RICHMOND
ENDODONTIC CENTRE

FAIT ACCOMPLI FORMOCRESOL?

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The diluted (1:5) formocresol pulpotomy of deciduous teeth is still taught in some dental schools. This is despite five major concerns:

1. Immune Sensitisation: Formocresol use has the potential to set-up an allergic reaction to future exposures.
2. Locally Toxic: If there is a perforation, an open apex or large lateral/furcal canal present formocresol exposure will compromise the health of the local periodontium with possible systemic consequences as well. The images on the left are from a 1992 case report in the Journal of Endodontics of the periodontal changes following a perforation and formocresol pulpotomy. This 14 was extracted and an unnecessarily large defect in the local hard and soft tissue was the consequence of the incident.
3. Mutagenic: A clinical investigation has found 10% of children who received a single formocresol pulpotomy had statistically significant increase in chromosomal aberrations.
4. Carcinogenic: The International Agency of Research on Cancer (part of the World Health Organisation) classifies formaldehyde as a known human carcinogen.
5. Effectiveness: Formocresol pulpotomies are not known to be more effective than alternative treatments.

With such concerns why do many practitioners still use formocresol? It has been used in endodontics for over one hundred years and this can lead to complacency regarding its non-biocompatibility. It is less expensive than most alternative treatments. There is also possible placebo effect on practitioners who feel its strong odour conveys effective antimicrobial effectiveness. Little to no publicity has been given to the practitioners in the US who have been sued for its use.

Ferric sulphate is used by some for paediatric pulpotomies. It achieves haemostasis efficiently but can mask the true health of the remaining pulp tissue.

To the best of my ability, I could find no post-graduate endodontic programme in North America that extolls the virtues of formocresol for clinical use. The biological principles for a pulpotomy in a deciduous tooth are analogous to vital pulp therapy in a permanent tooth. The endodontic approach to paediatric pulpotomies is as follows:

Sodium hypochlorite for disinfection and haemostasis followed by MTA or similar bioactive materials

Two drawbacks for this technique are the cost of MTA and like materials and the propensity for staining of the treated tooth. It may be difficult to justify the extra expense for the long-term benefits of a bioactive material in a deciduous tooth that oft requires only short-term success. There are less expensive and non-staining bioactive alternatives to MTA. A few dental programmes substitute IRM for MTA and place a stainless steel crown for deciduous pulpotomies.

Officially formocresol use remains the standard of care. However, its use is controversial, technique sensitive, and not in the best interest of the patient. The ticket price of formocresol is low but the potential consequences of its use make it a liability for dentists to use.

Regards,

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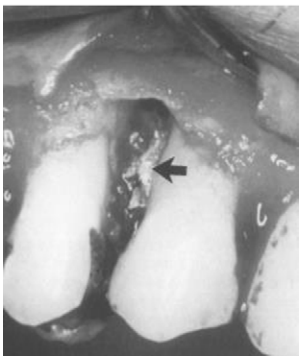

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