

Coronectomy of mandibular teeth other than third molars: a case series

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Abstract

Coronectomy is gaining popularity for the management of mandibular third molars that pose a risk of injury to the inferior dental nerve, as it considerably reduces the risk when compared with extraction. The technique could also be beneficial to other teeth. We report 17 patients who had coronectomy of mandibular teeth that were not third molars. Clinical and radiographic follow up for a median (range) of 12 (1–79) months showed satisfactory healing and no transient or permanent injury to the nerve. None of the retained roots have required retrieval.

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Introduction

Coronectomy was first described in 1984 by Ecuyer and Debieu to minimise the risk of iatrogenic injury to the inferior dental nerve during the removal of mandibular third molars.¹ It involves removal of the anatomical crown and retention of the roots, and over the years has been used to manage mandibular third molars that are close to the nerve. Clinical trials have shown that coronectomy reduces the risk of injury to the nerve when compared with conventional extraction.^{2–4}

Primarily, it is third molars that are close to the inferior dental nerve, but as other mandibular teeth may also be close to the nerve canal, coronectomy is an alternative to removal. To our knowledge this is the first published case series of coronectomy for mandibular teeth other than third molars.

Method

We retrospectively reviewed patients who presented to the oral surgery department at Guy's Dental Hospital between 2006 and 2015 and were treated by coronectomy of mandibular teeth, excluding third molars, which were shown radiographically to be close to the inferior dental nerve canal. Cone-beam computed tomography (CT) in 13/17 cases confirmed proximity to the nerve canal. Specialist orthodontic and restorative opinions were sought when required. Patients were given the options of no treatment, conventional extraction, or coronectomy.

All teeth treated by coronectomy were free of caries and periapical disease, and were sited where retention of the root would not interfere with future treatment.

Patients were treated under general anaesthesia or intravenous sedation as day cases. Treatment involved adequate exposure of the tooth to allow de-coronation, and reduction of the root to below the enamel-dentine junction and at least 3 mm below the alveolar crest. Any associated cyst lining was enucleated and sent for histopathological examination. Primary mucosal closure was achieved in all

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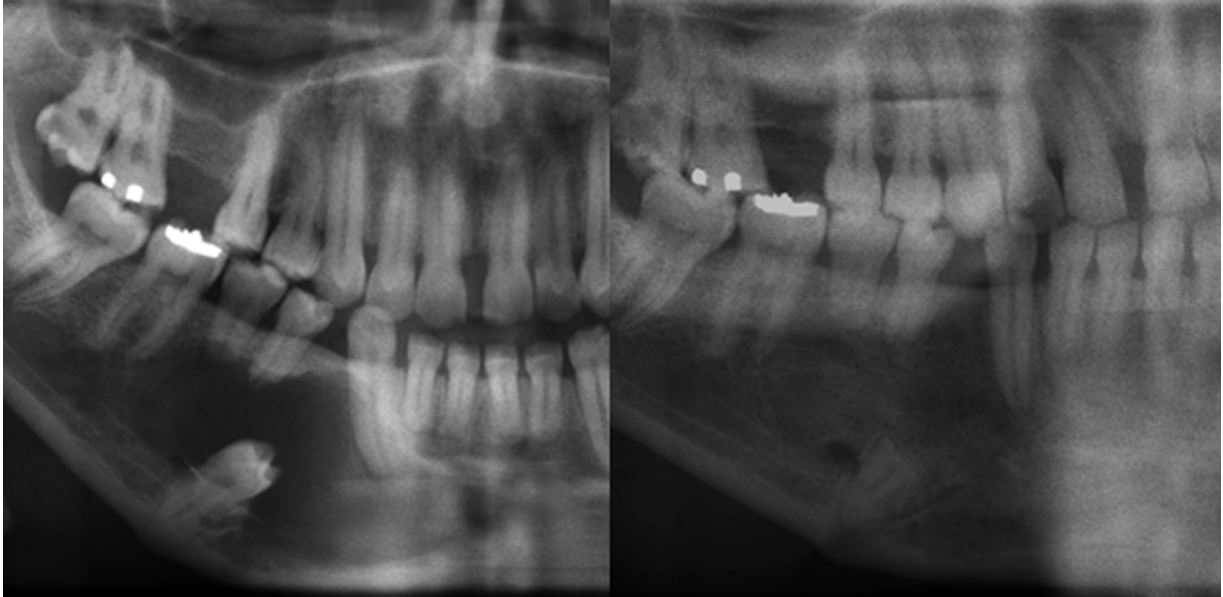


