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Clinical Case

Trigger Finger Release by Retinaculotome Pushing Knife: Technique and Case Report

Liberação do Dedo em Gatilho por Retinaculótomo: Técnica e Relato de Caso

Liberación del Dedo en Gatillo por Retinaculotomo: Técnica y Reporte de Caso

Luis Guilherme Rosifini Alves **REZENDE**
Hand, Upper Limb, and Microsurgery Division of the Department of Orthopedics and Anesthesiology of the Hospital of Clinics of the Ribeirao Preto Medical School of University of São Paulo (USP) 14049-900 Ribeirão Preto – SP, Brasil
https://orcid.org/ 0000-0002-2037-0135

Filipe Jun **SHIMAOKA**
Hand, Upper Limb, and Microsurgery Division of the Department of Orthopedics and Anesthesiology of the Hospital of Clinics of the Ribeirao Preto Medical School of University of São Paulo (USP) 14049-900 Ribeirão Preto – SP, Brasil
https://orcid.org/ 0000-0002-1475-1396

Gunter Shin Iti Takamori **SHIMABUKURO**
Hand, Upper Limb, and Microsurgery Division of the Department of Orthopedics and Anesthesiology of the Hospital of Clinics of the Ribeirao Preto Medical School of University of São Paulo (USP) 14049-900 Ribeirão Preto – SP, Brasil

Luiz Garcia **MANDARANO-FILHO**
Hand, Upper Limb, and Microsurgery Division of the Department of Orthopedics and Anesthesiology of the Hospital of Clinics of the Ribeirao Preto Medical School of University of São Paulo (USP) 14049-900 Ribeirão Preto – SP, Brasil
https://orcid.org/ 0000-0002-2774-9471

Nilton **MAZZER**
Hand, Upper Limb, and Microsurgery Division of the Department of Orthopedics and Anesthesiology of the Hospital of Clinics of the Ribeirao Preto Medical School of University of São Paulo (USP) 14049-900 Ribeirão Preto – SP, Brasil
https://orcid.org/ 0000-0002-1239-7602

Abstract

The trigger finger is a common affection commonly in the daily hand surgeon attending. The management began with non-operative methods. The absence of improvement could appoint to different operative techniques, such as open release, mini-open approaches, and percutaneous needle approaches. With respect to the open surgical approach, there are many alternatives to release the A1 Pulley, such as scalpel, pushing knives, or scissors. This study aims to present a Retinaculotome designed as a Modified Pushing Knife, to release the A1 Pulley for the management of the trigger finger.

Descriptors: Trigger Finger Disorder; Orthopedics; Surgical Procedures, Operative.

Resumo

O dedo em gatilho é uma afecção comum no dia a dia do cirurgião de mão. O manejo começa com métodos não-cirúrgicos. A ausência de melhora pode indicar diferentes técnicas operatórias, como liberação aberta, abordagens minimamente invasivas e abordagem percutânea por agulha. Em relação às abordagens abertas, existem muitas alternativas para liberar a polia A1, como bisturi, retinaculótomos ou tesouras. Este estudo tem como objetivo apresentar um Retinaculótomo Modificado, para liberar a Polia A1 para o manejo do dedo em gatilho.

Descritores: Dedo em Gatilho; Cirurgia Ortopédica; Procedimentos Cirúrgicos Operatórios

Resumen

El dedo en gatillo es una afección frecuente en el cirujano de la mano que acude diariamente a consulta. El manejo comenzó con métodos no operativos. La ausencia de mejoría podría obligar a diferentes técnicas quirúrgicas, como la liberación abierta, los abordajes miniabiertos y el abordaje con aguja percutánea. Respecto a los abordajes abiertos, existen muchas alternativas para liberar la Polea A1, como bisturí, navajas o tijeras. Este estudio tiene como objetivo presentar un Retinaculotomo diseñado como un Cuchillo de Empuje Modificado, para liberar la Polea A1 para el manejo del dedo en gatillo.

Descriptores: Trastorno del Dedo en Gatillo; Ortopedia; Procedimientos Quirúrgicos Operativos.

INTRODUCTION

The Trigger Finger is a painful and clicking condition that borrows patients for many decades. It used to be a very symbolic condition due to many alternatives to its management. Based on the Green Classification and clinical findings, the evaluation and diagnosis could appoint the management. However, the non-operative management includes NSAIDs, painkillers, physical therapy and hand therapy and used to be the first choice. Non-operative invasive steroidal injections are also available, presenting good outcomes. The natural history of the disease is closed to comorbidities (diabetes, rheumatologic diseases, thyroid diseases). Thus, the multidisciplinary approach is crucial because their control could reduce the evolution of the triggering[1-6].

