Broken Instrument Removal:
Seeing is Retrieving

Virtually every clinician who has performed endodontics has experienced an upset like breaking an instrument. Today, most separated instruments can be removed due to advancements in vision and ultrasonics. Ultrasonic instrumentation is the key to removing broken instruments easier and safer than ever before.

AN ADVANTAGE OF MINUTE PROPORTIONS

Ultrasonic instrumentation provides significant advantages for removing broken instruments as the appropriate tip sizes are dramatically smaller than the smallest burs in dentistry. ProUltra® Endo Tips 1-5 are contra-angled, come in increasingly longer lengths and narrowing diameters, and are coated with a zirconium nitride abrasive. When space is more restrictive, the titanium ProUltra Endo Tips 6, 7 and 8 are useful given their thinner diameters and longer lengths.

ACCESS IS EVERYTHING

Establish straightline coronal access with high-speed burs. Create radicular access by using hand files to safely accommodate Gates Glidden (GG) drills. Confine GGs to the straightaway portions of the canal and rotate at 750 RPM. Safely use GGs in a brushing motion to gently relocate the canal away from furcal danger and create a smooth tapered shape to the obstruction.

Important Tip: Progressively step each larger GG out of the canal so the final shape is prepared “no bigger” than it would have been had there been no broken instrument.

TREPHINING WITH ULTRASONICS

When the head of the broken instrument becomes visible, flush and dry the canal. Next, select an ultrasonic instrument with a length that will reach the obstruction, and a diameter that can passively fit into the canal. Its profile should ensure a line of sight. Choose the lowest power setting that will efficiently accomplish the clinical task. Lightly move the energized tip, in a counterclockwise direction, around the obstruction to progressively expose its coronal extent. In longer roots, or when space is more restrictive, use a titanium instrument to trephine deeper. To maintain vision, work DRY and direct a collimated stream of air into the pulp chamber to blow out dust. During ultrasonic trephining, the obstruction will typically loosen and often abruptly jump out of the canal.