

Cone beam computed tomography use in sialolithiasis of the submandibular salivary gland

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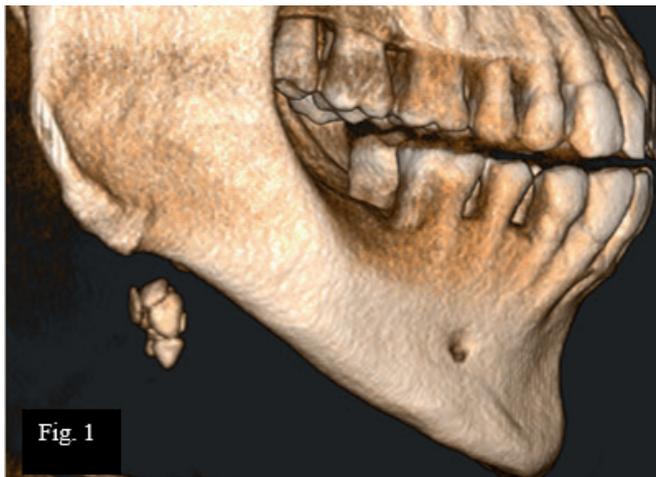


Fig. 1



Fig. 2

KEYWORDS

Sialolith, submandibular gland, soft tissue calcification, cone beam computed tomography

A 62-year-old diabetic male patient presented with right-sided facial pain associated with a firm palpable mobile mass in the right submandibular area.

Following initial examination, cone beam computed tomography (CBCT) investigation demonstrated multiple smooth homogenous calcifications (Figure 1) collectively measuring 12mm x 9mm x 8mm within the region of the right submandibular gland (Figure 2). On resection of the submandibular gland, the histological features of the lesion were confirmed to be those of chronic sclerosing sialadenitis supporting the clinical impression of a sialolith.

Sialolithiasis, one of the most common disorders of the major salivary glands, is characterised by calcifications within the ducts or parenchyma of the affected glands. Plain radiography is of limited value in the evaluation of sialoliths due to inadequate localisation and superimposition over bony structures.

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Sialography, a widely used imaging technique, entails injecting a contrast medium into the Stensen's or Wharton's duct to identify the outline of the ductal anatomy and any presence of sialoliths.¹ This imaging technique provides excellent contrast resolution and provides for the detection of early and small calcification.²

Submandibular sialography bears disadvantages of the invasiveness of the procedure, cannulation complications and operator skill. Conventional sialography uses panoramic, occlusal and postero-anterior radiographs which provide appropriate views (with cumulative radiation exposure) for examining the major salivary glands.

CBCT is increasingly used in maxillofacial and oral imaging owing to the advantageously high isotropic spatial resolution of osseous structures. CBCT does not demonstrate ductal anatomy or the relationship of calculi to surrounding tissue as medical computed tomography (CT) does.³ CBCT, however, allows for localisation, dimensions of calculi and facilitates differentiation from other pathology when superimposed over the mandible. Based on the diagnostic information relative to the radiation dose CBCT offers value to the dental practitioner in the diagnosis and management of sialoliths.

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