

THE DENTAL CLINICS OF NORTH AMERICA

Dent Clin N Am 46 (2002) 427-434

Index

Note: Page numbers of article titles are in **boldface** type.

A

Acid etching, 277–278 dentin following, 213, 214 Adhesive(s), dental. See Dental adhesives. for amalgam restorations. 352 Air abrasion, 175 advantages of, 196 air pressure for, 202 and high-speed drill, compared, 195, 196-197 benefits of, 188 bonded restorations and, 197 considerations for using, 197 continuous mode with exhaust, 200 continuous mode without exhaust, 200 contraindications to, 202 cutting rate in, 199–200 diagnosis of decay for, 192-193 directing particle stream in, 200 dynamics of, understanding of, 205-208 extremely conservative preparations produced by, 195-197 goal of, 188 in conservative operative dentistry, 185-209 instruments for, development of, 185-186 nozzle diameter for, 202-203 selection of. 200 techniques and procedures for, 197-203 learning to use, 186-197, 197, 203 mechanisms of, 195 mistakes to avoid in use of, 204 particle type and size for, 203, 204 patient comfort and, 201, 202-203 patient preparation for, 198-199, 201 science of, and anatomy of teeth, 188 sensitivity of patient to, 201 steps in use of, 198 stream intensity or particle flow rate for, 202

Air-abrasive microdentistry system, value of, 195

Amalgam, as core material, 376 silver, for restoration of root-surface caries, 388–390

Amalgam restorations, 348–354 adhesive for, 352 complex, amalgam preparation for, 348–352 complex matrices for, 352–353 finishing of, 353, 354 longevity of, in posterior teeth, 308–311 preparations for, 176–178 resin-based composite, direct, for class I and II cavities, 305–312 discussion of, 317–321

Amalgapins, 351-352

Argon lasers, for polymerization, 331

ART treatment technique, success rate of, 315

B

Blue light-emitting diode, for polymerization, 332

Bonding, philosophies of, dentin adhesive systems and, 330-331

Bonding agent(s), application of, for resin composites, 342-344

C

CAD/CAM procedure, 405–426
adhesive seating for, 419-420, 423, 424
case reports of use of, 412-420
computer-aided design for, 408-409
computer-aided machining for, 409-411
development and improvements in, 406
discussion of, 420-425
for chair-side inlays and partial crowns, 412–414, 415
for chair-side partial and full crowns, 414-415, 416, 417
full crown design on screen for, 416-418, 419, 420, 421, 422
history of, 405–406
intraoral three-dimensional scanning camera for, 406-407
multitasking computer-aided design/computer-aided machining for, 418–419, 422
scanning principle of, 407, 408
semichair-side and laboratory computer-aided design/computer-aided machining for, 411–412
Calcium hydroxide liner, 318
Caries, detection of, 172 caries-detecting dye for, 193–194 lasers for, 194–195 incidence of, 247 magnification of, 172–173

428

nonvital, air abrasion in, 207 preparations for, conservative, 171-184 restoration in, 173 risk of, classification of, 400, 401 root-surface, etiology of, 386-387 factors controlling, 388 incidence of, 386 materials for restoration of, 388-392 rapidly progressing, 387 slowly progressing, 387 treatment of, 385-404 secondary, and fluoride-releasing dental materials, 247-276 definition of, 251 development of, risk factors for, 254, 255-256 in-vitro, and fluoride-releasing dental materials, 259-262 locations of, 251, 263-264 prevention of, 254 restoration replacement in, 249 studies of, 254 treatment of, as disease, 599-600, 606 future developments in, 400-402 nonsurgical, 172 vital, air abrasion in, 206-207 Cavity preparation, oscillating instruments for, 332 Cements, glass ionomer. See Glass ionomer cements. luting, for posts, 371 Ceramic inlays and onlays, contraindications to, 356-357 indications for, 356 Ceramics, core-strengthened, 355 for inlays and onlays, 355 glass, 355 strengthened, 355 Compomers, 392 Composite inlays and onlays, contraindications to, 356-357 indications for, 356 Composite resin(s), advantages of, 359 as core material, 377 bonding agent application for, 342-344 fluoride-releasing, 591, 615 for root-surface restorations, 390 materials used for. 344 matrix systems for, 343-344 placement of, 344–347 posterior, formation of contact area for, 347-348 posterior restorations using, 342

- Composite resins (*continued*) rebonding of, 348
- Composite resin restorations, direct, for class I and II cavities, 303–305 new developments in, 328–330 preparations for, 178–179, 180
- Composites, indirect composite materials and, 356 shade guide for, 316

Copper-band matrices, 353

Core-strangthened ceramics, 355

Crown segment, 215

D

Decay, diagnosis of, 193 Dental adhesives, advantages and disadvantages of, 283 "all-in-one," 290-293 clinical trials of, 293-296 cytotoxicity of, 221 laboratory tests of, 296, 297 new philosophies on, 290 types of, 283 Dental caries. See Caries. Dental materials, cytotoxicity of, 221-222 Dentin, abnormal forms of, sealing of, problems associated with, 224-225 as porous barrier, 213 collagen banding in, 282-287 contaminated with bacteria, permeability of, 233-235, 236 effects of growth factors on, 236-238 following acid etching, 213, 214 fractured mineralized, 213, 214 hybridization of, 288, 291, 295 hydraulic conductance of, 217, 218 initial seal, restoration of, 220-221 middle, dentin tubules in, 278, 281 peripheral seal, restoration of, 220 permeability of, effects of dentin thickness on, 215-216 effects on restorative dentistry, 211-245 intertubular, versus tubular permeability of, 225-229, 230 regional differences in, 216-218 postoperative sensitivity of, 217-218 sealing of, with resins, problems associated with, 222-224 thickness of, effects on permeability, 215-216 tubular structure of. 282

