



Dale R. Rosenbach, DMD,
MS



Radosław Jadach, DDS

How to Extract Teeth as Atraumatically as Possible: Root Sectioning

Microcopy's NeoBurr's provide multi-use quality with a single-use price to permit advanced and effective extraction techniques that won't break the bank.

With the preponderance of published data demonstrating compelling reasons to remove teeth as minimally invasively as possible, the burden of finding and utilizing effective methods of atraumatic exodontia falls upon the clinician as never before. By working in regions with thin plates of bone and thin overlying soft tissue, a shift in thinking has developed to promote tooth removal procedures that demonstrate a remarkable concern for maintaining perfectly intact facial plates with minimal disruption of papillae and the midfacial scallop of soft tissue. One may create space around a tooth by troughing the surrounding bone with a bur prior to employing somewhat more traditional extraction techniques. Another helpful way of simplifying extraction is by sectioning multi-rooted teeth prior to elevation and extraction.

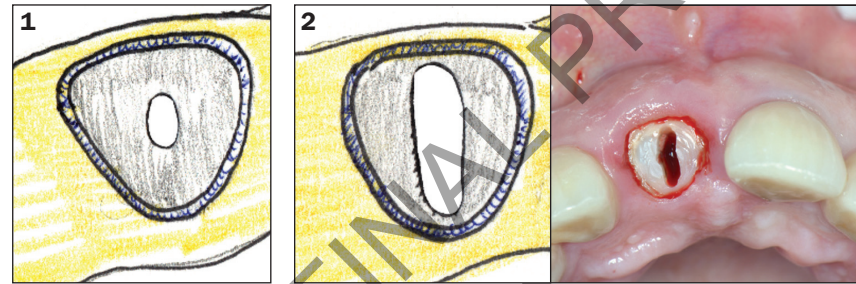
Perhaps surprisingly, this second method can be of benefit, even in the anterior, in the absence of furcations. Similar to a previously published paper on posterior tooth sectioning by one of these authors,¹ this paper will seek to highlight how easy-to-learn and adapt sectioning techniques may be employed during anterior tooth extraction to provide greater efficiency and ease for minimally invasive tooth removal. For this unconventional technique, focus will be placed on the use of a long carbide sectioning bur, such as the NeoBurr 151LZ (Microcopy).

Single Roots vs Multiple Roots

In the article on molar sectioning, recommendations were made regarding the separation of posterior root cones from one another to provide greater ease during extraction. By sectioning through the root trunk, each individual root cone (along with its respective residual portion of the root trunk still attached following sectioning) could then be elevated off adjacent teeth and one another, providing more sources of leverage. Such a technique can also be achieved in the anterior, albeit with some modification.

Anterior Root Sectioning Technique: Step-by-Step Guide

Anterior teeth possess canals that, in cross section, may extend for about a third of the root diameter.



(1) The anterior tooth slated for extraction should be decoronated to just coronal to the gingival margin.

(2) The rounded tip 151LZ surgical bur should be used to widen the canal into a sectioning channel. Care should be taken not to extend the furrow through the entirety of the

tooth structure but to leave a slight amount of dentin at the facial and palatal extents of the sectioning channel. This prevents unanticipated damage to the surrounding bone, which is usually already exceedingly thin.

(3) The sectioning channel should extend apically to within a few millimeters of the apex. Care must be taken to follow the facial and palatal taper of the root so as not to perforate while forming the sectioning channel. The uncommon 28-mm length of the 151LZ bur can permit access to the apical third of anterior teeth, even though their root lengths can be considerable (see Table 1).

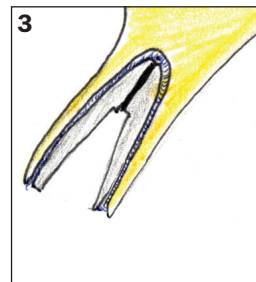


Table 1. Root Lengths for Anterior Teeth²

AVERAGE ROOT LENGTHS (MM)

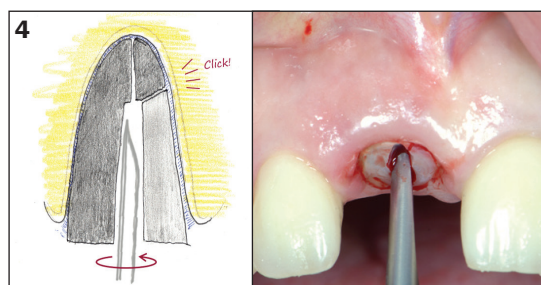
Maxillary

Central incisor	13
Lateral incisor	13.4
Canine	16.5

Mandibular

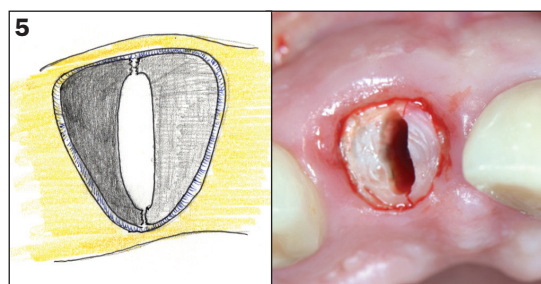
Central incisor	12.6
Lateral incisor	13.5
Canine	15.9

Anticipated root length is helpful to know prior to sectioning to permit careful depth gauging.