In cases where the non-operative management fails, the operative remains the option. Many techniques and approaches are described: open approaches, minimally invasive approaches, and percutaneous needle release. Regarding the open approaches, the A1 Pulley release could be achieved by scalpel, scissors or pushing blades[1-9].

This study aims to present a technique and case report of a Retinaculotome or Pushing Blade developed to use in the open approach instead of the scalpel.

CLINICAL CASE

We present a case of a 60-year-old right-handed female with a trigger finger in the middle finger of the right rand and maid. She has no medical records for diabetes, thyroid or rheumatoid diseases. She complained about pain and triggering in the finger for the last two years. Nonoperative management began with NSAIDs and physiotherapy without improvement. She seeks orthopedic care after any improvement after six months. The orthopedic surgeon made two corticoid

infiltrations without any relief from the triggering.

The patient attended our hospital for a second opinion by a hand surgeon specialist. The clinical findings presented a triggering of the right-hand middle finger, unable for active extension, and pain for the passive extension. The patient didn't want to restart the nonoperative protocol and opted for the open approach with our team. We explained that we were using a Retinaculotome (pushing knife) to deliver the open approach instead of the scalpel, which the patient accepted.

- Technique Description

The patient was positioned supine using an arm board table under local anesthesia by the WALANT technique.

The open approach was landmarked over the distal palmar crease in line with the middle finger, corresponding to the A1 pulley position. The incision was made with a scalpel, and blunt dissection was made using gauze to ensure the correct A1 Pulley exposition. The use of langenbeck or Farabeuf retractors is advised (Figures 1, 2, and 3). The retinaculotome was introduced in the proximal edge of the A1 Pulley in the middle line of the finger. The retinaculotome is then pushed to a distal position, and the metacarpophalangeal joint is then flexed to stop the progression, stopping at the basis of the proximal phalanx (Figures 4 and 5). The hand surgeon can visualize the release of the tendons and pull them off for testing. The patient is asked to actively trigger the finger to confirm the release of the A1 Pulley and residual triggering. Wounds are closed, and the patient is advised to follow up with the immediate range of motion of the finger.

DISCUSSION

The management of trigger fingers is widespread in orthopedic and hand surgeons' practice. There are many alternatives to its management, including nonoperative (invasive and non-invasive methods) and operative (open, minimally invasive, and percutaneous) techniques[2,5,9].

The success of the management is related to the evaluation, diagnosis and classification of the triggering degree. The finger evolved is also crucial because the thumb and tiny fingers have some particularities for the management. Thus, understanding anatomy is strongly advised to novel techniques[1-9]. We have been using this Retinaculotome for the last ten years, without any complications. Regarding we don't use for the thumb or small finger.

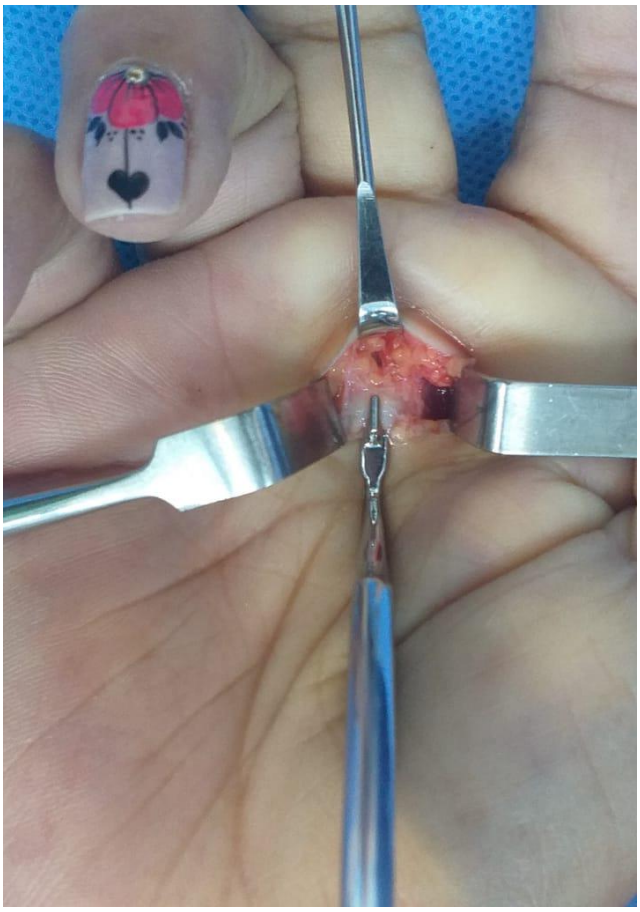

Figure 1. Intraoperative steps: positioning of the Retinaculotome.

