



**Japan Association
of Microscopic Dentistry**

The 20th Annual Meeting & Scientific Session Hands-on Seminar

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Predictable and minimally invasive removal of broken instruments

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An instrument fracture is very frustrating. Instrument retrieval is even more frustrating and considered more challenging than any other procedure in endodontics. The literature shows that when NiTi instruments fracture, they mostly fracture in the apical one-third or beyond a curve of the canal because of the superelastic property of NiTi instruments. Although the success rates of instrument retrieval with ultrasonics alone are very high in the range of 80 to 90 %, ultrasonic retrieval attempts are deemed to be unpredictable in terms of time and dentin sacrifice. It is also essential to maintain as much tooth structure as possible to prevent root fracture and perforation. In the workshop unique techniques for instrument retrieval using a new "TFRK" will be proposed and discussed to make the instrument retrieval highly predictable and minimize dentin sacrifice. The proposed instrument retrieval technique is also supported by a recent study published from JOE because of predictability and higher success rates compared to the traditional techniques.

Objectives.

Participants who attend this workshop will be able to

1. describe how to make an accurate diagnosis for instrument retrieval
2. make a predictable treatment plan for instrument retrieval
3. understand the concept of instrument retrieval
4. make it minimally invasive and predictable to prepare the canal for instrument retrieval
5. choose the best technique to make the removal attempts successful