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Preferences for the Treatment of Adult Trigger Finger: Census of Affiliated Colombian Hand Surgeons

Preferencias para el tratamiento del dedo en gatillo del adulto: Censo a los cirujanos de mano colombianos agremiados

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Abstract

Introduction Currently, there is no guideline to address adult trigger finger. The present study aims to characterize the perspectives of hand surgeons in Colombia regarding the approach to this condition, as it is estimated that their preferences currently constitute a determining factor in the management provided.

Materials and Methods A cross-sectional study that included the census of affiliated hand surgeons during 2021 in Colombia. A survey was created in conjunction with a focus group of five hand surgeons, which was distributed for completion using REDCap.

Results The response rate was of 81%. Multiple clinical factors are considered for diagnosis. The preferred initial management is a single corticosteroid infiltration, except in diabetic patients or those with a finger fixed in flexion, in whom surgery is preferred, with open release being the most popular technique. Remission is considered to occur if the symptoms are absent for at least six months, and patient satisfaction is considered the most relevant outcome to measure.

Conclusion The perspectives of the surgeons are divergent, and so are the findings in the literature. The present study highlights the need to establish a consensus regarding the approach to trigger finger, considering the relevant individual characteristics of patients and the experience of the surgeons.

Keywords
- trigger finger disorder
- surveys and questionnaires
- surgeons
- expert testimony
- acquired hand deformities

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Resumen

Introducción No existe una guía para el abordaje del dedo en gatillo. Este estudio caracteriza las perspectivas de los cirujanos de mano en Colombia frente al abordaje de esta enfermedad, pues se estima que sus preferencias constituyen actualmente un factor determinante en el manejo ofrecido.

Materiales y Métodos Estudio de corte transversal que incluyó el censo de cirujanos de mano agremiados durante el 2021 en Colombia. Se creó una encuesta junto a un grupo focal de cinco cirujanos la cual se distribuyó para su diligenciamiento en REDCap.

Resultados La tasa de respuesta fue de 81%. Múltiples factores clínicos son considerados para el diagnóstico. El manejo inicial predilecto es solamente una infiltración con corticoesteroides, excepto en pacientes diabéticos o con bloqueo del dedo, en quienes se prefiere operar, siendo la liberación abierta la técnica más popular. Se considera remisión de la enfermedad al cumplirse seis meses sin síntomas, siendo la satisfacción del paciente el desenlace más relevante.

Conclusión Las perspectivas de los cirujanos de mano divergen, así como los hallazgos en la literatura. Este estudio evidencia la necesidad de generar consensos frente al abordaje, teniendo en cuenta las características individuales relevantes de los pacientes y la experiencia de los cirujanos.

Palabras clave

- trastorno del dedo en gatillo
- encuestas y cuestionarios
- cirujanos
- testimonio de experto
- deformidades adquiridas de la mano

Introduction

Stenosing tenosynovitis of the flexors, also called trigger finger, is usually an idiopathic pathology in which a fibrocartilaginous metaplasia occurs at the level of the flexor tendon sheath of the hand, generating impingement or entrapment of it as it passes through the A1 pulley at the level of the metacarpal head.[1–4] It is estimated that this condition has a prevalence of 3% in the general population, although in diabetics it can reach even 10 to 20%, and its usual presentation is often described in women from the fifth decade of life onwards. The affection of the thumb, ring finger, and middle finger is more common, although it can also occur in multiple fingers simultaneously.[1,2,4–7] Clinically, it manifests as a triggering of the finger associated with hypersensitivity at the level of the metacarpophalangeal or proximal interphalangeal joints, sometimes with an evident palpable nodule at the level of the A1 pulley.[1,7,8] Likewise, it can cause chronic pain, deformity in the finger, rupture of the flexor tendon, and a significant functional limitation, so the importance of its timely and adequate management is clear.[1]

Currently, however, there is no consensus in the literature on the ideal approach to this disease. Firstly, no clinical classification has proven to be superior in defining severity and management, which also explains why different factors or characteristics of patients are considered when choosing treatment, performing follow-up and predicting outcomes[9]. On the other hand, the usefulness of non-invasive management is a matter of controversy, so the preferred initial management tends to be corticosteroid injection, although the course of action in the case of recurrence is not clear, and it is considered that this can even vary depending on the duration of the condition[1,9–12]. Additionally, it is still necessary to establish in which cases the most favorable initial management is surgical, as well as the ideal technique (open or percutaneous release, transverse or longitudinal incision).[6]

Based on the aforementioned information and also considering that there tends to be a delay in the adoption of available evidence, it is presumed that the current management of patients is significantly influenced by the specialist's judgment.[13] Therefore, the objective of the present study is to characterize the perspectives and preferences of hand surgeons in Colombia regarding the approach to trigger finger in adults, aiming to clarify the landscape regarding the management of this condition in the country.

