

**PRACTICAL CLINICAL COURSES**  
A Service of the Gordon J. Christensen  
Career Development Program

**V1334**

**Management of: Blocks, Ledges, Transportations & Perforations**

Produced by  
**ADVANCED ENDODONTICS**  
Clifford J. Ruddle, DDS (Founder/Director)

**Materials Included:**  
C.E. Instruction Sheet  
Product/Supplier Lists  
Clinician Responsible  
Goals & Objectives  
Overview  
Supplemental Materials  
AGD Post-Test

**Gordon J. Christensen**  
**PRACTICAL CLINICAL COURSES**

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Clifford J. Ruddle  
**ADVANCED ENDODONTICS**

*Sources of Products Discussed in*  
**V1334 Management of: Blocks, Ledges, Transportations & Perforations**

Presented by: Clifford J. Ruddle, DDS

ITEM	DESCRIPTION	BRAND / COMPANY
Edge-Ease	X-ray Comfort Cushions	Strong Dental / Schein
Rubber Dam	Handidam (one size)	Aseptico / Dentsply Tulsa Dental
Rubber Dam Frame	Ostby Type - Part no. 547-3539	Hygenic / Schein
Rubber Dam Clamps	Molars (26, 8A), Anteriors (9), Bi's (9)	Ivory or Hu-Friedy / Schein
Hot Pulp Test Tip	For thermal testing	SybronEndo or Schein
Mirror Handle w/Ruler	Item #100-8125	Schein
Stropko Irrigator	Tri-plex syringe adapter	Dr. John Stropko
Metalift	Crown & Bridge Remover	Classic Practice Resources
Endo Access Kit	Assorted Burs & X-Gates	Dentsply Tulsa Dental
Burs...Transmetal	1958 or 2158 FG	Brasseler
...Round Surgical Length	FG 2, 4 Carbide	Brasseler
...Tapered Diamonds	Round End (6856L-014) / Needle (859-010)	Brasseler
<b>IRRIGANTS / DEVICES:</b>		
Irrigating Syringes	3cc, 23 gauge (notched tip)	Monoject / Schein
Navi-Tip	29 gauge (notched tip), 21 mm	Ultradent
NaOCl Warmer	Sm. hotplate for warm water bath	Mr. Coffee
Water Beaker	2651A (3x3) -- For NaOCl syringes	Profex Medical Products
RC Prep or Glyde	Viscous chelator	Schein
Syringe for RC Prep / Glyde	1cc Plastic #0124	Ultradent
Tip for syringe / Stropko Irrigator	White Mac #0661	Ultradent
17% EDTA	Aqueous chelator	Roth International
Calcium Hydroxide	Interappointment dressing	Pulpdent / Schein
Xylol/Chloroform	Clean excess sealer off walls / Remove cements	Schein
<b>HAND INSTRUMENTATION:</b>		
Files / 10, 15	K-Files	Dentsply Maillefer
Files / 20, 25, 30	Flexofiles	Dentsply Maillefer
Files / 35, 40, 50, 60	SureFlex	Dentsply Maillefer
ProTaper Hand Files	Snap-on handles (SX, S1, S2, F1, F2, F3)	Dentsply Tulsa Dental
Bird Beak Plier	For precurving NiTi hand files	Hu-Friedy / Schein
Endo Ring	Blue Ring w/Foam Inserts	Jordco / Schein
Micro Openers & Debridors	All Sizes	Dentsply Maillefer
<b>ROTARY INSTRUMENTATION:</b>		
ProTaper Rotary Files	SX, S1, S2, F1, F2, F3, F4, F5	Dentsply Tulsa Dental
ProTaper Retreatment Files	D1, D2, D3	Dentsply Tulsa Dental
ProFile Orifice Shapers	Sizes 20-50	Dentsply Tulsa Dental
ProFile .04 Tapers	Sizes 35-50	Dentsply Tulsa Dental
X-Gates	Single Instrument (Gates Gliddens 1-4)	Dentsply Tulsa Dental
Gates Glidden Drills	Stainless Steel Sizes 1-6	Dentsply Maillefer

