Original Research

Ear, Nose & Throat Journal
1–5

DOI: 10.1177/01455613231212829
journals.sagepub.com/home/ear
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Use of Topical Phenol in Awake Young Children for Tympanostomy Tube Placement

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Abstract

Importance: Phenol kits cleared by the Food and Drug Administration (FDA) are indicated as a topical anesthetic for the tympanic membrane (TM) in adults. However, there is no existing literature that reports outcomes to support the safety and use of phenol on the TM of awake children. **Objective:** Determine if topical phenol is safe and at low risk for complications and therefore be used effectively in awake children to facilitate office otologic procedures as in adults. **Design, Setting, and Participants:** Children under 21 years of age whose parents agreed to participate in an awake office setting for tympanostomy tube (TT) placement. All children had TT placement after phenol placement on the TM prior to insertion. **Main Outcomes and Measures:** TM perforation or other signs of TM complications through a minimum of 6-month clinical follow-up, along with assessment of the tolerability of the procedure by the child. **Results:** A total of 228 children with an age range of 6 months to 15.9 years and 435 TMs completed TT placement using phenol as a local anesthetic while awake in the office. There were no complications reported in the 204 children at the first follow-up visit post TM placement within 3 to 10 weeks. Of the 93 children followed up at least 6 months, there were no TM complications reported. **Conclusions:** This is the first study to report the outcomes on the use of phenol in an office setting in children. In this large experience, phenol appears to be tolerable and safe for use in young children in the office and is a potential safe choice of topical anesthesia for surgeons if they choose to perform office procedures such as myringotomies or TT placement on children.

Keywords

phenol, tympanostomy tubes

Introduction

Phenol was described as a topical anesthetic for the tympanic membrane (TM) by Bonain in 1907. Concentrated phenol for myringotomy and tympanostomy tube (TT) placement in young children and adults was introduced by Storrs in 1956.[1] It is an effective analgesic agent which works by paralyzing nerve fibers in the TM, causing full-thickness analgesia.[2] Phenol is typically used as a topical anesthetic for office TT placement in adults, with pediatric TT placement traditionally being performed in the operating room under general anesthesia (GA).

The FDA has cleared single-use phenol kits with 89% phenol and 11% water with indications for application to the TM.[3] Many otolaryngologists also report using stock phenol preparation for TT placement in adults with a reusable and sterilized applicator, and short articles have been published on the best approach to the application of phenol for this use. Preparations of stock phenol used for this purpose range from 25% to 89%.[4,5]

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Received: June 17, 2023; revised: October 7, 2023; accepted: October 20, 2023

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