Materials and Methods

A cross-sectional study was carried out, with the target population being all hand surgeons who were members of Colombian Association of Hand Surgery (Asociación Colombiana de Cirugía de la Mano, Asocimano, in Spanish) and/or the hand chapter of the Colombian Society of Orthopedic Surgery and Traumatology (Sociedad Colombiana de Cirugía Ortopédica y Traumatología, SCCOT, in Spanish) in the first half of 2021. A sample calculation was not necessary, since the aim of the present study was to carry out a census.

To assess the perspectives of surgeons, a survey was developed based on the researchers' experience and the available literature. Relevant demographic variables were collected, including the first specialty pursued, years of experience, practice setting, and frequency of treating patients with trigger finger. Additionally, surgeons' perspectives on three relevant topics were evaluated: the approach (specifically, the relevance of using classifications, considerations to direct management, outcomes to consider in the evaluation, and the waiting time to consider referral or recurrence), non-surgical treatment (opinions on the use of orthoses and physiotherapy, as well as on infiltration in

terms of its effectiveness, complications, number of injections to offer, choice of corticosteroid, and approach to recurrence), and the surgical treatment (indications for its selection as initial management, its use in diabetic patients, preference for open or percutaneous technique, type of anesthesia, and perspective on the use of orthoses during the postoperative period).

The resulting survey was subjected to a review by a focus group of five hand surgeons affiliated to the organizations of interest, who were considered suitable given that they met the eligibility criteria and because they presented heterogeneous characteristics of the population spectrum, as they had different years of experience, work experience in different regions of the country, and had completed different postgraduate degrees (Orthopedics and Traumatology and Plastic Surgery). ►**Diagram 1** shows the general structure of the final tool, however, the complete version of it is found in ►**Annex 1**.

With the appropriate authorization, the databases of the members of Asocimano and the SCCOT were obtained to distribute the survey, and each of the surgeons was contacted directly to inform them about the justification and objectives of the study and request their participation with the aim of reducing non-response selection bias. On the other hand, to avoid the Hawthorne effect, it was emphasized to the surgeons that what was intended to be evaluated through the survey was their perception and preferences regarding management, not their theoretical knowledge.

The survey was completed by the surgeons electronically on the REDCap platform. Measures were taken to avoid duplicate responses and missing data, and the surgeons were given three months to respond before completing data collection.

The analysis of the data obtained was carried out through the R and R studio programming language using the pwr package (R Foundation for Statistical Computing, Vienna, Austria). For the qualitative variables, calculations of absolute and relative frequencies were performed, and for the continuous variables, measures of central tendency and variability were used. Likewise, a differential analysis was carried out based on the length of experience of the surgeons and the first specialty studied, and differences between these two groups were calculated using the Chi-squared test for the qualitative variables (evaluating differences in proportions) and, for the quantitative variables, the Shapiro-Wilk normality test and subsequently the Wilcoxon test (for the comparison of means between two groups), since no variable had a normal distribution. A significance level of 0.05 was considered beforehand.

The present study adhered to the principles outlined in the Declaration of Helsinki and to the technical and scientific standards indicated by the Colombian Ministry of Health for the conduction of studies. According to these standards, as the present work was classified as "no risk," it did not require a process of informed consent. However, it did require obtaining authorization from the Ethics Committee atr Hospital Universitario San Ignacio, in Bogota, Colombia.

