International Journal of Medical Science and Clinical Research Studies

ISSN(print): 2767-8326, ISSN(online): 2767-8342

Volume 03 Issue 05 May 2023

Page No: 919-921

DOI: https://doi.org/10.47191/ijmscrs/v3-i5-29, Impact Factor: 6.597

Stenosing Flexor Tenosinovitis on Middle Finger (Trigger Finger), Surgical Treatment in a 1 Year Old Pacient. Case Report

Armando Hervert Hernández[1], Juan Alexis Zavala Huerta[2], Juan Manuel Narvaez Villanueva[3], Abraham Alejandro Castillo Hernández[4], Juan Carlos Mendez Chávez[5]

[1,2,3,4,5]Hospital General Regional 6, México

ABSTRACT

Trigger finger, or stenosing tenosynovitis, is a common pathology of the hand, but a low incidence of this condition has been reported in children. Its pathophysiology is poorly understood and genetic association studies are lacking. There are conservative management such as immobilization with a splint, corticosteroid injection, physical rehabilitation therapy, but the definitive treatment is usually surgical, including percutaneous release of the A1 pulley and open release of the A1 pulley.

Case report: Pediatric pacient of one year and five months is refered to plastic surgery service with diagnosis of trigger finger on middle right finger. No relevant background for the actual condition. In the physical examination it is appreciated trigger finger on the right third finger on A3 pulley with flexed finger on proximal intraphalangeal joint, we treated it with the release of the A1 pulley, proximal.

The surgical treatment on this pacient was effective. Her followship reveals a satisfactory evolution, totally increasing the finger function with no sequels or recurrences.

Conclusion: The main objective of this article is to expose the clinic case of a congenital trigger finger of a one year old pediatric pacient. It has been reported a low incidence of this condition on pediatric pacients around the world, there´s no incidence or prevalence reports in our midst. The age of presentation can vary as well as the signs and symptoms in contrast to adults, its diagnosis is clinical and depending on the degree of disease, surgical treatment may be the most appropriate.

KEYWORDS: Trigger finger, congenital anomalies, finger pulley, infant, surgical treatment, postoperative follow-up.

ARTICLE DETAILS

Published On:
23 May 2023

Available on:
https://ijmscr.org/

INTRODUCTION

Tendinopathies involving the hand and wrist are quite common. Some are easy to diagnose and in some cases, management is frankly surgical. Some of the conditions that most frequently affect the tendons of the hand and wrist include trigger finger, first extensor compartment tendosynovitis, and flexor carpi radialis tendonitis. The management of these includes non-surgical treatments such as immobilization with a splint, corticosteroid injection, physical rehabilitation therapy and finally surgical techniques such as the release of the affected tendon (3).

The main cause of entrapment of the flexor tendon at the level of the first pulley of the third finger (A1) is the thickening of its synovial sheath and/or the thickening of the fibrous sheath through which the tendon slides (4) (Figure 1).

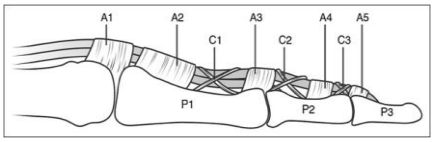

Figure 1. Anatomy of flexor tendons and the pulley system, A = annular pulleys, C = cruciate pulleys, P = phalanges (3).

In children, it is an infrequent pathology, its incidence varies from 0.05% to 0.3%, with a prevalence of 3.3 per 1,000 children. It represents only 2.2% of all congenital anomalies of the pediatric upper limb. However, it is the most frequently performed surgical procedure on children's hands. Unilaterally, it compromises the thumb in more than 90% of cases. However, around 25% are bilateral cases, without significant differences in sex or laterality (5), (6). The most frequently affected finger is the thumb, followed by the ring, middle, little and index fingers (7). The exact etiology is still unknown.

Several authors have argued that it is a congenital condition (8). Others, in more recent studies, consider that it is acquired, and potentially relate it to trauma and digital suction (9).

The most commonly used open surgical technique is the dissection and direct visualization of the A1 pulley and its subsequent division, this, and another great variety of open and minimally invasive techniques have been reported, as is the technique described by Eastwood, in which a percutaneous release of the A1 pulley is performed with a needle. (10), (11), (12).

This article aims to present a rare clinical case in relation to its adult counterpart, despite being a rare entity in the world, it is one of the main reasons for consultation for the reconstructive surgeon, surgical treatment of this condition being the procedure that is most frequently performed on the child's hand.

CASE PRESENTATION

A one-year-old, five-month-old pediatric patient is referred to the plastic surgery service with a diagnosis of trigger finger in the third finger of the right hand. No history of relevance to the current condition. The parents became aware of this condition when the patient was around six months old, the mother reports that she occasionally performed passive extension exercises on the affected finger, achieving improvement in the clinical picture, however, shortly after the finger returned to its situation in flexion.

