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A Diagnostic Dilemma: a Firm Left Submandibular Node

Abstract: A diagnostic conundrum of a firm, left submandibular node presenting in a 35-year-old female with a history of pain and persistent swelling is described. This paper aims to educate readers on the differential diagnostic dilemma that may be faced in general practice and discusses the importance of shared care in a multidisciplinary setting.

CPD/Clinical Relevance: The presentation of this clinical case is discussed with radiographic imaging and the multidisciplinary approach undertaken for patient management. Readers can identify the steps undertaken in this case to exclude conditions in the surgical sieve.

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This case report details the diagnostic difficulties encountered in the management of a firm, hard swelling in the submandibular region associated with multiple enlarged cervical lymph nodes presenting in a 35-year-old female patient.

Case report

A 35-year-old female was referred by her general dental practitioner regarding a radiolucent lesion in the mandibular left second premolar and first molar regions. The patient on attendance reported having a left submandibular region swelling which had been present for 3 weeks. The swelling was initially painful, however, this had reduced recently and the patient reported mild tenderness on palpation. Extra-oral examination revealed a tender, firm, 3 cm

swelling in the left submandibular region, as well as multiple enlarged cervical lymph nodes. Intra-oral examination showed healthy oral mucosal tissues and no buccolingual bony expansion of the mandible in the left premolar and molar region. No teeth were tender to percussion, pressure or palpation and all adjacent teeth, excluding the endodontically treated mandibular left second premolar (LL5) and first molar (LL6), responded positively to sensitivity testing using *Endo-frost* (Coltene). Radiographically, there was a radiolucency associated with the endodontically treated LL5 and LL6 (Figure 1).

The patient informed us that she had previously undergone enucleation of a radicular cyst in the left posterior mandible in Asia in 2011. Medically she was fit and well with no allergies and she did not take any regular medication. She had previously been treated for tuberculosis in 2007. She also confirmed that she had recently returned from the Indian Subcontinent. Provisional clinical differential diagnosis included tuberculosis and infected radicular cyst.

The patient underwent further imaging to aid diagnosis in the form of a CBCT and ultrasound. The CBCT showed

the buccal cortices were intact and there was perforation of the lingual cortex with expansion. An ultrasound with Fine Needle Aspiration Cytology (FNAC) was also requested due to the possibility of tuberculosis. This demonstrated an ill-defined hypoechoic lesion in keeping with an enlarged left level IB node but FNA was inconclusive. A chest X-ray was also undertaken which showed no pathology. Due to the inconclusive findings of the FNA, the patient was referred to the Head and Neck unit with a view to undergoing a cervical lymph node biopsy. A repeat ultrasound was performed. This identified a sinus tract communicating from the inferior/lingual cortex of the posterior body of the mandible to the neck.

A diagnosis of an infected radicular cyst was confirmed as being the likely cause of the submandibular swelling and the proposed cervical lymph node biopsy was deferred. The patient underwent cyst enucleation and extraction of the mandibular left second premolar and first molar under general anaesthesia (Figure 2). The patient was discharged on the same day with analgesics and a five day course of antibiotics.

The patient was reviewed two

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Figure 1. Pre-operative DPT showing a unilocular radiolucency associated with the LL5 and LL6.

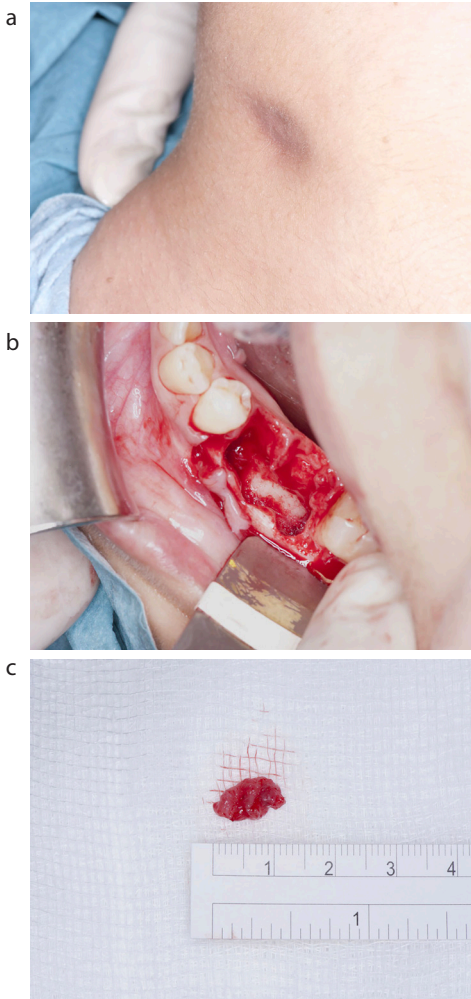


Figure 2. Surgical images: (a) extra-oral view showing area of lymphadenopathy; (b) surgical site; (c) removal of lesion.



Figure 3. Post-operative DPT.

weeks post-surgery whereby satisfactory healing was evident. The histopathology identified an irregular fragment of fibrous tissue with a cyst wall featuring a dense chronic inflammatory cell infiltrate as well as acute inflammation. The features described were consistent with a radicular cyst. The patient's follow-up intervals thereafter were at one month and three months post-surgery. The extra-oral swelling she initially presented with resolved. At the three-month recall, a DPT was taken which showed good bony infiltration in the area of the cyst (Figure 3).

Discussion

Radicular cysts are the most common type of inflammatory odontogenic cysts arising from epithelial origin, usually due to pulpal necrosis.¹ The classical clinical presentation

of a radicular cyst typically is as a well-circumscribed, unilocular radiolucency associated with the apex of a non-vital tooth.^{2,3} The presentation of a radicular cyst may bring about a diagnostic challenge due to several differential diagnoses, including odontogenic keratocysts, dentigerous cysts and, less frequently, malignant tumours.^{1,4} The unremarkable intra-oral clinical findings, together with tender submandibular region swelling and cervical lymphadenopathy, made it important to exclude systemic causes, such as tuberculosis, in view of the history. Further investigations, including an ultrasound scan, showed an enlarged left level IB node for which an FNA was inconclusive. A chest x-ray was reported as clear. A repeat ultrasound at a later date identified a communicating tract from the cyst to the neck, resulting in the right diagnosis and treatment.

Conclusion

This case report emphasizes the benefits of additional investigations, as well as shared care, to help resolve a clinical dilemma.

Compliance with Ethical Standards

Conflict of Interest: The authors declare that they have no conflict of interest.

Informed Consent: Informed consent was obtained from all individual participants included in the article.

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