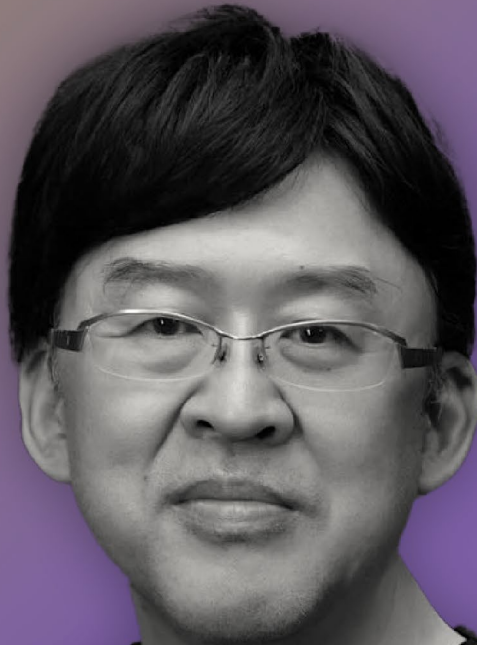




Innovation In Endodontics:
the Art of Non-Surgical Retreatment

MASTERCLASS

Yoshi Terauchi

Innovation in Endodontics: the art of non-surgical retreatment

By Dr. Yoshi Terauchi



SUMMARY



Topic:

Discover the latest update in non-surgical retreatment, MTA obturation and broken file removal



Objectives:

Advanced diagnosis techniques, including CBCT imaging for accurate assessment
MTA obturation protocols versus traditional gutta-percha fillings
Techniques to bypass non-visible ledges with innovative fan-shaped tips and slow rotation methods
Removal of gutta-percha and MTA filling materials using ultrasonic and rotary instruments
Management and removal of broken instruments, including fractured files in curved canals
Live microscopic demonstrations illustrating practical application of all techniques
Accurately diagnose complex endodontic cases with advanced imaging tools



WHY TO ENROL:

- 1- Master the removal of broken instruments:
Learn step-by-step protocols, including the use of ultrasonic tips and specific preparation techniques, for both visible and non-visible fractured files even beyond severe
- 2- Bypass challenging ledges with precision:
Understand and apply advanced techniques such as the 90 degree T-mode and fan-shaped tip strategies for safely bypassing non-visible canal ledges.
- 3- Improve retreatment outcomes with MTA:
Discover why MTA obturation can outperform gutta-percha in nonsurgical retreatments, with detailed guidance on canal preparation and obturation techniques.

LEVELS

Difficulty Advanced

Theory ●●●●●

Practice ●●●●

KEY INFO



English



On Demand



Endodontics



13h



11 video lectures + 6 ReLIVE DEMO

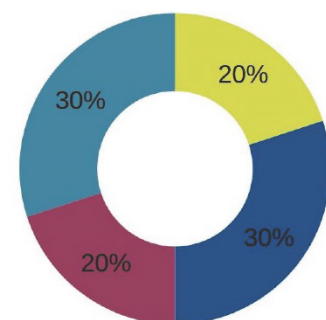


Clinical Yes



NO

SKILLS YOU WILL LEARN



- Broken Instruments Removal
- Diagnosis and Treatment Planning
- Efficiently bypass ledges
- MTA Obturation



Channel Description:

Dr. Yoshi Terauchi, one of the **most renowned endodontists** in the world, welcomes you to this new learning experience; a recorded session of the **prestigious training held in Rome** and organized by **Dentoki**. The event attracted hundreds of participants from 32 countries, reflecting its **global impact** and **recognition** in the field of endodontics.

The course provides an in-depth focus on the **technical challenges** frequently encountered in endodontic retreatments. Key topics include the use of **MTA** as a superior **obturation material** compared to traditional gutta-percha, advanced **diagnostic protocols** utilizing **CBCT imaging**, and step-by-step techniques for effectively **removing gutta-percha** and **MTA fillings**.

Special emphasis is placed on innovative methods for **bypassing non-visible ledges** using newly designed **fan-shaped tips** and slow rotation techniques. Additionally, the course covers the complex management of **broken instruments**, detailing **ultrasonic** and **rotary approaches** for safe and efficient retrieval, even in severely curved canals.

A unique feature of this course is the series of **ReLIVE DEMO** performed under the microscope on simulation models. These practical sessions showcase **real-time problem solving** with all the procedural difficulties.

Participants will leave with not only deep theoretical knowledge but also techniques to **improve retreatment outcomes, reduce surgical interventions**, and confidently tackle the **most complex endodontic challenges**.