Results

In 2021, 154 hand surgeons were affiliated in Colombia, so the present study managed to include up to 81% of the expected census (125 surgeons). Additionally, it was considered that the respondents were familiar with trigger finger management, since 86% reported treating this condition at least once a week, and 14%, at least once a month. The

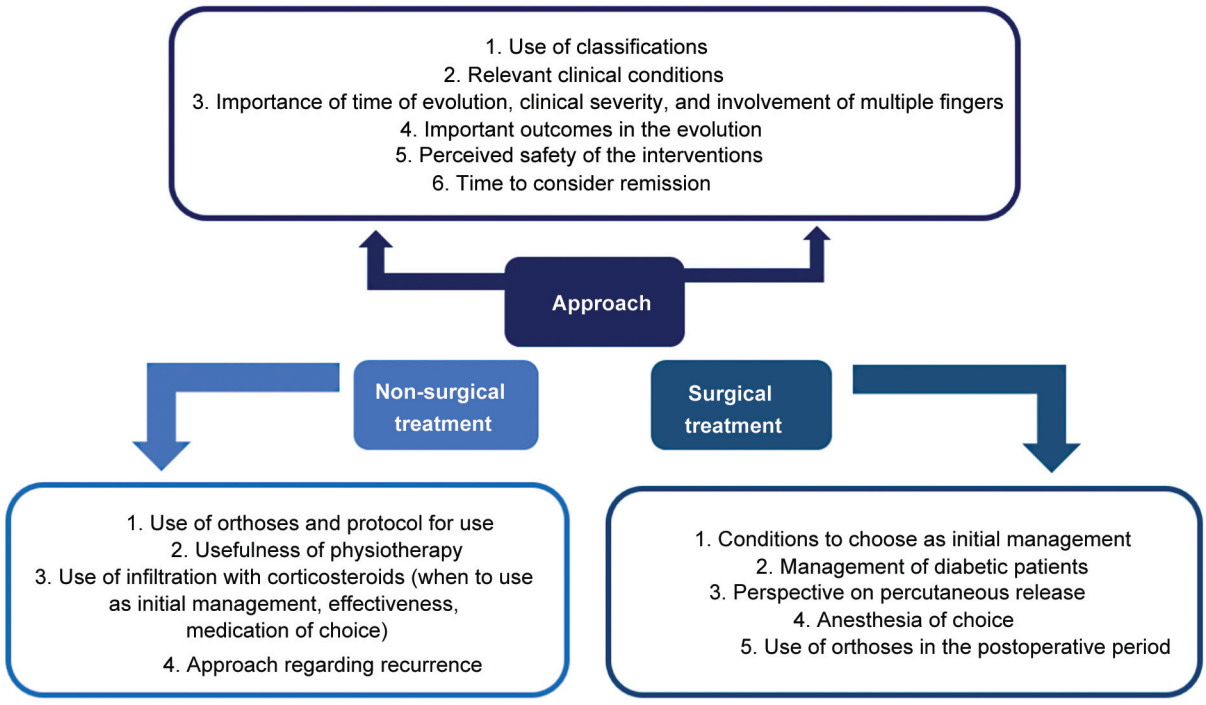

Diagram 1 Structure of the survey administered to affiliated Colombian hand surgeons.

Table 1 Demographic characteristics of affiliated Colombian hand surgeons

	Absolute frequency and proportion	Median years of experience	Mixed practice (public health insurance system, occupational risk administrator, university, and/or private)	Private practice	University practice
Hand surgeons	125 (100%)	11	74.4%	11.2%	14.4%
Orthopedists and traumatologists	100 (80%)	11	73%	13%	14%
Plastic surgeons	25 (20%)	10	80%	4%	16%

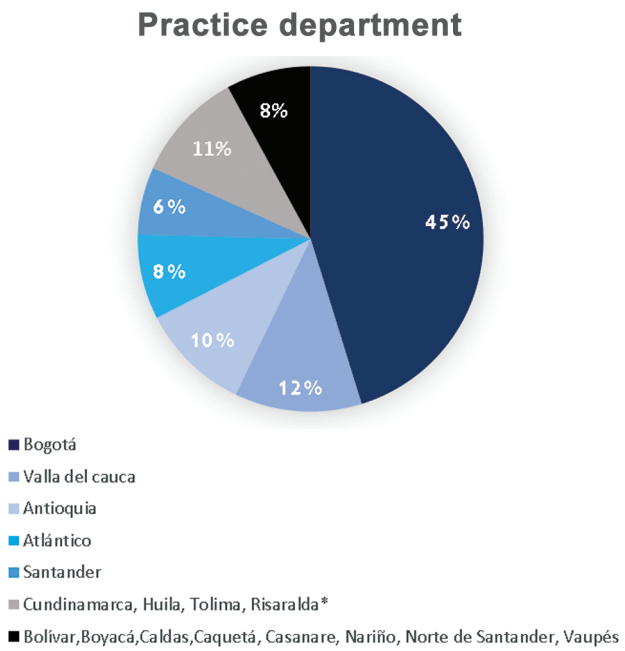

Diagram 2 Proportion of hand surgeons in each practice department.

