radiographic and clinic photographs and photomicrographs of our patient.
(A) The panoramic radiograph revealed multiple radiopacities, raising concern for the dentist. The patient was referred to the oral and maxillofacial department for further evaluation.
(B&C) The CT scan localized the lesion to the right side, lateral to the medial pterygoid muscle, medial to the coronoid process, and inferior to the lateral pterygoid muscle, consistent with a location in the infratemporal fossa.
(D) Endoscope-assisted surgery was performed with a minimal incision. The lesion was retrieved under a zero-degree endoscope.
(E) One of the calcified nodules under the microscope, showing an onion-like lamellar arrangement characteristic of phleboliths (H&E stain, 40X).
(F) Elastic fibers surrounding the calcification suggest that the lesion is associated with a blood vessel (H&E stain, 200X).

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