Predictable and minimally invasive removal of separated instruments

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Abstract:

Retrieval of separated instruments from the root canal system can be challenging and often frustrating. When a NiTi instrument fractures, it usually occurs at the apical one-third of the root canal, or beyond a curve in the canal. Consequently, the separated instrument often prevents the clinician from successfully preparing the entire root canal system, thereby resulting in compromising the treatment outcome. Although the reported success rate of instrument retrieval using ultrasonics is high, the nonstandardized protocol is still unpredictable in terms of removal time. Additionally, a major disadvantage of the traditional mechanical methods for instrument retrieval is the excessive removal of sound dentin during retrieval attempts, which may lead to iatrogenic accidents such as perforation and/or ledge formation. A recent study has shown that instrument retrieval is highly predictable if the standardized protocol is followed. In this presentation, the treatment planning based on CBCT imaging and the predictable and minimally invasive instrument retrieval protocol will be demonstrated and discussed.

At the conclusion, participants should be able to:

1. Describe the accurate diagnosis and treatment plan for safe instrument retrieval.

2. Make a predictable and minimally invasive preparation for instrument retrieval.

3. Recognize the most predictable and minimally invasive removal procedures of separated instruments.