**Lesion Sterilization and Tissue Repair**

A non-instrumentation endodontic treatment, which involves a tri-antibiotic mixture in a propylene glycol vehicle used to disinfect root canals.

Developed by the Cariology Research Unit of the Niigata University School of Dentistry in Japan.

Chemical cleaning of the canals, up to 40% of permanent teeth canals may still exhibit positive bacterial cultures, reducing long-term success rates of pulpectomies and extractions for non-vital teeth.

To inform dental practitioners of an alternative treatment to pulpectomies and extractions for non-vital pulp therapy in primary teeth:

**Lesion Sterilization and Tissue Repair**

A) Vestibular abscess with fluctuant swelling adjacent to mandibular right primary second molar. Radiograph shows a furcation radiolucency.

B) 4 Weeks post-op – Patient is asymptomatic. Complete soft tissue healing and increased radiodensity and trabeculation appreciated.

C) 4 Months post-op – Patient continues to be symptom free. Soft tissue remains WNL. Furcal bone shows continued healing and increase in trabeculation.

**Case #2**

A) Vestibular abscess with fluctuant swelling adjacent to the mandibular right primary first molar. Clinical exam reveals the tooth was non-vital. Radiograph shows a furcation radiolucency.

B) 3 Months post-op – Patient is asymptomatic. Soft tissue showed complete healing. The tooth was negative to percussion and palpation and had normal mobility. Radiograph demonstrates increased trabeculation in furcation area.

**Children’s Hospital of Wisconsin’s 3-Mix-MP-R Dental Paste**

Two-part system

1. Dry powder with the following ingredients:
   - Metronidazole USP
   - Ciprofloxacin HCl USP
   - Clindamycin HCl USP
   - Iodoform (Triiodomethane) USP

2. Liquid component that is mixed with the powder in the dentist’s office immediately prior to use.
   - Polyethylene Glycol 300 MW liquid
   - Propylene Glycol

**Changes in CHW’s 3-Mix Dental Paste**

- Minocycline in the original 3-Mix dental paste caused staining and discoloration of the tooth and gums.
- CHW removed Minocycline from the mixture and replaced it with Clindamycin.
- CHW added iodoform to the 3 Mix dental paste, which allows the product to be radiopaque.

**Clinical Procedure**

- Preoperative radiograph taken
- Achieve Anesthesia
- Isolate tooth with rubber dam
- Access opening performed and necrotic pulp tissue removed
- Isolate orifices of canal openings to create a medication cavity
- Walls of pulp chamber chemically cleansed with 35% phosphoric acid for 1 minute
- If any hemorrhage present controlled by applying 10% NaOCl on cotton pellet
- Place 3-Mix-MP-Rental Paste in medication cavities and over the pulpal floor
- Seal with glass ionomer (Fugi II) cement
- Restore with stainless steel crown.

**Summary/Conclusion**

- These two cases completed using CHW’s 3-Mix Dental Paste support the findings of Takushige et al and found that LSTR therapy provided an excellent alternative to pulpectomies and extractions for non-vital pulp therapy in primary teeth.

- Further Consideration - If significant swelling is noted or large furcation radiolucency is present, practitioners may want to consider systemic antibiotics. Additional studies are needed. Given the significant vestibular swelling, both patients (Case#1 and Case#2) were placed on a weekly course of systemics at the time of initial treatment.

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**References**

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