

# The Problems With "Wait and See" Endodontics

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In the past, endodontic treatment was performed on very simple, selective and straightforward cases — mostly anterior teeth and a few simple posteriors. Endodontic surgical techniques were in their infancy. Failing endodontically treated teeth were extracted, and retreatment was seldom attempted. Extraction of the tooth and replacement with a bridge, if possible, was the norm. The standards for successful endodontics varied widely. Universal criteria for endodontic success did not exist. Clinicians, therefore, had few alternatives but to do the best they could under the circumstances and then "wait and see" if the treatment rendered would ultimately prove successful.

Symptoms such as pain, swelling, periodontal drainage, tooth mobility, tooth discoloration and radiographic lesion formation were the most universal standards used to determine endodontic success or extraction. If symptoms did not develop, endodontic treatment was judged successful. This practice gave rise to the "wait and see" approach, which initially appeared to work. Endodontic periapical disease is a slow osseous disease, and endodontic failures may require years to manifest observable symptoms: some endodontic failures remain entirely symptom free. Hence, many endodontic failures were deemed "successful" simply because they were "asymptomatic."

The "wait and see" approach is a default, empirical course of treatment in which "anything goes." Treatments that fail to meet the current biologic and technical standards of endodontic care are accepted and patients are "observed and recalled" until symptoms develop. At that point, corrective treatment is rendered on an "as needed" basis, with symptomatic teeth —

the proverbial "squeaky wheels" — receiving additional therapy or extraction. In the "wait and see" approach, asymptomatic failures are ignored, calcified canals are considered "nature's fillings" and radiolucent lesions are "apical scars"; broken instruments become part of the filling; and untreated canals are "mummified." The "wait and see" approach sanctioned inadequate and incomplete endodontic techniques, such as paste fillers and mummification methods, and helped foster their prevalence in the 1970s. *Those who "wait and see" hope for time to repair what the clinician could not complete or the damage caused by clinical incompetence.*

Because there were no alternatives, as well as its appealing simplicity and ability to cover up for a multitude of "sins," and in spite of its lack of biologic foundation, the "wait and see" philosophy in patient care dominated the practice of endodontics for decades.

The "wait and see" approach led the profession to the focal infection era in the early 1900s, when pulp capping was the only endodontic treatment practiced. When that failed, it caused periapical lesions that led to the infamous "mausoleums of gold over pools of sepsis." *Today, the "wait and see" approach in the management of poor quality endodontics will lead us to the same fate: the ignorant will condemn endodontics as a treatment modality rather than condemning poor endodontics.*

Although the consequences of "wait and see" were acceptable to patients in the past, with today's increased public awareness, consumerism and health education, patients are more involved in their healthcare and treatment options and demand optimal care with predictable, consistent and "problem free" results ... results that cannot be predictably achieved through the "wait

and see" approach. Generally speaking, patients demand treatment that is **correct and complete**, so they don't have to return with the same problem at a later date.

## Periapical Complications

Poor quality endodontic treatment will eventually fail, leading to the destruction of the periapical and periodontal bone and the formation of osseous lesions such as periapical and periodontal abscesses, apical cysts, periapical granulomas and osteomyelitis. Initially, all these conditions are impossible to visualize on the radiograph, and often are asymptomatic. Later they become invasive, causing bone loss, root resorption, periodontal defects and symptoms. (figures 1 & 2) The treatment of these advanced periapical complications often requires some form of periapical or periodontal surgery as nonsurgical endodontic retreatment alone will be ineffective. Periapical lesions may communicate with periodontal defects, creating a situation in which the supporting bone structure is destroyed, making conservative endodontic and periodontic therapy impossible. Periapical lesions of maxillary posterior teeth often invade and hide in the maxillary sinus and expand to large proportions. Such lesions remain radiographically invisible due to the thickness of the cortical maxillary bone and overlapping of the maxillary sinus space and the lesion.

Most of this pathology occurs without symptoms. Pain will manifest only when infection develops and the pathology is at the most advanced phases. The periapical lesion may extend and grow extensively in the maxillary sinuses, thus escaping radiographic detection. It also may grow in close proximity to the nares, or pressure the mandibular and mental

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nerves. Other lesions may develop at periapical locations, destroying much of the maxillary and mandibular alveolar bone and causing large bony defects that may not heal by standard endodontic surgical methods, requiring osseous augmentation and bone implants to promote bone healing at the site.

### Periodontal Complications

Endodontic failures often result in chronic periapical osseous lesions that affect the supporting periodontal tissue and may drain coronally, causing furcation problems and osseous defects that mimic periodontal disease. In addition to the possible misdiagnosis and mistreatment of these defects, valuable supporting bone is often lost, jeopardizing the prognosis of the restorative work. Additionally, some periapical lesions become so extensive that they communicate with existing periodontal disease, leaving serious and surgically untreatable combined endodontic/periodontic lesions due to the loss of alveolar bone protecting the root structure. Such terminal defects may have been avoided entirely had the endo/perio lesion been treated early and not allowed to develop or progress.