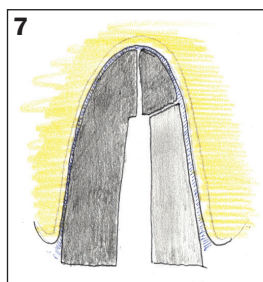
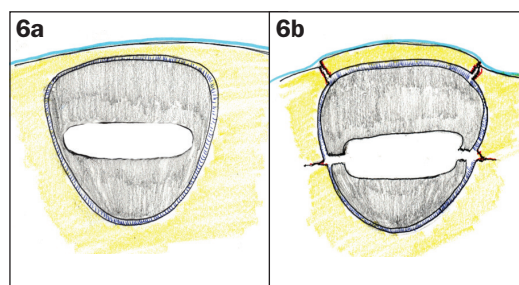


(4) Place a narrow straight elevator deep into the sectioning channel and turn until you hear a click. This will indicate that you have successfully fractured one wall from the other.

(5) The tooth will now exhibit small fractures through the residual facial and palatal tooth structure.

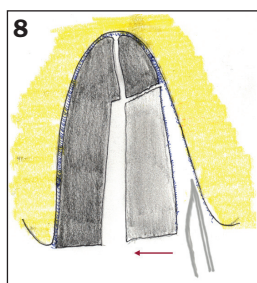


(6a and 6b) If the sectioning channel is formed mesiodistally instead of faciopalatally, damage to the facial plate is likelier to occur when fracturing the tooth. This technique ought to be reserved for premolars, in which the facial plate is usually much thicker than in anterior sites.



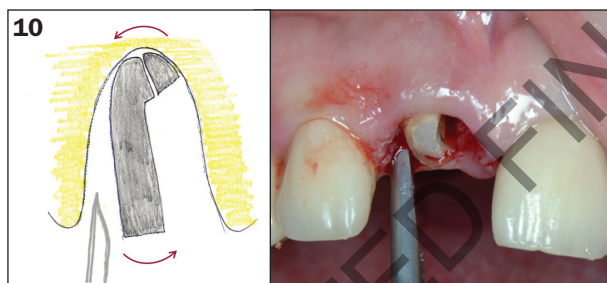
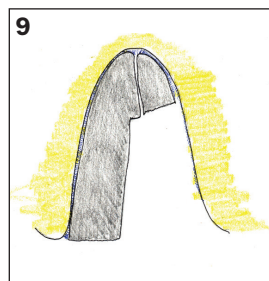
(7) After fracturing, the tooth will possess a larger segment (including the apical region) and a smaller segment. It may not be entirely evident which side (mesial or distal) is which.

(8) The smaller segment should be teased and elevated from the proximal wall with a straight elevator. Alternatively, a thinner instrument may be used, such as a Goldman-Fox No. 11 or buck knife. If the attempt does not produce movement, the other side might be the small segment. Once loose, it can be removed with forceps.



(9) The other side, which is still connected to the apex will remain.

(10) This larger segment can now be more easily removed by rotating it within the socket with the insertion of a straight elevator or a thinner instrument, if necessary.



The 151LZ bur may also be used in the performance of socket shielding. Although dedicated kits are commercially available, and may assist in the performance of this technique, they are not necessary. One of the benefits of the available kits is that a long bur is included to permit access to the apical region of the socket for sectioning purposes. For those with the adequate skills and training necessary to perform such advanced procedures, having the 151LZ bur in one's armamentarium can help achieve successful root sectioning and shield formation.

CONCLUSION

The NeoBurr 151LZ bur can assist in making extractions simple and effective and, perhaps most importantly, can permit minimal invasiveness. Microcopy's single-use price makes this method cost effective as well.

For more information, call **Microcopy** at **(800) 235-1863** or visit microcopydental.com.

Acknowledgment

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References

1. Rosenbach DR. How to extract teeth as atraumatically as possible. *Dental Products Report*. March 2015.
2. Scheid RC, Weiss G. *Woelfel's Dental Anatomy, 8th Edition*. Table 1-7: Average measurements on 4572 extracted teeth. Lippincott Williams & Wilkins, 2013, pg 41.

Dr. Rosenbach attended New Jersey Dental School and Columbia University for his training in periodontics and implant dentistry. He is a Diplomate of the American Board of Periodontology. He maintains a practice limited to periodontics and surgical implantology in the New York area and lectures extensively throughout North America on topics related to periodontics, implant dentistry, and adjunctive surgical procedures. He can be reached at shatnes551@yahoo.com.

Dr. Jadach graduated from the Faculty of Medicine and Dentistry, Wroclaw Medical University in 2001 and was a physician in its Department of Oral and Maxillofacial Surgery. He trained at New York University's Continuing Education Linhart Dental Program. He co-founded the Oral Surgery Academy.

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