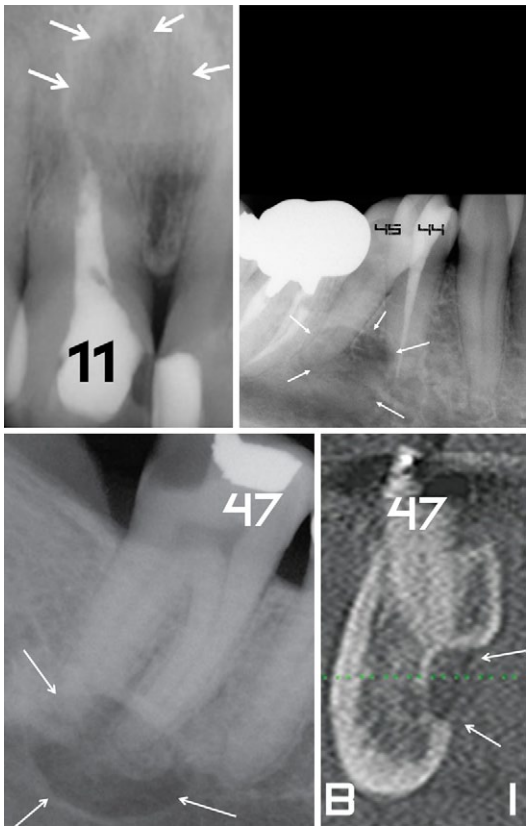
RICHMOND
ENDODONTIC CENTRE

ONE IN TEN

MAY 2016



One in ten radiolucencies in the jaw is not a lesion of endodontic origin. This newsletter reviews some of the radiographic clues differentiating non-odontogenic and odontogenic lesions.

Active bacterial colonies in either a necrotic pulp or previously treated canal system cause apical endo lesions. These are closely associated with the apex and that proximity will remain constant regardless of the angle of the periapical radiograph. A non-odontogenic lesion is suspected if the lesion position in relation to apex is different for various angled PA's. This speaks to the importance of always taking at least two, unique angle, pre-op PA's for every potential endo case. Typical characteristics of a lesion of endodontic origin are:

- Disrupted lamina dura
- Radiolucent core, never radiopaque
- Almost 100% unilocular
- Almost never associated with >1 tooth
- Well defined border for chronic, often asymptomatic cases
- Diffuse border for acute, symptomatic lesions

Benign non-odontogenic lesions can easily be confused with endo lesions. These include cysts, neoplasms, and fibro-osseous lesions. The PA of the 11 on the right is of nasopalatine cyst overlapping the apex of 11. Perhaps the original RCT was not necessary? Characteristics of benign lesions include:

- Often a well-defined border
- Uni- or multi- locular
- Radiolucent, radiopaque, or mixed
- Ameloblastoma can induce cortical plate expansion and have ill-defined boundaries

Advanced malignant tumours can appear as moth-eaten radiolucencies or irregular poorly defined radiopacities. It is important to identify these lesions early. The PA of the lesion in quadrant four is of a metastatic cancerous lesion which was the subject of the March 2011 newsletter. The radiographic features of malignant lesions are:

- Diffuse radiolucent image with widened apical PDL's for one or more teeth
- Often multilocular
- 'Sun burst' appearance on occlusal radiographs
- Elevated periosteum (Codman triangle) on CBCT images
- Irregular resorption of roots (i.e. 'floating teeth')

Stafne bone cavities should be suspected if there is a radiolucent lesion just anterior to the mandibular angle and below the mandibular canal. However, it can occur more anteriorly and be closely associated with root apices; this is a significant diagnostic dilemma. The PA of the 47 above is of a Stafne bone cavity that could easily be misdiagnosed, especially if the pulp was non-responsive to vitality tests. Angled PA's can help identify these radiolucencies as non-odontogenic. In this case, from the literature, a cone beam CT confirmed the diagnosis.

It is important to take at least two angled PA's for every apical lesion and closely scrutinise the radiographic features. There is always a 10% chance the radiolucency on a PA could be something other than an endo issue.

Regards,

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