### Restorative Complications

The interdependence between the restorative, endodontic and periodontic disciplines is evident. The success of any restorative treatment will ultimately depend on healthy pulps, successful endodontic therapy and a healthy periodontium. The "wait and see" approach often delays the completion of restorative work because of fear of endodontic or periodontic failure. Once the restorative treatment is completed on compromised endodontic foundations, the "wait and see" countdown begins. If the endodontic therapy was inadequate or incomplete, symptoms usually develop within months or years. Then the frustration of retreatment through existing restorations or apical surgery takes place. Regardless of the nature of the corrective endodontic therapy through existing restorations, there is always

the risk of damaging the restorative work mechanically, biologically, functionally or esthetically. Additional increased risks caused by restricted access include incomplete endodontic instrumentation or missing the cause of previous endodontic failure. (figures 3a-c)

*Modern dentistry is not predicated solely on the care of symptomatic teeth. Each of the dental specialties has treatment and protocols that incorporate a large emphasis on preventive care.* In restorative dentistry, sealant use is widespread. Caries, open restorative margins and defective restorations are rarely initially symptomatic but are, nevertheless, widely recognized as needing restorative intervention. Periodontal therapy is usually rendered on asymptomatic pathology and its emphasis on prevention is well-known. Oral surgeons routinely extract asymptomatic third molars and prosthodontists seek to make CR/CO coincident in the absence of symptomatic pathology.

Endodontics, too, has advanced beyond the treatment of symptomatic teeth to comprehensive treatment taking into account the long-term best interests of the patients and the restorations supported by the endodontic foundations. In modern dentistry, with so much at stake for the patient and general dentist, it is difficult to justify dual standards of restorative "excellence" built on endodontic "mediocrity" simply because of the lack of immediate symptoms and the prevalence of substandard endodontic therapy.

It has been common to perform extensive and expensive restorative treatments on teeth with poor quality endodontics on the basis of a "wait and see" attitude that corrective endodontic treatment could be done later when, and if, symptoms developed. The fallacy of this philosophy is well-known to clinicians who have attempted endodontic treatment and post removal through existing restorations.

Endodontics through existing restorations may pose diagnostic and treatment problems for all practitioners, irrespective of clinical experience

level. Existing restorations may prohibit the clinician from finding the true cause of failure. Restorations left in place when performing endodontic therapy may hide canals, fractures, perforations or "strips," and dramatically increase the chance of perforations occurring during canal location. Restricted access also causes ledging and apical transportation ("zips") and increases the chance of packing metal filings in the canal.

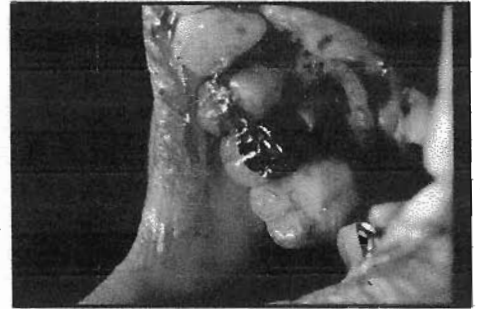
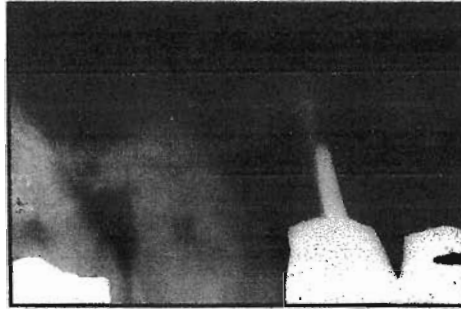
Endodontic access may damage the foundation that is holding the restorative treatment either mechanically by weakening/undermining the coronal tooth and buildup or by a significant decrease in the crown's retention. McMullen<sup>1</sup> reported anterior crowns that were accessed endodontically exhibited an average 60.7 percent loss of retention compared with their unaccessed retention. Clinicians, therefore, need to weigh the risks of retaining many of these retentively weakened crowns against the potential improved endodontic results facilitated by their removal.