demographic characteristics of the evaluated population are described in ►**Table 1** and ►**Diagram 2**.

The opinions regarding the three aspects of controversy in the literature are reported below.

Perspectives regarding the evaluation of trigger finger

As evidenced in ►**Table 2**, most surgeons (72%) consider it necessary to routinely use a clinical classification to define the severity and treatment of trigger finger. Although the instrument of choice is a matter of controversy, it is clear that the minimum aspects that are considered include the severity of the condition (90%), the time of evolution (62%), the involvement of multiple fingers (49%), and the presence of rheumatoid arthritis (44%), as these are the most relevant factors for surgeons.

Additionally, there is no consensus on which outcomes should be considered to establish the response or failure to management, which is reflected in the heterogeneous distribution of the variables in ►**Table 2**. However, it is noteworthy that, for the general population, the development of adverse events is the least important outcome, with corticosteroid injection being perceived as the safest procedure, and percutaneous release, considered the most unsafe.

Likewise, it is worth highlighting the existence of a difference in the surgeons' responses depending on their expertise, given that, while surgeons with more than 12 years of experience consider that patient satisfaction is the most important factor to take into account, surgeons with less than 11 years of experience prioritize the cessation of the finger block or fixed position of the finger if this was previously present.

On the other hand, most surgeons (68%) wait a minimum follow-up time of 6 months to consider disease remission, although 32% believe that a shorter follow-up may be sufficient. At this point, there is a greater tendency among plastic surgeons to wait more than 6 months before considering remission compared to orthopedic surgeons (71% vs. 54%, respectively).

Perspectives against conservative treatment

Conservative management of trigger finger includes therapy with nonsteroidal anti-inflammatory drugs (NSAIDs), orthoses, shock waves, physical therapy, activity modification, and local injection with corticosteroids. However, not all of these alternatives are well accepted by Colombian surgeons, as shown in the ►**Table 3**.

For 93% of the respondents, orthoses have no clinical usefulness in patients with trigger finger, and only 7% include them in the routine management, preferring a regimen of nightly use for 1 to 12 weeks. Conversely, perspectives on physiotherapy vary: 30% do not consider it indicated at all, 41% occasionally recommend it as sufficient initial management, and only 25% believe it should be part of the routine management.

In contrast, 70% of the surgeons support infiltration with corticosteroids as initial management, and the perceived effectiveness of this intervention is greater than 50% for more than half of those surveyed (72%). Additionally, the preferred corticosteroid for infiltration is triamcinolone (56%), followed by betamethasone (22%), while 16% of the surgeons are indifferent to the corticosteroid used.

However, in cases of recurrence, the surgeons consider on average that only 1 additional infiltration should be administered, spaced apart from the first by at least 17 days. Furthermore, when analyzing this opinion based on years of experience, surgeons who have practiced for more than

Table 2 Relative frequencies of the perspectives on trigger finger approach

Approach: initial evaluation and follow-up	$n = 125$
Routine use of some classification	
Yes	72%
No	28%
Conditions to consider in the therapeutic plan	
Rheumatoid arthritis	44.40%
Multiple fingers affected	36.30%
Mellitus diabetes	34.70%
Patient occupation	33.10%
Association with carpal tunnel syndrome	28.20%
No condition	15.30%
Trigger thumb	8.90%
Initial management depends on the time of evolution	
Yes	62.40%
No	37.60%
Initial management depends on the severity of the condition	
Yes	90.40%
No	9.60%
Initial management changes if multiple fingers are affected	
Yes	48.80%
No	51.20%
Outcomes to evaluate response to treatment	
Patient satisfaction	27.77%
Resolution of finger locking	27.77%
Resolution of trigger finger	22.22%
Pain and hypersensitivity	12.69%
Functionality measured through the DASH	7.93%
Development of adverse events	1.58%
Procedure with the least amount of perceived adverse effects	
Corticosteroid infiltration	48.80%
Open release	46.40%
Percutaneous release	4.80%
Time to consider remission	
Minimum 2 weeks	2.50%
Minimum 4 weeks	9.10%
Minimum 6 weeks	6.60%
Minimum 8 weeks	14%
More than 6 months	67.80%

Abbreviation: DASH, Disabilities of the Arm, Shoulder and Hand questionnaire.