On directed physical examination, the trigger finger can be seen on the third finger of the right hand, at the level of the A3 pulley with the finger flexed at the level of the proximal interphalangeal joint (Figure 2).

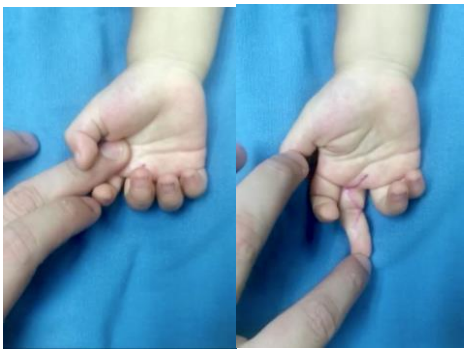

Figure 2. In the left image the middle finger is stuck in flexion, the image on the right shows the resistance of the finger to extension before the surgery.

The diagnosis was trigger finger in the third finger of the right hand, which is why it was decided to intervene surgically, performing the complete release of pulley A1, the proximal third of A2 and complete release of pulley A3 of the third finger of the right hand without incidents or complications. (Figure 3).

The patient is evaluated one month after surgery, observing a good evolution. During the directed physical examination, the absence of flexion deformity in the operated finger was observed. When performing passive flexion and extension, a fluid movement was visualized, without resistance, without triggering, adequate healing of the surgical wounds, the rest without alterations.

Figure 3. Total release of pulley A1 and A3, partial release of A2, correction of trigger finger and flexion deformity.

CONCLUSIONS

Pediatric trigger finger is a disorder of the phalangeal flexor apparatus, characterized by a resistance to sliding of the flexor tendon through a portion of the A1 pulley, where a snap may appear that may or may not be associated with pain and which in the same way can be unilateral or bilateral, is relatively rare in children, with a low incidence and prevalence in the world.

It appears more frequently on the thumb, middle finger, or ring finger, and the age of presentation is around two years. It manifests clinically as a deformity of the finger in question in flexion, which can be fixed or mobile and where Notta's node may or may not appear. The diagnosis of this condition is clinical. Treatment can be carried out conservatively or surgically, as is the case with this patient.

CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest regarding the publication of this article.

REFERENCES

I. Sood RF, Westenberg RF, Winograd JM, Eberlin KR, Chen NC. Genetic Risk of Trigger Finger: Results of a Genomewide Association Study. Plast Reconstr Surg. 2020 Aug;146(2):165e-176e. doi: 10.1097/PRS.0000000000006982. PMID: 32740585.

II. Giugale JM, Fowler JR. Trigger Finger: Adult and Pediatric Treatment Strategies. Orthop Clin North Am. 2015 Oct;46(4):561-9. doi: 10.1016/j.ocl.2015.06.014. Epub 2015 Aug 13. PMID: 26410644.

III. Adams JE, Habbu R. Tendinopathies of the Hand and Wrist. J Am Acad Orthop Surg. 2015 Dec;23(12):741-50. doi: 10.5435/JAAOS-D-14-00216. Epub 2015 Oct 28. Erratum in: J Am Acad Orthop Surg. 2016 Feb;24(2):123. PMID: 26510626.

IV. Phalen GS. Stenosing tenosinovitis : Trigger fingers and trigger thumb, Quervain's disease, acute calcifi cation in writ and hand. In:Jupiter JB, ed. Hand surgery. Baltimore, MD: Williams & Wilkins, 1982:489- 499.

V. Rekha Y. Delayed Case of Congenital Bilateral Trigger Thumb: A Case Report and Review of Literature. J Orthop Case Rep. 2014; 4(1):24–27. doi: https://doi.org/10.13107/jocr.2250-0685.143

VI. Khoshhal K, Jarvis J, Uhthoff H. Congenital trigger thumb in children: electron microscopyand immunohistochemical analysis of the first annular pulley. Journal of Pediatric Orthopaedics B. 2012; 21(4):295–299. doi: https://doi.org/10.1097/BPB.0b013e3283536962

VII. Marks MR, Gunther SF. Eficacia de inyección de cortisona en el tratamiento de dedo en resorte. J Hand Surg. 1989; 14 (4): 722-727.

VIII. **Incidence and Development of Trigger Thumb in Children** N Kikuchi, T Ogino. The Journal of Hand Surgery, 31: 541-543, 2006

IX. **Congenital bilateral trigger thumb in 3 years old girl: Acase report.** T Huwae, J Bastian, R Lukman. International Journal of Surgery Open, 13: 15-19, 2018

X. Tanaka J, Muraji M, Negoro H, Yamashita H, Nakono T, Nakono K. Subcutaneous release of trigger thumb and fingers in 210 fi ngers. J. Hand Surg. 1990;15B:463-465.

XI. Lorthior J Jr. Surgical treatment of trigger finger by a subcutaneous method. JBJS 1958;40A:793-795.

XII. Dunn M, Press G. Percutaneous Trigger Release: New Push Knife. J Hand Surg. 1999;24A:860-865.