### Patient Management Complications

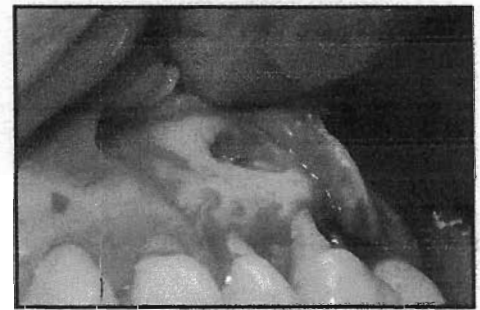
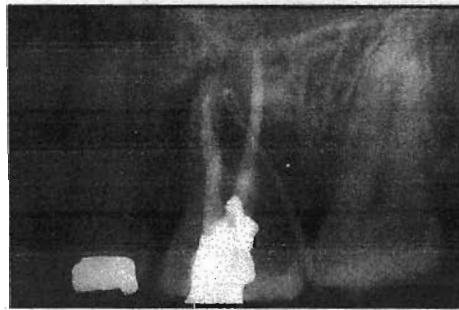
Endodontic failure symptoms are slow to develop, often taking years to manifest. Effective recall for this length of time is impractical. Patient relocation, medical conditions, changes in insurance coverage and normal patient attrition conspire against it. Obviously, clinicians have no control over a patient no longer in their practice. For patients remaining in the practice, patient compliance for endodontic recall follow-up is notoriously poor — probably less than 10 percent. Additionally, patients may no longer have the financial ability or insurance coverage to pay for the necessary care at some future date when corrective treatment is no longer "avoidable." Despite the apparent "excusability" of the clinician losing control of the patient and incomplete treatment, the clinician is usually "tried in absentia." Subsequent treating dentists do not usually take the time to inquire of the original treating doctor as to the reasons for the substandard endodontic treatment; inferences are drawn and

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# 3 Examples of Wait and See Failures



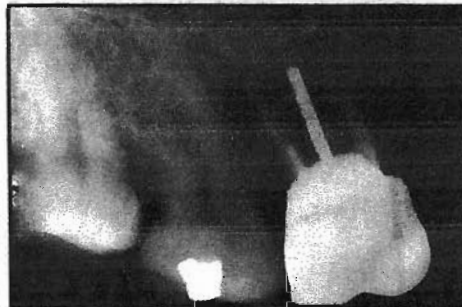
**Figures 1A & B.** Endodontic failure that eventually caused a mesial radiographic lesion. Surgical exploration, however, revealed massive palatal bone destruction that eventually led to two unsuccessful periapical and periodontal surgeries.



**Figures 2A & B.** Endodontic failure (short Mb and strip) on #14, causing a large periapical lesion which eventually connected with the periodontal lesion on the DB root, leading to total loss of the cortical bone on the DB root and very little bone on the MB root.



**Figure 3A.** The MB root is curved apically and filled short. The DB root is adequate, but there is a retentive pin next to the canal. Endodontic therapy was completed in 1977 and the tooth was asymptomatic and restored in spite of incomplete canal fill.



**Figure 3B.** The patient returned with pain. However, the x-ray did not reveal any changes. The patient complained for three years, then changed dentists. Observe the lesion on the MB.



**Figure 3C.** Surgical exposure of the area demonstrated loss of buccal bone over the MB root and furcation and mid the DB root. This situation could have been prevented by early exploratory and reparative surgery prior to the placement of the gold restoration and prior to infection spread and massive bone loss.

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judgements made about the original dentist's treatment. This does not enhance professional reputations, which often have taken many years to achieve.

When patients are given the option of making treatment decisions, they usually prefer to trust the doctor's opinions, recommendations and experience. When patients agree on the "wait and see" approach, it is because it is usually the choice of the clinician or because the consequences of waiting were not fully explained. Patients usually have short or selective memories when later problems arise, often forgetting why they are waiting and why the needed treatment was postponed, as well as any disclaimer(s) made by the clinician at the time of the initial therapy. Many patients interpret the exacerbation of a chronic "wait and see" treatment as a treatment failure, often demanding reimbursement or free additional therapy.

The clinician's effectiveness and rep-

utation is at its best when the patients' dental problems and chief complaints are successfully and fully treated and resolved on a permanent basis. Patients desire dental and medical care that is performed correctly and accurately so there will be no subsequent intervention or relapses requiring "redoing" the treatment or necessitating additional treatment. Most patients are psychologically prepared to deal with the indicated treatment to resolve their problem **once**. They are **not** happy to deal with the rigors of treatment a second or third time. Nor are patients happy to have expensive restorations destroyed and replaced because of the additional reparative therapy. Patients frequently wonder why their treatment was not completed or done "right" the first time. Although "wait and see" is less demanding at first and offers initial convenience, in the long run, the "wait and see" approach does not promote either good doctor/patient rapport or good practice management.

"Wait and see" as a practice approach to complex endodontic treatment evolved from endodontic misconceptions and a lack of better treatment alternatives. It is a reactive, random, crisis-oriented, "failure-driven" approach that operates from assumptions and relies on exhausting ways to fail rather than providing proactive, systematic care with the highest predictability and success. The "wait and see" approach following incomplete, compromised or poor endodontic therapy is frustrating, unpredictable and is certainly below the standards of care usually expected from skillful and qualified clinicians. CDA

### References

1. McMullen III, A.F., Himel, V.T. and Sarkar, N.K., An in vitro study of the effect endodontic access preparation has upon the retention of porcelain fused to metal crowns of maxillary central incisors. *J Endod*, 1989; 16(4):154-566.

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