*(Continued)*

ITEM	DESCRIPTION	BRAND / COMPANY
<b>CROWN &amp; BRIDGE REMOVAL:</b>		
Crown Splitter	Removing restorative segments	SybronEndo
K.Y. Pliers	Grasping Instrument	G.C. America / Schein
Wynman Crown Gripper	Grasping Instrument	Miltex Instrument / Schein
Crown-a-matic	Percussive Instrument	Peerless / Schein
Coronaflex	Percussive Instrument	KaVo America
Metalift	Passive/Active Instrument	Classic Practice Resources
Kline Crown Remover	Passive/Active Instrument	Brasseler
Richwil	Accessory Device	Almore / Schein
Rand	Accessory Device	J.R.Rand / Schein
<b>CANAL OBSTRUCTIONS:</b>		
Stieglitz Forceps	Silver point removers	Hu-Friedy / Schein
Spinal Tap Needle	18, 20, 22 g., 2 1/2", SS-1529 Blunt	Ranfac
Instrument Removal System (iRS)	Remove silver points, carriers or files	Dentsply Tulsa Dental
Ruddle Post Removal System	Post Remover Kit	SybronEndo
Roto-Pro Burs (Variety of sizes)	Rotosonic Scalers for Post Removal	Ellman
Gyro-Tip	For Fiber Post Removal	Ultradent
<b>PASTE REMOVAL:</b>		
Endosolv E	Eugenate Based Paste	Endoco
Endosolv R	Resin Based Paste	Endoco
<b>PERFORATION REPAIRS:</b>		
ProRoot (MTA)	Mineral Trioxide Aggregate	Dentsply Tulsa Dental
SuperEba	Resin cement	Harry J. Bosworth / Schein
Calcium Sulfate	Medical Grade	Life Core Biomedical
CollaCote	Absorbable collagen dressing	Sulzer Dental
West Perf Repair Instruments	West 1-2, West 3-4	SybronEndo
Spinal Tap Needle	18 g. for delivering ProRoot	Ranfac
Dovgan Carriers	ProRoot (MTA) Carrier	Quality Aspirators
<b>ADHESION DENTISTRY:</b>		
Curing Light	Demetron or Pro-Lite	SybronEndo or Maillefer
Focu Tips	For narrowing light beam	SmartPractice
Tubulicid Red	For cleaning enamel & dentin	Global Dental
Etch-37	Etchant 37% Phosphoric Acid	Bisco
Tooth Conditioner Gel	Etching gel in syringe	Caulk / Schein
Microbrush	Etching & bonding	Schein
Benda Brush	Applicator brush	Centrix / Schein
<b>OBTURATION:</b>		
Gutta Percha	Fine-Medium / Medium or ProTaper Matching	Dentsply Tulsa Dental
Pulp Canal Sealer - EWT	Powder & Liquid	Kerr / Schein
5004 Touch 'N Heat	Heat Source 0.5mm plugger tip	Kerr / Schein
Pluggers	Sizes 8-12 Posterior	Schilder / Dentsply Maillefer
Calamus Flow	Gutta Percha Delivery System for backpacking	Dentsply Tulsa Dental
Calcium Hydroxide	Interappointment dressing	Pulpdent Corp / Schein

(Continued)

ITEM	DESCRIPTION	BRAND / COMPANY
<b>EQUIPMENT:</b>		
EndoActivator System	Sonic Handpiece Driver & Activator Tips	Dentsply Tulsa Dental
Slowspeed Electric H.P.	Gear Reduction / DTC Motor	Dentsply Tulsa Dental
Slowspeed Electric or Air	Gear Reduction	KaVo America
Ultrasonic Unit (Piezoelectric)	P5 Ultrasonic Generator	Dentsply Tulsa Dental
Ultrasonic Instruments	ProUltra ENDO 1-5, ENDO 6-8, SINE 1-6	Dentsply Tulsa Dental
File Adapter	FA11 (file holder)	SybronEndo
Electronic Apex Locator	Root ZX	J. Morita
Microscope	A variety of choices	Zeiss
Dental Mobile Cart	Customized Endodontic Cart	ASI Medical
Digital Xray System	Digital Radiography	Schick Technologies
Dental Anatomy Website	Patient Education Tool	ToothAtlas.com

