Upper premolar three rooted

The patient was referred to by her general dental practitioner (GDP) for the assessment and treatment of tooth 24. Root canal treatment of tooth 24 was initiated by the patients GDP however the canals could not be located and a perforation was subsequently created

All endodontic treatment was carried out using a dental operating microscope over two visits. Chemo-mechanical preparation was completed in the first visit. The perforation was repaired with GIC. The tooth was obturated with gutta-percha and zinc oxide eugenol based sealer, using a warm vertical condensation technique

The patient was reviewed at 1 year after completion of the endodontic treatment. There were no clinical signs or symptoms

One of the predominant causes of endodontic failure is untreated canals that remain inadequately debrided and obturated. This particularly affects teeth with additional root canals (Pitt Ford 2004, Bander et al 2010). Maxillary premolars most commonly present with two canals, however the incidence of three roots has been reported to range from 6-9.2% (Vertucci and Gegauff 1979, Mariusz et al 2005).

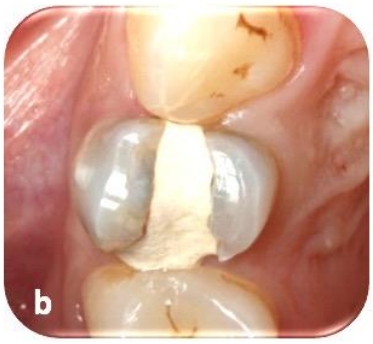
Upper premolars are commonly associated with anatomic variations. The anatomy described in this case is similar, to that of an upper molar, and is referred to as small molars or radiculous (Dax A et al 2011).

In this case the additional root was visible in the radiograph and the canals identifiable with the use of an operating microscope.

The treatment was complicated by the presence of a perforation due to incorrect access. The perforation was reasonably small and within the cervical third of the root. It has been reported that perforations at crestal level are of questionable prognosis due to the proximity to the epithelial attachment and contamination to the oral environment (Tsesis and Fuss 2006). In such cases a material that is biocompatible, with a short setting time and good seal ability (Fuss and Trope 1996) is ideal.

MTA is commonly used as a perforation repair material, however, due to the location of the perforation and risk of dissolution, glass ionomer cement was used to repair the perforation. (Regan et al 2005)


a

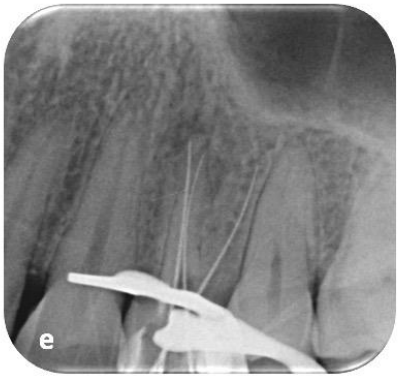

b

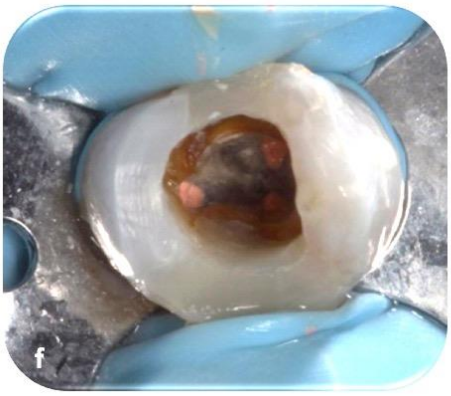

a


b


c


d

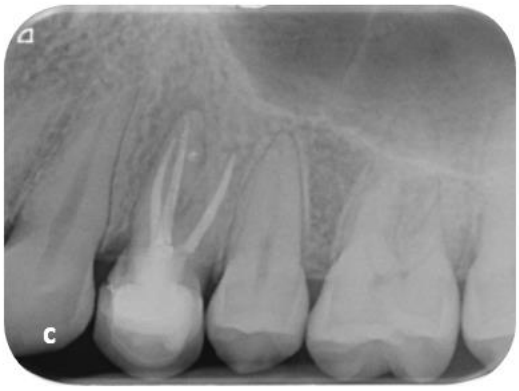

e


f


g


a


b


c