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Treating a **Carious Primary Molar** with a **Stainless Steel Crown**

A 4-year-old child presented with caries involving multiple surfaces of a mandibular primary second molar. A stainless steel crown was planned to restore the tooth because it is considered the gold standard in pediatric dentistry for the restoration of primary teeth with extensive caries, cervical decalcification, and/or developmental defects, or following treatment with pulpotomy or pulpectomy procedures.

Articaine HCl 4% and Epinephrine 1:100,000 (Patterson Dental) was utilized for anesthesia because it can diffuse through bone and soft tissue on young children from a buccal infiltration to provide profound anesthesia while avoiding more painful block or palatal injections. The maximum dose of articaine is 7mg/kg in children age 4 and older.

After ascertaining that anesthesia had been obtained, caries were removed with a #330 carbide bur and a #6 round bur. The occlusal surface of the tooth was reduced in order to provide approximately 1–1.5 mm of occlusal space between the tooth and the opposing upper teeth. Next the interproximal surfaces were reduced approximately 1 mm using a thin tapered diamond to break the contacts with the adjacent teeth, and the proximal walls were angled so that they converged slightly towards the occlusal. A feather or knife edged gingival finish line was created approximately 1 mm below the gingival margin, and all line angles were rounded (sharp line angles may prevent the SSC from seating).

Crown Selection & Placement

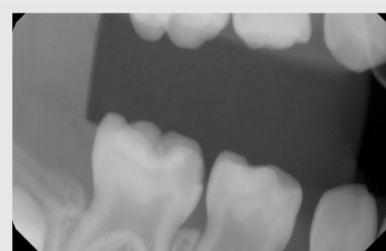
The appropriate size Patterson Primary Molar Stainless Steel Crown (SSC) was then selected using the same sizing method as other brands. The smallest SSC that could be seated and that established preexisting proximal contacts was chosen.

The ideal crown margin length extends 1 mm into the gingival sulcus. This margin placement was determined by seating the SSC on the tooth and scribing a line on the crown at the gingival margin with a sharp instrument. The Patterson crown was then removed, and excess length was cut off with pediatric curved festooned crown scissors. The margins of the SSC were then contoured with a #137 Gordon plier so they engaged the undercuts of the tooth. Any part of the margin that was jagged or not smooth was finished with a green stone and rubber wheel.

Prior to cementation, the fit and occlusion of the SSC was checked in the mouth. A glass ionomer cement was mixed and placed into the crown, filling it half to three quarters full. The SSC was fully seated onto the tooth after drying the tooth. Excess cement was removed with water spray and an explorer, and the interproximal surfaces were cleaned with dental floss. Proper occlusion was verified following cementation.

A Superior Restoration

Numerous studies have demonstrated that SSCs are superior in durability and longevity to Class II amalgam or resin-based restorations in primary teeth. Thus, the patient received a durable restoration that should remain until the tooth is exfoliated.



Figures 1A-B—Pre-op photo and radiograph of mandibular primary second molar (tooth #T) demonstrating mesial-occlusal caries and decalcification.



Figure 2— Administering local anesthesia to tooth #T via infiltration with Articaine HCl 4% and Epinephrine 1/100,000.



Figure 3—Tooth #T following caries removal.

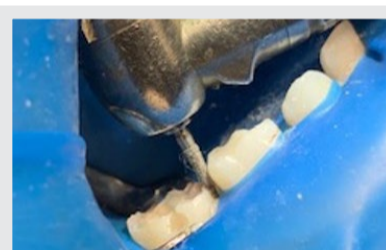


Figure 4—Following occlusal reduction, mesial interproximal reduction to break contact with the adjacent tooth was completed with a thin tapered diamond.



Figure 5—Occlusion was checked to ensure proper occlusal reduction had been accomplished in order to accommodate the bulk of a stainless steel crown.



Figure 6—Completed stainless steel crown cemented onto tooth #T.