

# Do periapical radiographs tell the whole tale: a case report

Daniel Flynn discusses the limitations in radiography

As clinicians, radiography provides us with a wonderful tool to "see through" external oral structures, giving us an

insight into what's happening beneath the skin, muscle and bones. Ionising radiation is transmitted through the structures. Dense ma-

terials absorb more radiation resulting in an image produced on a film or digital receptor. The image is then interpreted and in conjunc-

tion with a thorough history and extensive oral examination aids in the diagnosis, treatment or prevention of disease. The decision mak-

ing process of when and how often to take radiographs is a challenging one. The periapical radiograph has been the gold standard for assessing the presence of endodontic pathology for years. A periapical radiograph should be taken when;

- 1 There is a history of pain with a tooth
- 2 Caries, cracks or a deep restoration are present
- 3 There is a negative response to sensitivity tests

Teeth with extensive restorations and/or that are compromised periodontally.

It is well understood that periapical radiographs underestimate the presence of apical pathology. On studies from cadavers, periapical lesions were simulated in the bone and were gradually increased

*"The periapical radiograph has been the gold standard for assessing the presence of endodontic pathology for years"*

in size until they became apparent on radiographs. It was found that until the lesion was in contact or perforated the cortical bone the lesion was not detected radiographically. With the advent of small volume cone-beam CT we now have a tool which is much more accurate at correctly diagnosing apical pathology. A recent study (1) suggests that periapical radiographs can detect the presence of apical periodontitis 55per cent of the time while a DPT detects the disease 28per cent of the time. This explains a common clinical finding of obvious pathology associated with a tooth following clinical examination (for example a tooth is tender to percussion and has negative sensitivity responses) however the radiograph appears to be within normal limits.

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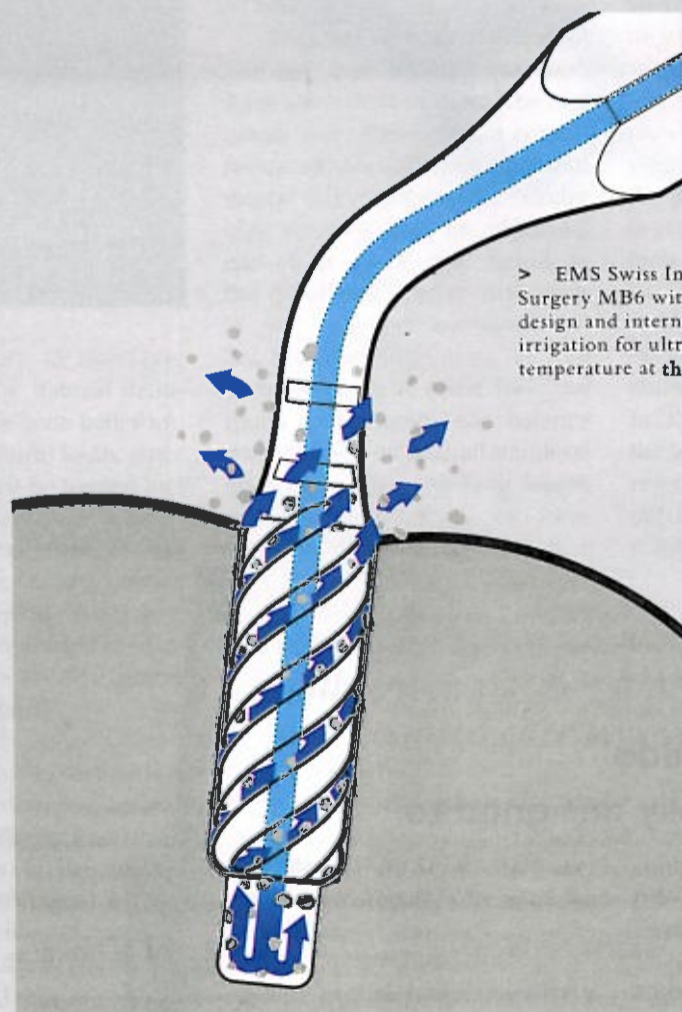
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