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Review Article

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The Management of Trigger Finger: A 5-Year Retrospective Review

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Introduction

Stenosing tenosynovitis, generally known as Trigger Finger (TF), is a common hand disorder characterized by pain and locking of the affected digit, which is often found on the dominant hand [1-3]. This locking occurs when swelling or thickening of the flexor tendon restricts its ability to glide through the A1 pulley during flexion or extension [4, 5]. The general population has a two percent lifetime risk of developing trigger finger, with an average age of onset of 50 years [6, 7]. Women are affected up to six times more than men and diabetics have an increased risk of 10% [8, 9]. Although all digits are susceptible, evidence has shown the ring finger and thumb to be the most affected [10].

Trigger finger remains an idiopathic condition, however several associated factors have been identified including forceful or repetitive gripping; trauma to the hand/finger; and comorbidities including diabetes mellitus, rheumatoid arthritis, and carpal tunnel syndrome [8]. Practitioners generally use clinical judgement to assess the severity of trigger finger. However, experts agree that the usage of a grading scale, such as the Quinnell grading scale, would be a beneficial addition to Trigger Finger management [4]. The current literature offers numerous treatment modalities ranging from non-surgical to surgical alternatives. Non-surgical options include splinting, activity modification, anti-inflammatory medication, and steroid injection [5, 11]. Surgical options are percutaneous release, endoscopic release, and open release [3, 12, 13]. Surgery is an effective last resort and is often performed on diabetics, who do not respond well to steroid injections [3, 6, 8].

There is no treatment consensus across the literature and so further investigation is warranted. Steroid injections continue to be the recommended first line of treatment for Trigger Finger management, however the efficacy data for steroid injections has been both conflicting and scarce [7, 14]. Previous studies have reported that the efficacy of injections could reach up to 90% [15, 8]. Recent literature has shown efficacies ranging from 30% to 70% [2, 4, 14]. Moreover, recurrence rates have been reported within 1 year of treatment, ranging between 15% to 35% [1, 16, 17]. On another note, recent studies have reported that injections are equally effective in both non-diabetics and diabetics [2, 10, 15]. Other studies have reported a lower effectiveness in diabetics and have opined that diabetics should opt for surgical treatment [6, 8, 14]. This retrospective review aimed to assess the effectiveness of Trigger Finger management of up to n=150 patients over a five-year span, who were referred to and/or treated for a diagnosis of Trigger Finger at Toronto Western Hospital Fracture Clinic. The primary objective was to determine the recurrence of Trigger Finger in patients who were treated by one Orthopaedic Surgeon at a single Clinic site. The secondary objective was to address the variables involved with Trigger Finger management that impact treatment outcome.

Methods

Data from patients who were diagnosed with Trigger Finger at Toronto Western Hospital were included in the chart review. This sample provided a representation of Trigger Finger patients treated at Toronto Western Hospital Fracture Clinic. Eligible patients received an initial diagnosis of Trigger Finger and been referred to and treated at Toronto Western Hospital between Jan 1st, 2014 to Dec 31st, 2019. Data collected from eligible patient charts included: age (at time of treatment), gender, the afflicted hand & finger's, diagnostic method confirming condition and/or severity, relevant comorbidities, previous treatments, treatment provided, and recurrence. Each patient was assigned a unique study ID that was associated with their data in order to ensure confidentiality. The data collection form only included de-identified data. A descriptive analysis approach was used to summarize study data, find patterns, and address the study objectives. Single variable analysis was performed by examining three major characteristics: distribution, central tendency, and dispersion of data. Distribution included frequency (i.e. # of males vs. females affected), and percentage data (i.e. recurrence of Trigger Finger). Central tendency included

mean, median, mode calculations. Dispersion included standard deviation calculations to measure variation.