For any questions regarding the products and/or techniques presented, please contact:

**ADVANCED ENDODONTICS • CLIFFORD J. RUDDLE DDS**  
122 S. Patterson Avenue, Ste. 206, Santa Barbara, CA 93111 • (800) 753-3636 • [www.endoruddle.com](http://www.endoruddle.com)

Clifford J. Ruddle  
**ADVANCED ENDODONTICS**

*Sources of Suppliers Discussed in*  
**V1334 Management of: Blocks, Ledges, Transportations & Perforations**  
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COMPANY	TOLL FREE	FAX	PHONE	WEBSITE
Advanced Endodontics	800-753-3636	805-965-8253	805-964-8838	endoruddle.com
Aseptico	800-426-5913	360-668-8722	425-487-3157	aseptico.com
ASI Medical	800-566-9953	303-766-8584	303-766-3646	asimedical.net
Bisco	800-247-3368	800-959-9550	847-534-6000	bisco.com
Brasseler	800-841-4522	888-610-1937	912-927-8671	brasselerusa.com
C. K. Dental Specialties	800-675-2537	714-639-6991	714-639-6990	ckdental.net
CareCredit	800-859-9975	800-333-3196	--	carecredit.com
Classic Practice Resources	800-928-9289	888-841-5384	225-928-0799	metalift.com
Dentco	800-454-9244	914-948-1711	914-682-6600	dentcorp.com
Dentsply Maillefer	800-924-7393	800-924-7389	--	maillefer.com
Dentsply Tulsa Dental Spec.	800-662-1202	918-493-6599	918-493-6598	tulsadental.com
Designs for Vision	800-727-6407	631-585-3404	631-585-3300	designsforvision.com
Ellman International	800-835-5355	516-569-0054	516-594-3333	ellman.com
Endoco	800-388-7868	866-683-6679	901-683-6677	endoco.com
Global Dental Products	--	516-785-7885	516-221-8844	gdpdental.com
Global Surgical	800-767-8726	636-861-2969	636-861-3388	globalsurgical.com
Hu-Friedy	800-483-7433	800-729-1299	877-321-4333	hu-friedy.com
J. Morita USA	888-566-7482	949-465-1095	949-581-9600	jmoritausa.com
KaVo America	800-323-8029	847-550-6825	847-550-6800	kavo.com
Life Core Biomedical	800-348-4368	952-368-3411	952-368-4300	lifecore.com
Link Ergonomics	800-424-5465	417-206-4622	417-206-4600	linkdental.com
Marquis Dental	800-359-3206	303-344-5232	303-344-5222	perio-aid.net
Moyco Precision Abrasives	800-331-8837	215-362-3809	215-855-4300	moycotech.com
Mr. Coffee	800-672-6333	--	--	mrcoffee.com
Profex Medical Products	800-325-0196	901-454-9850	901-452-7485	profexmed.com
Quality Aspirators	800-858-2121	972-298-6592	972-298-2669	qualityaspirators.com
Ranfac	800-272-6322	508-584-8588	508-588-4400	ranfac.com
Roth International Ltd.	800-445-0572	312-733-7398	312-733-1478	rothendo.com
Henry Schein	800-372-4346	800-732-7023	775-327-3200	henryschein.com
Schick Technologies	877-724-4254	718-482-2030	718-937-5765	schicktech.com
SmartPractice	800-522-0800	800-522-8329	602-225-0595	smartpractice.com
Stropko, Dr. John	--	480-563-7881	480-515-4933	stropko.com
SybronEndo	800-346-3636	714-516-7936	714-516-7979	sybronendo.com
ToothAtlas.com	--	650-854-2568	650-233-0200	eHuman.com
Ultradent	800-552-5512	800-842-9024	801-572-4200	ultradent.com
Zeiss	800-442-4020	925-557-4101	925-557-4100	zeiss.com
Zimmer Dental	800-854-7019	760-431-7811	760-431-9515	zimmerdental.com