In particular, this course will focus on:

- **Advanced diagnosis techniques**, including CBCT imaging for accurate assessment
- **MTA obturation** protocols versus traditional gutta-percha fillings
- Techniques to **bypass non-visible ledges** with innovative fan-shaped tips and slow rotation methods

- **Removal of gutta-percha** and **MTA filling materials** using ultrasonic and rotary instruments
- Management and **removal of broken instruments**, including fractured files in curved canals
- ReLIVE microscopic **demonstrations** illustrating **practical application** of all techniques

At the end of the course, you'll be able to:

- Accurately diagnose **complex endodontic cases** with advanced imaging tools
- **Select** and **apply** appropriate **obturation materials** and protocols for retreatment
- Efficiently **bypass ledges** and manage challenging canal anatomies
- Safely **remove gutta-percha**, MTA, and broken instruments from root canals
- Develop strategic **treatment plans** supported by clinical flowcharts and decision-making protocols

Who is the course for?

This course is ideal for **endodontists** who want to improve their skills in managing **complex retreatment cases**. It's recommended for clinicians facing challenges like broken instruments, ledges, and difficult obturations, offering practical, advanced techniques from a world-renowned expert to enhance treatment success.

Ok, but how does it work?

This **13 hour** course is divided into **11 video lectures** and **6 ReLIVE DEMO** that you can find by accessing your personal osteocom area from any device and downloading from the osteocom mobile app, available on iOS and Android.



Video Lecture 1 - Course introduction (7min)

Description:

The first video lecture of the course is dedicated to a **brief presentation** of the topics that will be covered in the following sessions.

Video Lecture 2 - MTA-based protocols and key strategies for successful endodontic retreatment (1h 23min)

Description:

In this video lecture, Dr. Terauchi presents a comprehensive protocol for **successful endodontic retreatments**, developed over years of clinical experience in treating complex cases. The session focuses on cases where **retreatment is the preferred choice**, with particular emphasis on accurate diagnosis, non-odontogenic pain, and the use of **MTA** as the **exclusive obturation material**.

The lecture delves into the technical aspects of **bypassing ledges** and **retrieving fractured instruments**, as well as **MTA-based obturation techniques**. A significant focus is dedicated to understanding **pain** and its implication in post-treatment outcomes.

Dr. Terauchi also shares his clinical data, showing that the consistent use of MTA has **drastically reduced** the need for **surgical intervention**.

By the end of the session, clinicians will gain valuable insight into **diagnosing challenging cases**, managing persistent pain, and maximizing the success rate of non-surgical retreatments through structured, **evidence-based protocols**.

In particular, this lecture focuses on:

- Standardized protocols for retreatment, with **MTA** as the exclusive **canal filling material**
- Techniques for **bypassing canal ledges** and removing broken instruments
- Accurate **diagnostic criteria** to distinguish odontogenic vs. non-odontogenic cases
- The **role of pain** assessment and management in improving retreatment outcomes

Video Lecture 3 - Accurate diagnosis in endodontics: from lesion identification to treatment planning (1h 28min)

Description:

This video lecture explores the critical importance of **accurate diagnosis** in **endodontic retreatment** and its direct influence on treatment outcomes.

Through detailed **clinical** and **radiographic criteria**, Dr. Terauchi guides clinicians in distinguishing between **endodontic** and **periodontal lesions**.

Special attention is given to **primary endodontic lesions** with secondary periodontal involvement, the **diagnostic implications** of furcation canals, and the different types of tissue damage (**mechanical, chemical, and inflammatory**) affecting pulp and periapical health.

The lecture highlights the added diagnostic value of **CBCT imaging**, particularly in revealing hidden lesions, anatomical complexities, and influencing retreatment protocols.

In particular, this lecture focuses on:

- Differentiation of **endo-perio lesions** and identification of primary endodontic involvement
- **Mechanical, chemical, and inflammatory causes** of pulpal and periapical damage
- Diagnostic value of **CBCT imaging** in detecting lesions and anatomical variations
- Role of accurate diagnosis in **guiding retreatment strategies** and **infection control**

Video Lecture 4 - Removal of Gutta-percha root fillings (28min)

Description:

This focused lecture addresses the **limitations of gutta-percha** as a **root canal filling material** and its implications for **long-term endodontic success**. Despite being widely used, gutta-percha lacks intrinsic antibacterial properties and can easily become contaminated by **biofilm-forming bacteria**.

Dr. Terauchi discusses how fillings that appear radiographically adequate, reaching the canal terminus, do not always result in **healing**, especially if **infected gutta-percha** remains within or beyond the canal. The lesson

explores how such contamination is a common cause of **persistent apical periodontitis** and underscores the importance of thorough **disinfection** and **material selection** during retreatment procedures.