Dentin adhesive systems, and bonding philosophies, 330-331

430

Dentin bonding, as function of dentin structure, 277–301 "wet-bonding" technique and, 287–288
Dentin bonding systems, categories of, 278
Dentin substrate, ideal, 278–290
Drill, high-speed, and air abrasion, compared, 195, 196–197
Dye, caries-detecting, for detection of caries, 193–194

E

Endodontically treated tooth, restoration of, **367–384** Extension-for-prevention approach, 196

F

Fissure(s), assessment and management of, 173, 174 definition of, 172
Fluoride, amount of, in dental materials, 258 availability from glass ionomers, 271 release of, methods of, 257–258
Fluoride-releasing composite resins, 591, 615
Fluoride-releasing materials, 589, 614–617 caries-preventive mechanisms of, 271 fluoride recharge in, 393, 394 fluoride release from, 393 plaque and, 268–270 recharging of, 270 remote effect of, 262–268 secondary caries and, **247–276** in-vitro, 259–262

G

Glass ceramics, 355
Glass ionomer(s), as core material, 377 fluoride availability from, 258–259, 268 resin-modified, 267–268, 391–392 as core material, 377
Glass ionomer cements, 257 for posterior restorations, discussion of, 321–326 failure rate of, 312–314 longevity of, 313
Groove, definition of, 172

Growth factors, effects of, on dentin, 236-238

I

Inlays, and onlays, ceramic, contraindications to, 356–357 indications for, 356 composite, contraindications to, 356–357 indications for, 356 luting technique for, 361–362 placement of, preparation for, 358–359

Instruments, oscillating, for cavity preparation, 332

L

Lasers, argon, for polymerization, 331 for caries detection, 194–195 Light polymerization units, 331–332 Liner, calcium hydroxide, 318

Luting materials, 360-361

Μ

Macrodentistry, 185-186

Matrix systems, for resin composites, 343-344

Max pin, 349-351

Microdentistry, 185–186 air abrasion in. See *Air abrasion*. basic principle of, 188 caries-detecting dye in, 193–194

Microdentistry system, air-abrasive, value of, 195

Minikin pins, 350

Molars, endodontically-treated, post placement in, 368–369 mandibular, Rainey Ridge of, 189 subocclusal oblique transverse ridge of, 189–192

N

Nanoleakage, 229–233

0

Onlays, modifications of, 359-360

Operative dentistry, conservative, air abrasion in, 185-209

Р

Phosphoric acid, for acid etching, 277–278

Plaque, fluoride-releasing materials, 268-270

Plasma arc curing units, for polymerization, 331–332 Polymerization, argon lasers for, 331 blue light-emitting diode, 332 plasma arc curing units for, 331-332 "softstart," 331 Post(s), antirotation of, 375 canal preparations for, 370 cement placement for, 371 core materials for. 376-377 crown bevel and, 376 design of, 369-370 diameter of, 370 length of, 370 luting cements for, 371 metallic, active, 372 passive parallel, 372 passive tapered, 372 prefabricated, 372 non metallic, carbon fiber, 373 tooth colored, 373-375 placement of, indications for, 368-369 restorations retained by, retention and resistance of, 375-376 surface preparation for, 370 types of, 371-375 vertical remaining tooth structure and, 376

R

Resin composite(s). See Composite resin(s).

Resin-modified glass ionomer restorative materials, 267-268, 377, 391-392

Resin restoration, preventive, 179, 180

Resins, sealing of dentin with, problems associated with, 222-224

Restoration(s), amalgam. See *Amalgam restorations*. bonded, air abrasion and, 197 composite, direct, longevity of, in posterior teeth, 303–304, 306–307 composite resin, direct, for class I and II cavities, 305–315 preparations for, 178–179, 180 definitive, of endodontically treated tooth, 377–378 direct, materials for, 341–354 failure of, reasons for, 249, 250–251 in caries, 173 indirect, material selection for, 354–355 longevity of, 249, 250–251 posterior, direct, clinical results of, and new developments, **303–339** clinical trials in, design of, 326–327, 328 factors influencing longevity of, 326–327 Restorations (*continued*) in class I and II cavities, 303–315 new developments in, 327–332 glass ionomer cements, discussion of, 321–326 failure rate of, 312–314 longevity of, 313 using resin composites, 342 replacement of, in secondary caries, 249 resin-based composite, direct class I and II cavities, **303–305** direct for class I and II cavities, discussion of, **315–317** new developments in, 328–330 single-tooth, complex, **341–365** tunnel, 180–181 failure rate of, 314–315 types of, 248–249

- Restoration system, fill-ceramic, chair-side computer-aided design/computer-aided machining. See *CAD/CAM* procedure.
- Restorative dentistry, effects of dentin permeability on, 211-245

Restorative materials, adhesive, 197

Root-caries. See Caries, root-surface.

S

Self-etching primers, 278, 286

Shade guide, for composite materials, 316

Siloranes, 330

Silver amalgam, for restoration of root-surface caries, 388-390

Smear plug, 278, 286

Т

Tooth(Teeth), anatomy of, science of air abrasion and, 188 anterior, endodontically-treated, post placement in, **368–369** full coverage, indications for, 362 posterior, longevity of direct composite restorations in, 303–304, 306–307 premolar, endodontically-treated, post placement in, 369 unsound, new systems to diagnose, 199

Tunnel restorations, 180–181 failure rate of, 314–315

434