## **PROGRAM**

### **V1334 Management of: Blocks, Ledges, Transportations & Perforations**

#### **CLINICIAN RESPONSIBLE**

**Clifford J. Ruddle, DDS**

Founder & Director, Advanced Endodontics

#### **GOALS & OBJECTIVES**

At the completion of this video presentation, participants should be able to accomplish the following:

1. Describe the etiology of iatrogenic blocks, ledges, transportations & perforations.
2. List the traditional breakdowns commonly associated with these iatrogenic events.
3. Recite the biological and mechanical objectives for shaping canals.
4. Identify the appropriate preparation sequence for shaping a canal.
5. Describe the techniques for successfully negotiating blocks.
6. Discuss the procedure of bypassing and, if possible, eliminating ledges.
7. Recite the armamentarium and techniques required to manage transportations.
8. Identify the methods and biocompatible materials needed for repairing perforations.
9. Understand the endodontic possibilities of nonsurgical retreatment.
10. Turn endodontic breakdowns into breakthroughs.

#### **OVERVIEW**

Endodontic challenges confront dentists daily. Overcoming these challenges is critical. This video shows how to negotiate blocks, bypass and eliminate ledges, manage transportations, and repair perforations. Preventative measures are described and corrective procedures are outlined using the latest nonsurgical armamentarium, materials, and techniques. This presentation discusses how to nonsurgically address endodontic complications and the potential for turning breakdowns into breakthroughs. Properly performed, endodontic treatment is the cornerstone of restorative and reconstructive dentistry.

Techniques in this video are demonstrated utilizing 3D graphics and animations, in plastic models, on extracted teeth, and on patients. All procedures have been performed to optimally transfer knowledge and maximize the learning experience.

## SUPPLEMENTAL MATERIALS

### **V1334 Management of: Blocks, Ledges, Transportations & Perforations**

1. Alhadainy HA, Abdalla AI: Artificial floor technique used for the repair of furcation perforations: a microleakage study, *J Endod* 24:1, pp. 33-35, 1998.
2. Arens DE, Torabinejad M: Repair of furcal perforations with mineral trioxide aggregate, *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 82:84-88, 1996.
3. Blumenthal N: The use of collagen membranes for guided tissue regeneration, *Comp Contin Educ Dent* (supp 13), March, 1992.
4. Chau JY, Hutter JW, Mork TO, Nicoll BK: An in vitro study of furcation perforation repair using calcium phosphate cement, *J Endod* 23:9, 1997.
5. Chung KM, et al: Clinical evaluation of a biodegradable collagen membrane in guided tissue regeneration, *J Periodontol* 61:732-736, 1990.
6. Hammerstrom LE, Blomloef LB, Feiglin B, Lindskog SF: Effect of calcium hydroxide treatment on periodontal repair and root resorption, *Endodonts Dent Traumatol* 2:184, 1986.
7. Himel VT, Alhadainy HA: Effect of dentin preparation and acid etching on the sealing ability of glass ionomer and composite resin when used to repair furcation perforations over plaster of Paris barriers, *J Endod* 21:3, pp. 142-145, 1995.
8. Johns L, Merritt K, Agarwal S, Ceravolo F: Immunogenicity of bovine collagen membrane used in guided tissue regeneration, *J Dent Res* 71:298, Special Ed. Abst. 1538, 1992.
9. Kim S, Rethnam S: Hemostasis in endodontic microsurgery, in *Microscopes in Endodontics, Dental Clinics of North America* 41: 3, pp. 499-511, W.B. Saunders, Philadelphia, July 1997.
10. Koh ET, McDonald F, Pitt Ford TR, Torabinejad M: Cellular response to mineral trioxide aggregate, *J Endod* 24:8, pp. 543-547, 1998.
11. Lee SJ, Monsef M, Torabinejad M: The sealing ability of a mineral trioxide aggregate for repair of lateral root perforations, *J Endod* 19:11, 1993.
12. Lemon RR, Steele PJ, Jeansonne BG: Ferric sulfate hemostasis: effect on osseous wound healing. Part I: Left in situ for maximum exposure, *J Endod* 19:170, 1993.
13. Moloney LG, Feik SA, Ellender G: Sealing ability of three materials used to repair lateral root perforations, *J Endod* 19:2, 1993.
14. Nakata TT, Bae KS, Baumgartner JC: Perforation repair comparing mineral trioxide aggregate and amalgam using an anaerobic bacterial leakage model, *J Endod* 24:3, pp. 184-186, 1998.
15. Pecora G, Baek S, Rethnam S, Kim S: Barrier membrane techniques in endodontic microsurgery, in *Microscopes in Endodontics, Dental Clinics of North America* 41: 3, pp. 585-602, W.B. Saunders, Philadelphia, July 1997.
16. Pitt Ford TR, Torabinejad M, Hong CU, Kariyawasam SP: Use of mineral trioxide aggregate for repair of furcal perforations, *Oral Surg* 79:756, 1995.
17. Sottosanti J: Calcium sulfate: a biodegradable and biocompatible barrier for guided tissue regeneration, *Compend Contin Educ Dent* 13:3, pp. 226-234, 1992.
18. Torabinejad M, Watson TF, Pitt Ford TR: The sealing ability of a mineral trioxide aggregate as a retrograde root filling material, *J Endod* 19:591, 1993.