This session provides valuable insights for clinicians aiming to **improve success rates** by moving beyond traditional materials and adopting biologically sound treatment approaches.

In particular, this lecture focuses on:

- The **biological limitations** of gutta-percha in preventing reinfection
- The role of **biofilm contamination** in persistent apical periodontitis
- Why radiographic adequacy of **root fillings** doesn't guarantee healing
- Critical considerations for **material choice** in **endodontic retreatment**

Video Lecture 5 - How to remove the gutta perca filling materials (21min)

Description:

This **hands-on LIVE DEMO session** complements the previous theoretical lecture by showing the clinical application of **gutta-percha removal techniques** on a simulation model.

Dr. Terauchi demonstrates step by step **how to efficiently remove gutta-percha** using a **dedicated kit**, combining manual and ultrasonic instruments.

The session focuses on real-time handling of **hand files** and **three different ultrasonic tips**, offering practical guidance on how to approach complex retreatment cases where existing filling materials must be eliminated with precision.

This live demonstration provides clinicians with a **clear** and **replicable protocol** to improve efficiency and predictability during the gutta-percha removal phase of endodontic retreatment.

In particular, this lecture focuses on:

- Introduction and use of the **gutta-percha removal kit**
- **Manual techniques** with specialized hand instruments

- Application of **three ultrasonic tips** in different clinical situations
- Step-by-step protocol for **effective** and **safe gutta-percha extraction**

Video Lecture 6 - Root filling materials removal (49min)

Description:

This detailed video lecture focuses on advanced techniques for **removing set MTA obturation material** using **ultrasonic tips** combined with chemical agents such as **EDTA**.

Dr. Terauchi demonstrates how to effectively **disrupt** and **dissolve hardened MTA** within the canal, emphasizing the synergy between mechanical and chemical methods.

The lecture also covers protocols for **removing biofilms** by combining rotary and hand instruments with ultrasonic irrigation, ensuring thorough **canal disinfection**. Special attention is given to **managing ledged canals**, including the characteristics of ledge formation and the appropriate materials and techniques to bypass them safely.

Clinicians will gain a comprehensive understanding of how to **handle challenging retreatment cases** involving MTA and biofilm removal while maintaining canal integrity.

In particular, this lecture focuses on:

- Ultrasonic disruption of set MTA and **EDTA chemical dissolution**
- Combined **mechanical** and **ultrasonic techniques** for biofilm removal
- **Efficient irrigation protocols** for enhanced canal cleanliness
- Strategies and materials for **bypassing** and **managing ledged canals**

Video Lecture 7 - Demo for bypassing the ledges (1h 4min)

Description:

In this video lecture, Dr. Terauchi introduces **refined techniques** for **bypassing non-visible canal ledges**, an advanced challenge often encountered during retreatment procedures.

When pre-curving the tip becomes impractical, innovative solutions like the newly designed **fan-shaped ultrasonic tips** offer improved control and flexibility.

The session reviews three main techniques: the **hand instrumentation** technique, the **slow rotation** technique, and the **90-degree T-mode** approach.

Emphasis is placed on **file selection**, **rotational speed modulation**, and maintaining **tip alignment** with the original canal path to prevent iatrogenic damage.

Participants will discover **practical tools** and **strategies** to approach **ledge bypassing** with confidence and precision, even in the most complex root canal anatomies.

In particular, this lecture focuses on:

- Use of **fan-shaped ultrasonic tips** for navigating non-visible ledges
- **Hand instrumentation technique** and the importance of maintaining tip curvature
- **Slow rotation** and **90-degree T-mode** techniques for bypassing complex curvatures
- Selection of **files** and **insertion strategies** to preserve canal anatomy

Video Lecture 8 - LIVE DEMO: bypassing non-visible ledges: practical techniques on model (26min)

Description:

This **LIVE DEMO session** puts into practice the key techniques discussed in the previous lecture on **bypassing non-visible canal ledges**.

Using a simulation model, Dr. Terauchi demonstrates how to safely and effectively **navigate ledged canals** through a combination of hand instrumentation, controlled rotation, and fan-shaped ultrasonic tips.

The demo offers a step-by-step visualization of **instrument handling**, file selection, and tip orientation, providing clinicians with clear, actionable methods for maintaining the original canal path and minimizing procedural errors.

This hands-on session is essential for endodontists seeking to master **precision-ledged bypassing** in **anatomically complex retreatment scenarios**.

