

Percutaneous trigger thumb release in children: neither effective nor safe

Abstract

Background: Although percutaneous trigger thumb release has been extensively used in adults, the technique is not widespread in children. The purpose of this study was to evaluate the efficacy and safety of percutaneous trigger thumb release in the pediatric age group.

Methods: Twenty consecutive thumbs of 15 patients scheduled for surgical release of the A1 pulley were included in this cohort. Each patient received first the percutaneous release (PR) followed by an open release (OR) and served as self-controls. Thumb extension was assessed immediately before PR, after PR, and finally after OR, using a goniometer. Extent of the A1 pulley release, iatrogenic injury to the digital nerve and vessels, and flexor tendon laceration was assessed after PR. The distance between the PR and the digital nerve was measured in millimeters. Comparison between thumb extension after PR and OR was made using a paired t test.

Results: Preoperative range of motion averaged -45.2 ± 21.7 degrees loss of extension (range, -80 to -10 degrees), decreased to -4 ± 8 degrees loss of extension (range, -25 to 0 degrees) after PR, and to 0 degrees after OR. Clinically, release was complete in 14 cases (70%) and partial in 6 cases (30%). Once the thumb was approached, we confirmed that A1 pulley was completely cut in 4 cases (20%), to >75% in 2 cases (10%), and between 50% and 75% in the remaining 14 cases (70%). There were no neurovascular iatrogenic injuries. Mean distance between the needle and the digital nerve was 2.45 ± 0.9 mm (range, 1 to 4 mm). Lacerations to the flexor tendons were observed in 80% of the cases.

Conclusions: We do not recommend PR in the pediatric thumb given the risk of neurovascular iatrogenic injury or incomplete A1 pulley release.

Level of evidence: Level II therapeutic study-prospective comparative study.

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