## POST-TEST

### **V1334 Management of: Blocks, Ledges, Transportations & Perforations**

1. The iatrogenic events discussed in the video can be attributable to:
  - a. working intentionally short of the radiographic terminus.
  - b. attempting to negotiate and prepare the apical one-third first.
  - c. instruments selected and their methods of use.
  - d. all of the above.
2. Endodontic treatment is simplified by:
  - a. attempting to identify working length first.
  - b. dividing the entire procedure into a series of smaller steps.
  - c. using rotary instrumentation.
  - d. none of the above.
3. The preferred armamentarium for negotiating a block is:
  - a. ProTaper hand files in the presence of a viscous chelator.
  - b. small, flexible hand files in the presence of sodium hypochlorite (NaOCl).
  - c. small, flexible hand files in the presence of a viscous chelator.
  - d. dependent on the clinician's judgment.
4. A specific advantage of an aqueous chelator is:
  - a. its ability to lubricate negotiating files.
  - b. its ability to emulsify pulp and discourage the readherence of collagenous tissue.
  - c. its ability to hold pulpal tissue, dentinal mud and debris in suspension.
  - d. none of the above.
5. An important technique in bypassing ledges is to:
  - a. only precurve the file if the canal is curved.
  - b. identify working length first.
  - c. pre-enlarge the canal coronal to the ledge.
  - d. work dry.
6. Surgical correction is most likely associated with the following transportation type:
  - a. Type I.
  - b. Type II.
  - c. Type III.
  - d. none of the above.
7. The following tool may be used to carry Mineral Trioxide Aggregate (MTA):
  - a. an appropriately shortened spinal tap needle.
  - b. a Dovgan carrier.
  - c. a West repair instrument.
  - d. all of the above.

**POST-TEST (CONT'D)**

**V1334 Management of: Blocks, Ledges, Transportations & Perforations**

8. The following is not an advantage of MTA:
- a. it sets immediately.
  - b. it is not compromised by moisture.
  - c. it is biocompatible.
  - d. it is nonresorbable.
9. The four dimensions of a perforation are:
- a. level, size, location and color.
  - b. level, location, size and time.
  - c. location, size, time and color.
  - d. none of the above.
10. Essential to perforation management is:
- a. to proceed with the repair only if the patient complains.
  - b. adhesion dentistry.
  - c. resorbable barriers.
  - d. hemostasis.

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