



Intraoral expansion screw replacement using a light-cured acrylic technique

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Maxillary rapid palatal expansion (RPE) frequently is used to correct skeletal crossbite. A fixed expander with the expansion screw embedded in palatal acrylic (Haas appliance) often is used. Expansion screws come in varying sizes. Situations such as narrow, high vault palate or collapsed posterior segments of a cleft palate may make it impossible to place the desired size expansion screw, necessitating replacement of the appliance. This normally involves fabricating a new RPE appliance and a delay in treatment. Ideally, expansion with a larger screw should continue without delay. A technique for immediate intraoral replacement of an expansion screw using a light-cured acrylic system is presented, as used in expansion for a cleft palate patient.

Technique

The original appliance should be fully expanded and then examined to ensure intact bands and cement. The palatal cleft defect is obturated with saline-moistened neuro sponges or cotton gauze, and the expansion screw removed from the acrylic with a high-speed handpiece. Some acrylic is left on the metal arms of the original appliance to serve as a bonding interface for the addition of new acrylic. After irrigation and drying, a thin sheet of plastic is inserted between the palate and the remaining pieces of the original appliance to protect palatal mucosa from possible irritation from the bonding material. The new expansion screw is placed into the desired position and bonded to the remaining original acrylic with a light cured acrylic (Triad Gel, Dentsply) (Fig 1). A posterior pivot can be attached to the acrylic in the same manner. The smooth surface of the light-cured acrylic usually requires no polishing. The repaired appliance is immediately ready for continued expansion (Fig 2).

Discussion

This technique for immediate, intraoral RPE expansion screw replacement has several potential applications including multistage expansion when limited patient cooperation precludes multiple outpatient appointments for new appliance fabrication; multistage



Fig 1. A hand-held light-curing unit is used to cure the acrylic when attaching the new expansion screw to the old appliance framework.

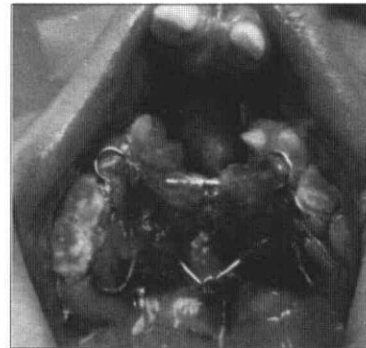


Fig 2. Newly attached expansion screw, ready for immediate, continued expansion.

expansion when any delay in continued expansion could be detrimental to treatment (postorthognathic surgery palatal expansion); or situations requiring rapid, intraoral appliance repair (general anesthesia dental rehabilitation cases).

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