RADIX ENTOMOLARIS – CLINICAL AND ANATOMICAL IMPLICATIONS

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INTRODUCTION

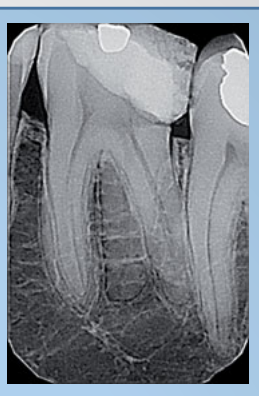
The success of endodontic treatment depends on an adequate chemo-mechanical cleaning and shaping of the root canal system followed by its tridimensional obturation. Most mandibular molars have two roots (97%) [4], namely the distal and the mesial, but deviations may occur. The presence of an additional distolingual root is called Radix Entomolaris and was first described by Carabelli [1,3].

CASE REPORT

CLINICAL: Male, 41 year-old, non contributory medical history. Presented at the dental appointment with the following complaints: "pain with hot and cold and at times constant"
Pulp sensitivity tests: thermal testing of tooth 36 with cold application induced pain that lasted for over 60 sec after stimuli removal (Cloredex ® Basi Laboratórios ®) [5]
Percussion test: negative vertically and horizontally

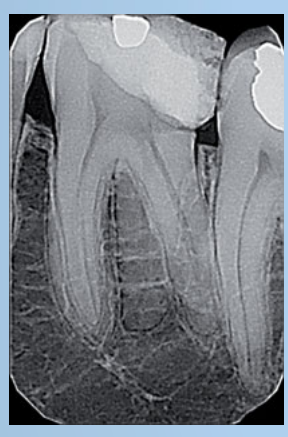
DIAGNOSIS: Pulpal – Irreversible pulpitis
Periodontal – normal, with no signs of inflamation

TREATMENT PLAN: Non surgical endodontic treatment and direct resinous restoration

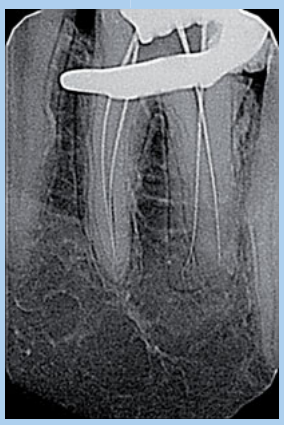


X-ray shows an additonal distolingual root on tooth 36

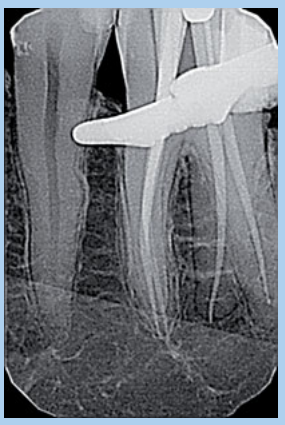
CLINICAL PROCEDURE



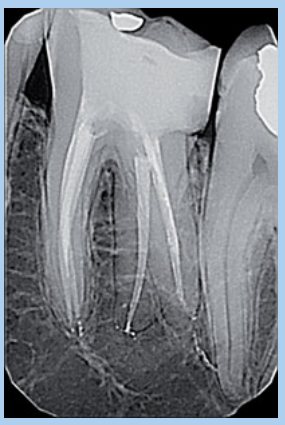
INITIAL
12-2016



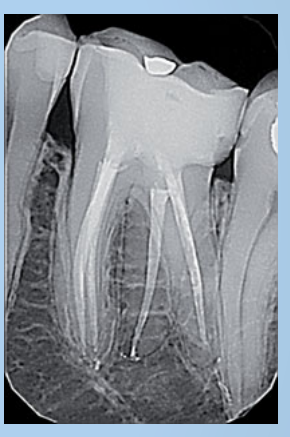
WORKING LENGHT MEASUREMENT



CONOMETRY



FINAL



FOLLOW UP
04-2018

The root canals were instrumented with ProTaper Gold (Dentsply Maillfer)[6] until F2 (25.06), following this sequence: Sx-10k-S1-10k-S2-10k-F1-10k-F2. For root canal system disinfection it was used NaOCl 5,25%, citric acid 10% and alcohol 96º with sonic activation. The termoplastic obturation was performed by Tagger´s Hybrid Tecnique[7] with gutapercha and sealer based on epoxy-amine resin (AHPlus, Dentsply). It was performed the intraorifice sealing with flowable composite and the tooth was restored with composite resin.

DISCUSSION

Failing to identify a canal is one of the main reasons for an unsuccessfull outcome of an endodontic treatment. In order to clinically recognize a Radix Entomolaris it is required a thorough evaluation of the dental crown anatomy and pre-treatment radiographs with a diferente angle. An additional cusp or an obscured view of the distal root outline can indicate the presence of a Radix Entomolaris. Ideally a CBCT would be taken to confirm the presence of this deviation[2].
In such cases a trapezoidal access cavity opening should be performed. Straight line access to the root canal system is required in order to achieve proper cleaning, shaping and obturation. The Radix Entomolaris is usually smaller than the distal root and frequently present a pronounced curvature in the coronal third, with lingual orientation. An invasive instrumentation may lead to separated instruments, apical transportation and root perforation.

CONCLUSION

Clinicians must be aware of anatomical deviations as Radix Entomolaris. This presentation describes how to approach such cases through proper clinical and radiographic diagnosis, with an x-ray protocol of well-oriented and angulated radiographs, an adequate access cavity opening and shaping of the root canal system in order to promote the success of endodontic treatment. It is strongly advised to take 3D cone beam images such as CBCT in case of doubt.

REFERENCES

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