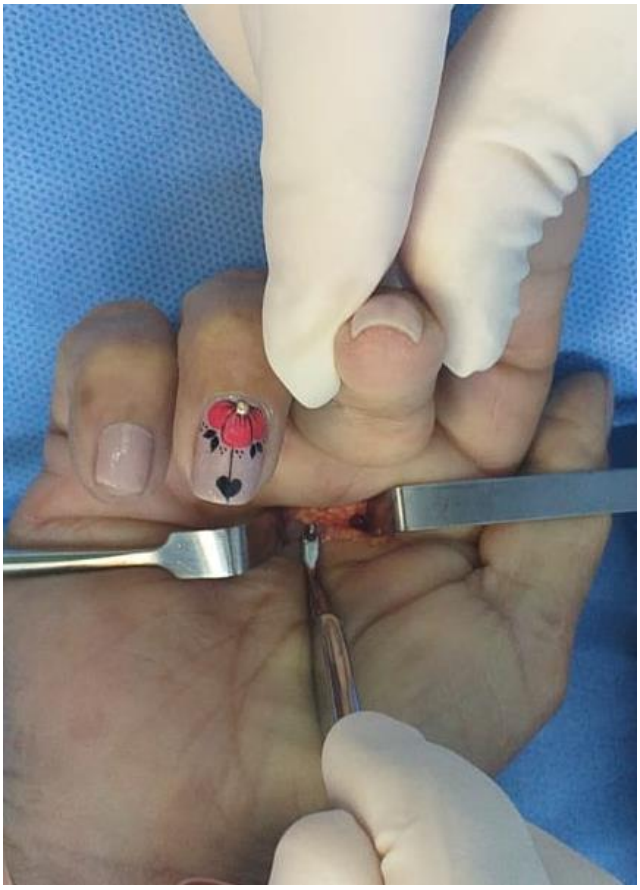

Figure 2. Intraoperative steps: metacarpophalangeal flexion to stop the pushing knife A1 Pulley release.

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The main indications are to release the A1 Pulley of the Middle, Ring and Index fingers. We also don't advise using this retinaculotome or pushing knives with the straight finger because there's a risk to the iatrogenic release of the A2 Pulley.

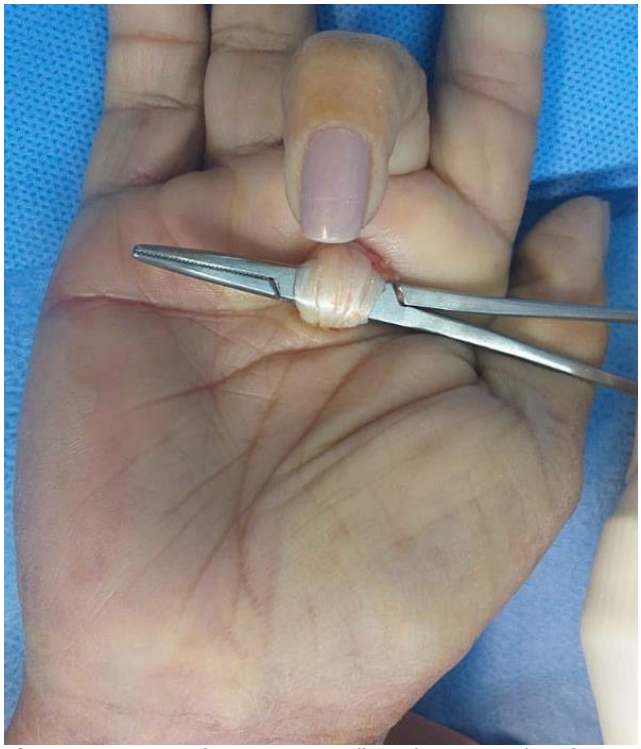

Figure 3. Intraoperative steps: A1 Pulley releases, tendons free.

Figure 4: Intraoperative active range of motion testing for assessment of residual triggering: full middle finger extension.

Figure 5: Intraoperative active range of motion testing for assessment of residual triggering: middle finger flexion.

The main advantage of using this technique is that the Retinaculotome is safe and doesn't scar the tendon above. The skin is also protected because there's a sharp blade only in the place to position the Retinaculotome.

However, there are no best methods or ways to manage a trigger finger. The expertise and technique of the surgeon are the only way to guarantee the success of the release with a small number of complications[9].

CONCLUSION

We conclude that the Retinaculotome Pushing Knife is a safe and alternative method to be used for the management of the trigger finger. But the expertise, proper training and knowledge of anatomy and materials are crucial to perform this technique.

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CONFLICTS OF INTERESTS

The authors declare no conflicts of interests.

CORRESPONDING AUTHOR

Luis Guilherme Rosifini Alves Rezende
Department of Orthopaedics and Anesthesiology of the Hospital of Clinics of Ribeirao Preto Medical School of the University of São Paulo.
Av. Bandeirantes, 3900, 11th Floor,
14900-090 Ribeirao Preto, Sao Paulo, Brazil,
E-mail: lgrezende@usp.br

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