In particular, this lecture focuses on:

- Application of **hand instrumentation** and slow rotation techniques
- Use of **fan-shaped ultrasonic tips** to improve access and control
- **File selection** and insertion dynamics in ledged canals
- Practical strategies to **maintain the original canal trajectory**

Video Lecture 9 - MTA obturations in endodontic retreatment: a biological alternative to gutta-percha (1h 28min)

Description:

This lesson explores the **rationale behind the use of MTA** as a **root filling material** in **non-surgical endodontic retreatments**, offering a biologically superior alternative to traditional gutta-percha.

Dr. Terauchi analyzes the **limitations of gutta-percha** and **sealer-based fillings**, particularly their poor sealability and susceptibility to reinfection.

The session presents a direct comparison between the **clinical protocols** and **anatomical preparations** required for MTA versus gutta-percha obturation. Emphasis is placed on the **long-term benefits of MTA**, including enhanced biocompatibility, sealing ability, and its capacity to reduce the need for surgical interventions.

This presentation is particularly valuable for clinicians aiming to improve retreatment outcomes by integrating **more reliable** and **biologically stable materials**.

In particular, this lecture focuses on:

- Why **MTA obturation** is preferred over gutta-percha in retreatment cases
- **Limitations** of traditional **gutta-percha** and **sealer fillings**
- Step-by-step comparison: **MTA vs. gutta-percha preparation** techniques
- **Clinical benefits** and sealing properties of MTA in complex retreatments

Video Lecture 10 - LIVE DEMO: MTA obturations in retreatment: step-by-step application on model (18min)

Description:

In this **ReLIVE DEMO**, Dr. Terauchi shows the clinical application of **MTA obturation techniques** in **endodontic retreatments** using a simulation model. Building on the theoretical concepts presented in the previous lecture, the session focuses on how to properly prepare the canal system and deliver MTA with precision and control.

The demonstration contrasts the **procedural nuances between MTA and gutta-percha fillings**, highlighting the specific instrumentation and timing required for successful placement. Special attention is given to **handling MTA's physical properties** and ensuring a hermetic seal to optimize treatment outcomes.

In particular, this lecture focuses on:

- Clinical steps for **preparing the canal** for MTA obturation
- Techniques and instruments used to **place MTA effectively**
- **Differences** in handling and delivery between **MTA** and **gutta-percha**
- Key tips to achieve a dense and biologically **stable root filling**

Video Lecture 11 - Minimally invasive and predictable removal of broken instruments (1h 26min)**Description:**

This lecture explores the **critical factors** that influence the success of **broken file removal** in **endodontic retreatment**. Through the analysis of a challenging clinical case involving two **fractured instruments**, one visible and the other non-visible, both extruded into bone, Dr. Terauchi outlines the decision-making process that drives predictability and clinical outcomes.

A detailed comparison is made between **removal strategies for visible and non-visible fragments**, including **canal enlargement, ultrasonic tip usage**, and space creation along the inner canal wall. The lecture emphasizes the diagnostic importance of CBCT imaging for precise localization, length assessment, and treatment planning.

With a focus on **minimizing dentin loss** while **maximizing removal efficiency**, this session offers a step-by-step guide for clinicians aiming to master one of the most delicate procedures in modern endodontics.

In particular, this lecture focuses on:

- **Clinical criteria and imaging techniques** to plan fractured instrument removal
- Differences in approach for **visible vs. non-visible broken files**
- Step-by-step use of **ultrasonic tips** for conservative and effective removal
- The role of **retained instruments** in healing outcomes and retreatment success

Video Lecture 12 - Advanced ultrasonic techniques for removing non-visible broken files in severely curved canals (1h 2min)

Description:

This lecture focuses on the complex challenge of **removing non-visible broken instruments** located beyond severe canal curvatures, exceeding 30 degrees.

Dr. Terauchi presents **advanced ultrasonic instrumentation strategies** specifically developed to navigate and access fractured files in anatomically demanding situations.

Two preparation techniques are compared, **180-degree** and **90-degree** approaches, detailing the scenarios in which each method offers optimal visibility and access.

The lecture outlines **critical steps** for **conservative dentin removal**, tip positioning, and the precise manipulation of ultrasonic energy to safely dislodge fragments embedded deep within curved canals.

By mastering these **advanced techniques**, clinicians can significantly improve their success rate in fractured instrument retrieval while preserving tooth structure and minimizing iatrogenic damage.