12 years tend to wait less time to repeat the procedure than those with less experience.

The opinion on the approach to take in the event of a recurrence also varies depending on the time that has passed since the infiltration. Surgeons prefer the surgical procedure to repeating the infiltration if the recurrence has occurred in fewer than 6 months (80%). In contrast, if between 6 and 12 months have passed since the infiltration, the consensus is lower, since only 65% propose surgery, and if more than a year has passed, the number of surgeons offering surgery drops to 51%.

Perspectives on surgical treatment

Regardless of the technique, surgical management is the initial choice for surgeons when the patient is diabetic (open release), if constant finger blockage occurs (61%), when it is the patient's desire to undergo surgery (51%), when there are multiple affected fingers (22%) or, for 12%, in the majority of patients regardless of their conditions, as evidenced in ►**Table 4**.

Most surgeons prefer open release over percutaneous release (74% perform the latter in less than 10% of their cases), and the anesthesia of choice is predominantly the Walant technique or local anesthesia with a bloodless field.

Additionally, in accordance with what has been reported regarding the conservative management, there is also homogeneity in the opinion of avoiding the use of orthoses during the postoperative period (98% of the surgeons).

Discussion

Although trigger finger is a prevalent pathology in hand surgery consultations, there is still no protocol that guides its approach and management. In the absence of a consensus, the perspectives and preferences of hand surgeons significantly influence the management offered, which is why the present study aimed to characterize them in Colombia.

To achieve this objective, a survey was carried out to explore opinions regarding the main controversies found in the literature. This instrument was evaluated by a focus group representative of the population, and pertinent modifications were made before its application. Although it was not possible to capture all the member surgeons, a high response rate was obtained (81%) compared to previously published surveys that have had lower response rates (42–53%).[14]

Although the surgeons' responses could have been affected by the Hawthorne effect, we sought to partially control its presence, emphasizing to the participants that we did not want to evaluate their knowledge of the available literature or directly estimate their actions in the clinical practice, but rather, to measure their opinion against the survey items. The heterogeneity of the responses is considered a reflection of the degree of control that could be achieved over this bias.

The survey was structured around three aspects: the approach to the pathology, controversies about conservative management, and controversies about surgical management, considering that there could be divergence in medical judgment regarding these three topics.

Table 3 Relative frequencies of perspectives on conservative management of trigger finger

Non-surgical management	$n = 125$
Use of orthoses in routine management	
Yes	7.20%
No	92.80%
Orthosis use protocol	
Does not indicate the use of orthoses	85.60%
Night	7.20%
Only when performing activities that cause triggering	3.20%
Day	3.20%
Patient preference	0.80%
Weeks to consider management failure with orthoses	
Range	0–12
Median (interquartile range)	0 (0)
Mean(±standard deviation)	0.64(±1.99)
Use of physical therapy in the initial management	
Occasionally	40.80%
Never	30.40%
Yes, to all or almost all patients	24.80%
When the condition is severe	4%
Initial management with corticosteroid infiltration	
Always or almost always	60.80%
If the clinical case is severe	22.40%
Never or almost never	16.80%
Preferred medication for infiltration	
Triamcinolone	56%
Betamethasone	22.40%
Indifferent	16.80%
Methylprednisolone	3.20%
Dexamethasone	1.60%
Perceived effectiveness of infiltration	
< 50%	27.20%
50–75%	42.40%
> 75%	30.40%
Recurrence of corticosteroid infiltration	
How many days do you wait to infiltrate again?	
Range	0–180
Median (interquartile range)	0 (30)
Mean(±standard deviation)	17.37(±36.39)
How many infiltrations before operating	
Range	0–3
Median (interquartile range)	1 (1)
Mean(±standard deviation)	1.34(±0.69)
If fewer than 6 months have passed since the infiltration	
Recommends surgery	79.80%
Repeats infiltration	20.20%
If 6 to 12 months have passed since the infiltration	
Recommends surgery	64.80%
Repeats infiltration	35.20%
If more than 12 months have passed since the infiltration	
Recommends surgery	51.20%
Repeats infiltration	48.80%