Fig. 1. Left side: Preoperative radiograph of LR supernumerary tooth associated with a dentigerous cyst that had been displaced to the lower border of the mandible. The cyst had caused resorption of the roots of LR4 and LR5. Right side: 19-month postoperative radiograph showing bony infill after enucleation of the dentigerous cyst and migration of the LR supernumerary root by about 4 mm. LR4 and LR5 are retained and sound.

cases and antibiotics were not routinely prescribed. Patients were reviewed clinically and radiographically postoperatively and by telephone review when they declined clinical follow up.

Results

A total of 17 patients (8 men and 9 women) with an age range of 13–73 years were included (Table 1). Mandibular second molars were most commonly managed by coronectomy ($n=9$), followed by mandibular second premolars ($n=5$). The reasons for treatment were impacted teeth ($n=8$),

dentigerous cysts ($n=4$), primary failure to erupt ($n=4$), and internal resorption ($n=1$).

All patients were reviewed clinically at least one month postoperatively. Three failed to attend after the one-month review, but one was later traced by telephone. Radiographic follow up was available for 14/17 patients (median (range) 12 (1–79) months).

There were no cases of temporary or permanent injury to the inferior dental nerve.

One patient who reported numbness of the buccal gingiva one month postoperatively failed to attend any further clinical follow up, but reported no symptoms on telephone review 38 months' postoperatively. Of the 14 patients with radiographic

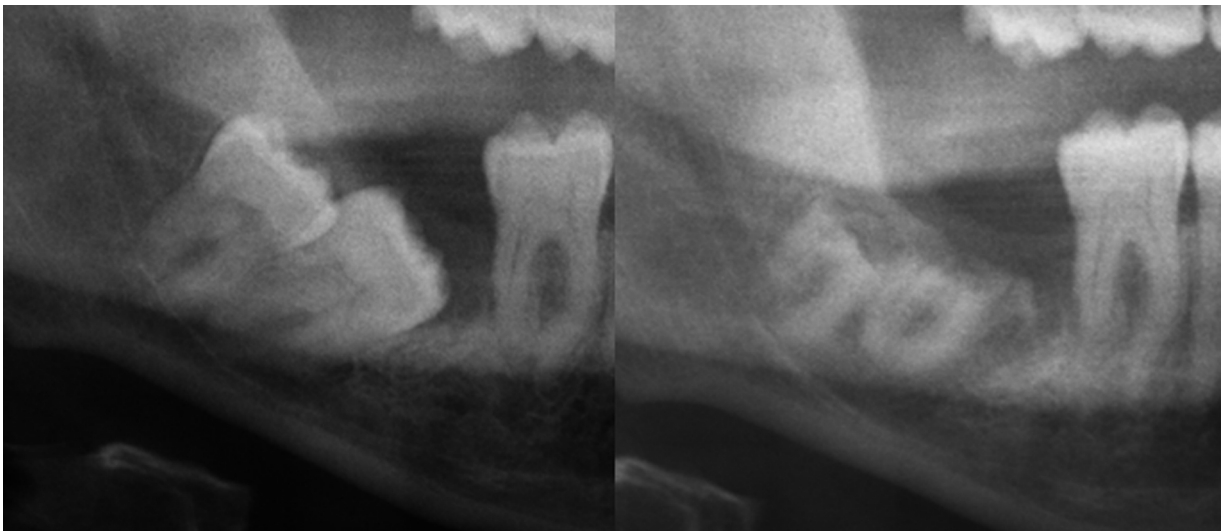


Fig. 2. Left side: Preoperative radiograph of LR7 with primary failure of eruption and impacted LR8. Right side: 22-month postoperative radiograph after coronectomy of LR7 and LR8 showing that the roots are free of disease, and the roots of LR7 have migrated 4 mm.

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