Results

The study cohort consisted of 110 patients, with an average age of 61.9 (SD 12.5), more prominent in females (51%) than males (49%). There were 42 identifiable cases occurring in the dominant hand and 17 non-dominant hand cases. The most affected digits were the long finger (35%), ring finger (28%), and thumb (27%). Out of the 110 patients, there were 139 trigger fingers. About 62% cases were unilateral trigger finger, whereas 38% were cases of multiple digits (two or more). Roughly 69% of multiple digit cases involved both hands, whereas 31% involved one hand. Significant co-morbidities included carpal tunnel syndrome (29%), diabetes mellitus (27%), osteoarthritis (17%), and DuPuytren's contracture (15%). Over 95% of patients responded well to steroid injection. Five patients required open-release surgery with an average tourniquet time of 14 minutes. Overall, there were four total recurrences in patients; two recurrences from steroid injection; and two recurrences from NSAID treatment. Of the 11 diabetic cases, involving two open-releases and nine steroid injections, there was one steroid injection recurrence. Complications of open release included keloid formation and transient numbness of the digit.

Discussion

While the findings of our study are unlikely to fill gaps in knowledge, they provide validation for inconsistent observations found in previous literature. This study not only aimed to evaluate the management of Trigger Finger at a single Clinic site, but to act as an appraisal tool to gain insight for future research development.

Despite there not being a gold standard for Trigger Finger management, steroid injections have remained the top choice for the first line of treatment. Our study findings have been consistent with the literature arguing that steroid injection efficacy could reach up to 90% or higher [8, 15]. Our findings showed 98% (94/96 cases) efficacy using a single steroid injection to treat Trigger Finger. Some studies have argued that diabetic patients should avoid steroid injections, due to complications, and opt for surgical treatment [8, 15]. Nearly 9% (1/11) of our diabetic cases resulted in recurrence after steroid injection; however, this data would not be sufficient enough to support or refute previous claims from the literature. Overall, practitioners can confidently consider steroid injections as a first line of treatment and expect great results.

Past literature has reported an average age of onset of 50 and have stressed that women are six times as likely to be afflicted with Trigger Finger [6, 7, 10]. Our findings showed an average age of onset of 61.9 with 51% of the population being women and 49% being men. These findings slightly support the claim that women are more likely to get Trigger Finger than men. One study observed the relationship between comorbidity and Trigger Finger onset; however, there was no significant correlation [10]. The reason why women are more likely to be affected is still unclear and warrants further investigation.

There were several limitations with our study. Due to the retrospective design it is likely that not all relevant risk factors were identified and recorded. Using data that was not recorded for research intent may not be of high quality. This impacted our ability to record consistent information pertaining to disease severity and previous treatments. The single Clinic site did not have a mandated recall mechanism in place so patients were instructed to return on a PRN-basis. It is possible that patients who still experience symptoms may not return for further treatment after injection/surgery. This differential loss to follow-up introduces a bias to our study findings which may impact the power of our efficacy data. Regarding the diagnostic method, clinical judgement was used with no assistance using a Quinnell grading or Green's classification tool. Although these tools are not required, it would have been valuable to record a change in severity grade before and after treatment along with measuring a potential change in the range of flexion. Finally, the study was piloted at a single site in a major city, potentially limiting the generalizability of our findings.

Despite results from our study supporting previous literature, which observed high efficacy of steroid injection use, future research should focus on prospective studies and/or randomized controlled trials as there is still a lack of robust data, which is required for increased validity. Future prospective studies should include variables such as occupation, change in range of flexion, change in severity, and smoking status. With the addition of these variables, objective measures can be obtained to precisely assess the effectiveness of treatment plans. Efforts have been placed around attempting to improve diagnosis and non-invasive treatment methods, which would not benefit the patients in this case. Multiple researchers have considered extracorporeal shock wave therapy where a reduction in symptoms persisted for only 18 weeks after intervention in patients, with little to mild complications of Trigger Finger [18]. Another group of researchers have suggested ultrasound guided diagnosis despite strong support for relying solely on clinical judgement, Quinnell grading, and Green's Classification [9]. The main focus for future research for Trigger Finger management should focus on improving cost-efficiency and efficacy of surgical treatment. Although open release is considered the gold standard, this modality could possibly be improved by utilizing wide awake local anesthesia and the no tourniquet method which is touted to improve cost-efficiency without sacrificing efficacy. Two recent studies have observed assuring outcomes such as decreases in pain score, low risk for complications, and decreases in operational spending [11, 19]. These findings call for further study as this could potentially improve patient outcomes by saving time and lowering costs for treatment providers.

