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Triggering and patient satisfaction following percutaneous trigger finger release

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Abstract
Background of study: Definitive treatment modalities of trigger finger include percutaneous release or open release. Open release has risk of infection and the rehabilitation is comparatively delayed. Studies have shown the percutaneous release to be a better alternative in terms of early rehabilitation and patient satisfaction, however conflicting evidences exists.
Methodology: 30 fingers (24 patients) were released percutaneously and results were assessed in terms of triggering and patient satisfaction during 6months follow up.
Results: The results were excellent in 91.6% (22/24) patients, good in 8.33% (2/24) patients in terms of triggering and patient satisfaction.
Conclusion: Percutaneous release of the trigger finger is an effective alternative to open release in terms of patient satisfaction and relief from triggering.

Keywords: Percutaneous, trigger finger, triggering, patient satisfaction

Introduction
Trigger finger is a stenosing tenosynovitis characterized by pathological disproportion in the volume of retinacular sheath and its content leading to inhibition of flexor tendon glide through A1 pulley [1]. Commonly involves thumb or index finger but may be present in other digits too. It is characterised by swelling, pain, and triggering sensation of the finger [2]. In the initial stage of disease conservative treatment, in the form of physiotherapy, anti-inflammatory drugs or local steroid injection, may be effective [3, 4]. However, if it fails then surgical release of the A1 pulley may need to be done, which has nearly 100% success rate [2]. The surgical release has some reported complications: contractures, infection, scar tenderness, nerve injury [5]. Percutaneous release of the trigger finger, first performed in 1958, has an equal success rate as compared to open surgical release and with no complications [6, 7, 8]. The aim of this study is to evaluate the result of percutaneous release of the trigger finger in terms of triggering, patient's satisfaction and early return to work.

Materials and methods
The prospective study was carried out from January 2015 to January 2017. A total of 30 trigger fingers, in 24 patients (16 females and 8 males), were released percutaneously after taking a written informed consent and were followed up for 6months(once in 2 weeks for 1month then once in two months).

Inclusion criteria: Persistent triggering of the involved finger despite conservative treatment and physiotherapy for 6 months, grade 3 triggering according to Eastwood grading [Table 1].

Exclusion criteria: Previous hand surgery or pathological conditions like burn contractures, osteoarthritis, rheumatoid arthritis.

Table 1: Eastwood classification.

Grade 0	Mild crepitus in a non triggering digit
Grade 1	uneven movement of the digit
Grade 2	Clicking without locking
Grade 3	Locking of the digit but passively correctable
Grade 4	Locked digit

Table 2: Rating system to evaluate pain and patient satisfaction in terms of post release triggering and patient satisfaction.

Excellent	No triggering; patient satisfied
Good	Residual triggering; patient either satisfied or dissatisfied
Poor	Triggering same as before the release; patient dissatisfied

Technique

The percutaneous release was performed as an outpatient procedure under local anaesthesia. The patient was made to lie down supine on the table and hand was supinated. After painting and draping the site was anaesthetised locally. The 18 gauge needle was introduced at the level of metacarpophalangeal joint and care was taken not to place it inside the substance of flexor tendon. The needle was then moved from proximal to distal giving a gritting sensation until the complete pulley was released. After a successful release there was immediate loss of triggering. Dressing was done and the patient was discharged on the same day on painkillers. The patient was asked to do active range of motion exercise of the involved hand throughout the follow up and the results were recorded in terms of triggering, patient satisfaction as excellent, good and poor [Table 2].

Results

Out of 24 patient, 66.6% (16/24) were females and 33.3% (8/24) were males. 22 patients had unilateral trigger finger and remaining two (females) had bilateral, one on each side. 3 patients with unilateral triggering had involvement of more than one finger (2 fingers in 2 patients and 3 in 1 patient) [Table 4]. The mean age of the patients was 56.5 years (48-65years) [Table 3]. The patients were followed up once in two weeks for 1 month followed by once in two months and graded according to Eastwood criteria. The percutaneous release was performed only in patients with grade 3 triggering. At the final follow up the result, the results were excellent in 91.6% (22/24) patients, good in 8.33% (2/24) patients in terms of triggering and patient satisfaction [Table 5]. In these patients no further intervention was done, they were advised to continue with the physiotherapy. There was no recurrence or complication in any patient.

Table 3: Age distributions.

Age group	No. of patient
45-50 years	2
51-55 years	10
56-60 years	8
61-65 years	4

Table 4: Distribution of the involved digits

Patient	Involvement
22	Unilateral
19	1 digit
2	2 digits
1	3 digits

Table 5: Outcome in the final follow up

Outcome	Patients
Excellent	22
Good	2
Poor	-

Discussion

Thorpe [9] reviewed 43 patients who were surgically treated for trigger finger. Out of 52 operations, 32 were successful and remaining 21 had recurrence, complications and failure. Tanaka J [10] performed subcutaneous release in 220 digits (172 patients) and obtained 64.3 % excellent results in 24 months average follow up. Eastwood *et al.* [11] used 21 gauge needle to release A1 pulley in 35 patients with triggering out of which 95% (33/35) patients had complete relief.

Ogus *et al* [12] performed percutaneous release on 25 thumbs and concluded percutaneous release to be an effective alternative to open release. Sato [13] did a Randomised Controlled Trial comparing steroid injection, percutaneous release and open surgery on 150 fingers and found out percutaneous release and surgical release to be equally effective. Similarly Bekir [14] performed percutaneous release on 48 fingers and found it to be an effective alternative to surgical release. Ferhat [15] did a retrospective study on 87 patients with trigger thumb, 52 open release and 32 percutaneous release, and found both the techniques to be equally efficacious

Conclusion

Percutaneous release of trigger finger is a highly efficacious method of treatment for trigger finger in terms of patient satisfaction and relief from triggering. The females are affected more as compared to males. The involvement of digits is mostly unilateral.

Future scope

Percutaneous release of trigger finger enables the patient to return to his routine work early and there are no complications like infection and delayed rehabilitation which may be seen in open release. However there could be a risk of tendon or digital neurovascular injury, hence the technique demands proper placement of the needle before the release

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