First, the perception of the usefulness of clinical classifications as a standardization method and approach guide was evaluated. Although most surgeons reported the favorability of their use, previous surveys[9] have shown that the actual rate of implementation of these instruments is of only 30%. This is explained because although up to five tools have been described in the literature,[4,9] the superiority of one of them has not yet been defined according to their predictive value.

On the other hand, these tools do not include all the variables that have been identified in the literature as important or predictive. These include baseline patient characteristics (such as the presence of diabetes mellitus and occupation), as well as findings from the physical examination indicating the severity of the condition (such as involvement of the thumb, deformity in flexion of the proximal interphalangeal joint, and flexor tendon injury), and the course of the clinical condition (such as symptoms lasting more than two years or requiring more than two or three injections).[15,16] Likewise, they do not consider other additional variables that, under the criteria of Colombian surgeons, should be taken into account, such as the presence of rheumatoid arthritis, the condition of multiple fingers or the association with carpal tunnel syndrome.

Once management is established, most surgeons consider it necessary to wait at least 6 months to consider that there is remission of the trigger finger; however, there is no consensus in the literature that establishes the most important variables to define whether there is a favorable response to treatment or not. This explains why none of the proposed outcomes have a percentage of acceptance higher than 30% among surgeons, although a tendency is observed to prioritize patient satisfaction and the resolution of factors that indicate clinical severity, such as finger blockage.

Regarding the conservative treatment, the literature does not support monotherapy with NSAIDs or physical therapy to resolve trigger finger, which aligns with the low favorability

Table 4 Relative frequencies of the perspectives on surgical management of trigger finger

Surgical approach	$n = 125$
Surgical release as initial management	
When there is constant blocking of the finger	60.50%
By patient preference	50.80%
When multiple fingers are affected	21.80%
In most patients	12.10%
Hardly ever	11.30%
Ideal management in diabetics	
Open release	88.80%
Corticosteroid infiltration	4.80%
Percutaneous release	4.00%
Use of orthoses	2.40%
Frequency of use of percutaneous release	
Frequently (> 50% of the cases)	8.80%
Occasionally (10–50% of the cases)	16.80%
Never (< 10% of cases)	74.40%
Type of anesthesia	
Walant local anesthesia	41.60%
Regional anesthesia with bloodless field	41.60%
Regional anesthesia	13.60%
General anesthesia	3.20%
Postoperative immobilization with orthoses	
Yes	2.40%
*Fewer than 2 weeks	1.60%
*More than 4 weeks	0.80%
No	97.60%

of Colombian surgeons towards these approaches.[9,17] Additionally, although orthoses are preferred by patients over invasive treatments,[18] their usefulness lacks sufficient evidence. While some studies[1,9,19–22] support their use, ensuring a success rate between 53% and 88%, other studies[9,23] refute their effect on outcomes. Consequently, most hand surgeons, regardless of their years of experience or primary specialty, consider orthoses to have no clinical usefulness for this condition, regardless of their regimen of use.

Within the initial conservative management, infiltration with corticosteroids is the most accepted. Specifically, 83% of the respondents supported its use, primarily with triamcinolone. Although this percentage of acceptance is close to that reported by other hand surgery societies, the literature is still divergent regarding the usefulness of infiltration.[14] Although in 2009 the Cochrane collaboration reported moderate evidence to support corticosteroid infiltrations, arguing greater effectiveness than the use of placebo or anesthetic monotherapy, these conclusions were obtained only from two randomized clinical experiments with questionable methodology and that evaluated the therapy essentially in the short term.[4,17] Additionally, a meta-analysis[10] conducted in 10 clinical experiments in 2019 compared corticosteroid therapy against the rest of the therapeutic alternatives (surgical and conservative managements), concluding that both groups presented comparable improvement in symptoms and complications, although the recurrence rate was significantly higher in those patients managed with corticosteroid infiltration (relative risk [RR]: 19.53; 95% confidence interval [95%CI]: 6.23–61.19; $p = 0.000$).

