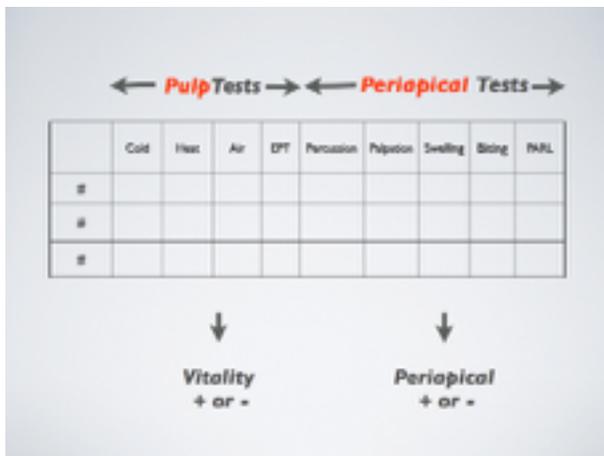


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Endodontic Diagnostic Procedures

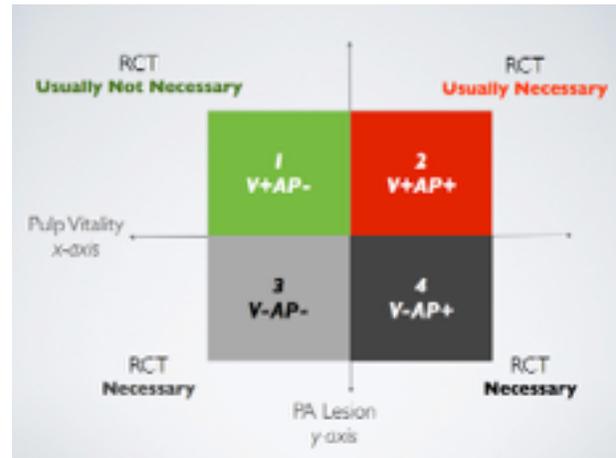
Endodontic diagnosis requires careful data collection and analysis to determine the status of pulp and periapical tissues. Once the status of pulp vitality and the presence of the periapical lesion is determined, proper treatment plan can be projected with prognostication. Polymicrobial infection causing the cascade of inflammatory response, including osteolysis, is the basic biological process of the endodontic pathogenesis.



The status of pulp can be determined by using cold and electric pulp tests. In general, positive response to cold test indicates vital pulp and negative response to electric pulp test indicates necrotic pulp. The status of periapical tissue is determined by percussion and palpation tests. Radiograph is a key diagnostic tool for assessing periapical tissue. However, 2D radiograph has limitations. The new 3D CBCT imaging can provide more accurate assessment of periapical tissue through its ability to scan the tissue in thin sections without the superimposition of anatomical structures, such as buccal cortical plate and maxillary sinus.

Data base collected through diagnostic testings are organized and documented in the table above in order to determine of the pulp vitality (V) and the presence of periapical (PA) inflammation. The combination of the status of pulp and periapical tissues can be categorized as a square in the diagram, where the x-axis represents the pulp vitality (V) while the y-axis represents the periapical lesion (AP).

Endodontic Diagnostic Squares



Treat or Not to Treat

When pulp is vital and there is no apical periodontitis as in square 1, RCT is generally unnecessary. When pulp is vital with signs of apical periodontitis as in square 2, RCT is usually necessary in order to eliminate the symptoms. This category usually indicates the progression of pulpal inflammation producing the periapical inflammation. After the conclusion of inflammatory process, pulp tissue may become necrotic without the presence of periapical lesion as in square 3 or periapical lesion may develop as in square 4. RCT is necessary regardless of the presence of the apical periodontitis in order to eliminate the microbial infection.

How Successful?

RCT performed in vital pulp without PA lesion has higher success rate (96%) than RCT performed in necrotic pulp with PA lesion (86%) according to Sjogren (J Endo 1990).



Diagnostic Confidence

Making the right call in the presence of confusing orofacial pain can be difficult but is essential in providing the precise relief for the patients. Proper analysis on a set of quality diagnostic data leads a clinician to a higher diagnostic accuracy. Diagnosis is the first step towards cure. Diagnostic process is usually the beginning point of building rapport between the doctor and the patient. Accurate diagnosis will build confidence in patients and doctors in their efforts to find the mutually successful outcome.