



## **Dr. Yoshi Terauchi D.D.S., PhD**

Dr. Terauchi is a part-time lecturer at Tokyo Medical & Dental University and maintains a private practice limited to endodontics since 1998.

He earned his DDS in 1993 and completed his residency at Tokyo Medical & Dental University in 1995, where he also received his PhD from the Department of Endodontics. He has published several articles in peer-reviewed journals nationally and internationally. He also authored in several chapters in textbooks including 11th edition of “Pathways of the Pulp”. He has lectured nationally and internationally and was exposed twice on National TV, for modern endodontics.

Private practice in Tokyo since 1994.

2001: Presidential Award by JEA.

2008: Wakai award by JEA.

2007: Part-time Lecturer at Tokyo Medical & Dental University, department of Endodontics.

**Abstract Paper:**

**Title: The most predictable technique to remove a separated instrument**

One of the iatrogenic accidents in endodontic treatment is an instrument fracture within the root canal system. More than 80% of instruments fractured in root canals are reported to be NiTi. A NiTi instrument fractures mostly in the apical one-third or beyond a curve in the canal because of the superelastic property. An instrument fracture is very frustrating and instrument retrieval is considered to be even more challenging in endodontics than any other part of endodontic procedure. In addition, the instrument fracture immediately hinders the clinician from performing further treatment, and thus the outcome of the treatment will be compromised. Although the success rates of instrument retrieval with ultrasonics are in the range of 80 to 90 %, ultrasonic retrieval has never been 100 % successful. It is also deemed to be unpredictable as the instrument removal time has been reported to range from a few minutes to over 60 minutes even in successful cases because no standardized technique for successful instrument removal has been established. Ultrasonic removal attempts especially from the apical one third of a curved canal often result in a significant amount of dentin sacrifice. On top of that, aggressive use of ultrasonics could lead to perforation and secondary fracture especially around a curve. It is very crucial to safely remove a fractured instrument. Now a novel instrument retrieval kit (TFRK) has been developed to both minimize dentin sacrifice and the time required to remove a fractured instrument and maximize the success without causing iatrogenic events. The recent literature has shown that the instrument retrieval with TFRK was predictable and the time to retrieve a fractured instrument was significantly less with TFRK than that with ultrasonics alone. The unique procedures as well as a standardized technique in combination with CBCT for instrument retrieval will be shown and discussed using contemporary concepts.