The popularity of infiltrations may be explained by the fact that most surgeons estimate a success rate of more than 50% with this intervention; however, in a previous study,[24] recurrence was reported 12 months after infiltration in 48 to 65% of the patients, of whom up to 18% ultimately required surgical release.

In any case, if this management is chosen and a recurrence occurs, the surgeons surveyed consider on average that only a single repetition should be performed, and that the minimum waiting time before injecting corticosteroid again should be an average of 17 days. However, it is necessary to mention that this decision varies depending on the time elapsed between treatment and recurrence, since a greater preference for surgical intervention is reported if the recurrence has occurred in fewer than 6 months, while it is almost comparable if more than a year has passed after infiltration (49% and 51%, respectively).

Although there are no studies evaluating outcomes based on the number of injections administered, the temporal spacing between them, their method of administration (which can be subcutaneous or within the tendon sheath), nor have detailed considerations been established to discontinue therapy and intervene surgically in a patient, the European consensus suggests performing up to three injections, while North American surgeons report a preference for up to two injections before considering refractoriness.[9,17,24,25]

In general, this could be an alternative as the initial management, except in diabetic patients, who tend to present a lower response rate, so surgical intervention is preferred as the first line of management.[1,24,26,27] Other predictors of recurrence to take into account should be early presentation, the presence of multiple trigger fingers, diabetes mellitus, and other tendinopathies of the upper extremity.[24]

Regarding surgical management, although it can present a cure rate of up to 97%, it is not usually the first line of choice, as it entails high costs, prolongs the time of return to activities, and can result in complications inherent to any invasive management.[4,6,9] However, 60% of the surgeons consider that this should be the initial intervention when there is constant blockage of the finger or if the patient is diabetic (89%).

Specifically, there are two surgical modalities, with open release being preferred in Colombia over percutaneous release, which is considered riskier. This perception corresponds to the review carried out in 2018 by Cochrane,[6] in which it was concluded that management with open surgery generated an absolute reduction in the risk of recurrence in the medium and long terms of 29% compared to injection

with corticosteroids, while percutaneous surgery did not offer any benefit in terms of resolution and recurrence of trigger finger when compared with infiltration. With the information available, however, it was not possible to conclude which intervention presented a lower rate of adverse events, so it is necessary to keep in mind that, although the percutaneous technique implies a shorter surgical time and a faster return of the patient to their activities (due to a lower risk of infection of the surgical site, hypertrophic scar, and prolonged pain), one cannot ignore the potential risk of injury to the adjacent structures by not enabling direct visualization, as in the open release.[6,7,9]

Considering the aforementioned explanations, studies are still required to guide the approach to trigger finger and to standardize its management to a greater extent so that it does not only depend on the surgeon's beliefs but also relies on evidence-based medicine. In this way, the present survey made it clear that studies are required to evaluate the predictive value of existing classifications, as well as to validate new instruments that consider not only the findings of the physical examination, but also clinical factors inherent to the patient's clinical condition that are relevant for surgeons.

On the other hand, regarding treatment, it is necessary to evaluate the effectiveness of triamcinolone compared to other medications and define what is the maximum number of infiltrations that is appropriate to offer to a patient with trigger finger, how far apart the infiltrations should be, and what is the influence of the outcomes on the time elapsed since the initial intervention.

Finally, it is also considered necessary to characterize the preferences of patients in Colombia regarding the conservative and surgical managements, considering that these opinions constitute a pillar to be taken into account in the construction of a management guide.

Conclusion

Although trigger finger is a common condition in hand surgery consultations, currently there is no clinical practice guideline that generates consensus regarding its management and follow-up. Therefore, it is estimated that the approach Colombian patients receive depends largely on the perspectives of hand surgeons. The divergence in the perspectives of surgeons expressed here is mainly explained by the lack of consensus regarding the available evidence. Therefore, studies are needed to unify the perspectives of hand surgeons regarding the management algorithm of trigger finger, without neglecting the importance of individualizing management according to the severity of the clinical condition, duration of the disease, previous treatments administered, and, overall, the surgeon's experience and the patient's personal preferences.[9,18]

Conflict of Interests

The authors have no conflict of interests to declare.

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