Conclusion

Overall, the overwhelming majority of patients responded well to steroid injections of the flexor tendon sheath by the treating Surgeon. Open release remains the gold standard of surgical treatment. Patients should be advised at the time of injection that they may expect recurrence at one year, at which point they may decide to opt for continued conservative treatment or operative intervention.

References

1. R Amirfeyz, R McNinch, A Watts, J Rodrigues, T R C Davis, et al. (2016) Evidence-based management of adult trigger digits. Journal of Hand Surgery (European Volume) 42: 473-480.
2. Dala Ali B, Nakhdjevani A, Lloyd M, Schreuder F (2012) The

Efficacy of Steroid Injection in the Treatment of Trigger Finger. Clin Orthop Surg 4: 263.
3. Fiorini H, Tamaoki M, Lenza M, Gomes dos Santos J, Faloppa F, et al. (2018) Surgery for trigger finger. Cochrane Database of Systematic Reviews 2: 1-118.
4. Huisstede B, Hoogvliet P, Coert J, Fridén J (2014) Multidisciplinary Consensus Guideline for Managing Trigger Finger: Results from the European HANDGUIDE Study. Phys Ther 94: 1421-1433.
5. Langer D, Luria S, Michailevich M, Maeir A (2016) Long-term functional outcome of trigger finger. Disabil Rehabil 40: 90-95.
6. Lunsford D, Valdes K, Hengy S (2019) Conservative management of trigger finger: A systematic review. Journal of Hand Therapy 32: 212-221.
7. Siddiqui A, Rajput I, Adeel M (2019) Outcome of Percutaneous Release for Trigger Digits in Diabetic and Non-Diabetic Patients. Cureus 11: 4585
8. Makkouk A, Oetgen M, Swigart C, Dodds S (2007) Trigger finger: etiology, evaluation, and treatment. Curr Rev Musculoskelet Med 1: 92-96.
9. Mifune Y, Inui A, Sakata R, Harada Y, Takase F, et al. (2016) High-resolution ultrasound in the diagnosis of trigger finger and evaluation of response to steroid injection. Skeletal Radiology 45: 1661-1667.
10. Shah A, Rettig M (2017) Trigger finger: location and association of comorbidities. Bull Hosp Jt Dis 75: 198-200.
11. Ketonis C, Kim N, Liss F, Zmistowski B, Matzon J, et al. (2016) Wide Awake Trigger Finger Release Surgery. HAND 11: 177-183.
12. Huang H, Wang J, Wang S, Liu Y, Huang Y, et al. (2015) Outcomes and complications after percutaneous release for trigger digits in diabetic and non-diabetic patients. Journal of Hand Surgery (European Volume) 40: 735-739.
13. Liu W, Lu C, Lin Y, Huang P, Lin G, et al. (2016) Outcomes of percutaneous trigger finger release with concurrent steroid injection. Kaohsiung J Med Sci 32: 624-629.
14. Dardas A, VandenBerg J, Shen T, Gelberman R, Calfee R (2017) Long-Term Effectiveness of Repeat Corticosteroid Injections for Trigger Finger. J Hand Surg Am 42: 227-235.
15. Grandizio L, Speeckaert A, Brothers J, Graham J, Klena J (2016) Predictors of Recurrence After Corticosteroid Injection for Trigger Digits. HAND 12: 352-356.
16. Schubert C, Hui-Chou H, See A, Deune E (2013) Corticosteroid Injection Therapy for Trigger Finger or Thumb: A Retrospective Review of 577 Digits. HAND 8: 439-444.
17. Wang J, Zhao J, Liang C (2013) Percutaneous Release, Open Surgery, or Corticosteroid Injection, Which Is the Best Treatment Method for Trigger Digits? Clin Orthop Relat Res 471: 1879-1886.
18. Vahdatpour B, Momeni F, Tahmasebi A, Taheri P (2020) The Effect of Extracorporeal Shock Wave Therapy in the Treatment of Patients with Trigger Finger. Open Access Journal of Sports Medicine 11: 85-91.
19. Maliha S, Cohen O, Jacoby A, Sharma S (2019) A Cost and Efficiency Analysis of the WALANT Technique for the Management of Trigger Finger in a Procedure Room of a Major City Hospital. Plastic and Reconstructive Surgery - Global Open, 7: 1-5.