In particular, this lecture focuses on:

- **180° vs. 90° canal preparation** techniques for fractured file access
- **Strategic removal of broken files** beyond severe canal curves
- Step-by-step application of **ultrasonic tips** in curved canal anatomy
- Clinical tips to **optimize visualization**, access, and **dentin preservation**

Video Lecture 13 - LIVE DEMO: Ultrasonic removal of non-visible broken files in severely curved canals (24min)

Description:

In this **ReLIVE DEMO**, Dr. Terauchi demonstrates the **clinical application** of **advanced ultrasonic techniques** for removing non-visible fractured instruments located beyond severely curved root canals. Using a **simulation model**, he replicates the **anatomical challenges** posed by curvatures greater than 30°, offering a step-by-step visual guide to the 180-degree and 90-degree preparation strategies.

The session focuses on **optimizing access** and **visualization** without compromising dentin integrity. Viewers will gain practical insights into **tip selection, movement control**, and precision targeting of the **broken fragment** within tight canal curvatures.

This hands-on demonstration reinforces the theoretical concepts covered in the previous lecture and equips clinicians with actionable protocols for one of **endodontics' most technically demanding procedures**.

In particular, this lecture focuses on:

- Practical application of the **180° and 90° ultrasonic access techniques**
- Step-by-step **removal of non-visible files** beyond curved segments
- **Instrument selection** and tip control for enhanced precision and safety
- Strategies to **minimize dentin** sacrifice while maximizing success rates

Video Lecture 14 - Ten second rule for instrument removal (40min)

Description:

This lecture presents a preliminary study exploring the **time-efficiency** and **predictability of ultrasonic removal** of non-visible broken instruments during endodontic retreatment. Results show a striking pattern: when ultrasonic tips successfully mobilize a fragment, **removal typically occurs within 10 seconds**. If the file does not move within that window, attempts beyond 10 minutes often fail.

Dr. Terauchi discusses the **anatomical** and **mechanical factors** that affect this predictability, such as file length, diameter, and canal curvature severity. He also demonstrates a protocol combining ultrasonic tips with additional tools like **Piezoflow** and **Endo Shaper** to enhance removal success in complex cases.

In particular, this lecture focuses on:

- Clinical relevance of the **“10-second success rule”** in fractured file removal
- How fragment size, length, and **canal curvature** impact ultrasonic effectiveness
- Use of **complementary tools**: Piezoflow, ultrasonic tips, and Endo Shaper
- **Strategic decision-making** when ultrasonic removal becomes inefficient

Video Lecture 15 - LIVE DEMO: strategies for removing non-visible broken files with ultrasonics (41min)

Description:

In this **ReLIVE DEMO** session, Dr. Terauchi shows the application of ultrasonic techniques for removing non-visible broken instruments within severely curved canals.

Using a simulation model, Dr. Terauchi walks through **various removal protocols** involving ultrasonic tips, Piezoflow, and Endo Shaper systems. The session illustrates how file length, diameter, and curvature influence access and effectiveness, and provides visual guidance on adjusting strategies in cases of limited response.

Video Lecture 16 - Advanced techniques for long broken file removal (8min)

Description:

This lecture focuses on the **clinical management** of long or deeply positioned **broken instruments**, particularly those located around severe canal curvatures. Dr. Terauchi presents the use of **burs** to carefully access and **retrieve longer fragments**, minimizing dentin sacrifice and procedural risks.

The session highlights the integration of **ultrasonic irrigation systems** like Piezoflow, which assist in dislodging fragments through enhanced acoustic streaming and debris clearance. A **detailed flowchart** is also provided, outlining the clinical decision-making process based on file visibility, location, and canal anatomy.

In particular, this lecture focuses on:

- **Rotary bur techniques** for safely accessing and retrieving long broken files
- Application of **Piezoflow** for **ultrasonic irrigation** and biofilm disruption
- Management of **broken instruments** located around severe curvatures

Video Lecture 17 - LIVE DEMO: Practical removal of long broken files using rotary burs and piezoflow (48min)

Description:

In this **ReLIVE DEMO**, Dr. Terauchi demonstrates the practical application of advanced techniques for **removing long broken files**, especially those located around **severe canal curvatures**. Using a detailed simulation model, he showcases the use of rotary burs for precise dentin removal and fragment access, combined with Piezoflow ultrasonic irrigation to enhance fragment mobilization and cleaning.

The demonstration also walks through a **clinical flowchart** guiding treatment planning and decision-making during the removal process. This hands-on session bridges theoretical concepts with real-time practice, providing valuable insights for clinicians facing challenging fractured instrument cases.



Scan the code
and enter the
course



Author Bio:

Dr. Yoshi Terauchi is a world-renowned endodontist known for his expertise in removing broken instruments and advanced retreatment techniques. He is the founder of the Dental Arts Academy in Tokyo and has developed innovative tools widely used in endodontics. Dr. Terauchi is also a respected educator and author, recognized globally for his contributions to complex endodontic case management.

