



55th Annual Conference of Orthopedic Surgeon Society of Andhra Pradesh

Date 6 – 8 February, 2026, Venue : Kurnool Medical College

Organized by : Department of Orthopaedics, Kurnool Medical College Kurnool



Functional Outcome of Neglected Flexor Tendon Injuries of the Hand

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INTRODUCTION

- Flexor tendon injuries within the intricate anatomy of the hand pose a unique and demanding challenge in the field of hand surgery. The incidence of flexor tendon injury is estimated to be 7-14 per 100,000 population¹.
- In India, such injuries are common and about 5% require repair of the flexor tendon².
- The graceful dexterity of the human hand is contingent upon the harmonious functioning of its flexor tendons, which, when impaired, can significantly impact the individual quality of life³.
- Injuries presenting after 3 months are considered neglected and are difficult to manage due to Tendon retraction, Adhesions, Muscle atrophy, Joint stiffness.

AIM & OBJECTIVES

- To evaluate functional recovery following surgical reconstruction
- To assess the role of early physiotherapy in outcome
- To analyze complications if any following staged tendon reconstruction.



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Study design: A Hospital based prospective study.

Study setting: Department of Orthopaedics, Santhiram Medical College & Hospital, Nandyal, A.P.

Sample size: 20 patients

Inclusion criteria:

- All patients with open hand flexor tendon injuries
- Patients with neglected flexor tendon injuries >3 months
- All the patients who gave consent were included in the study.

Exclusion criteria:

- Fresh flexor tendon injuries (< 3 months)
- Patients with active infection
- Patients with finger amputations and with crush injuries of the hand
- Patients unwilling for surgery or lost to follow-up

METHODOLOGY

All the patients were selected following inclusion and exclusion criteria

Preoperative assessment was done

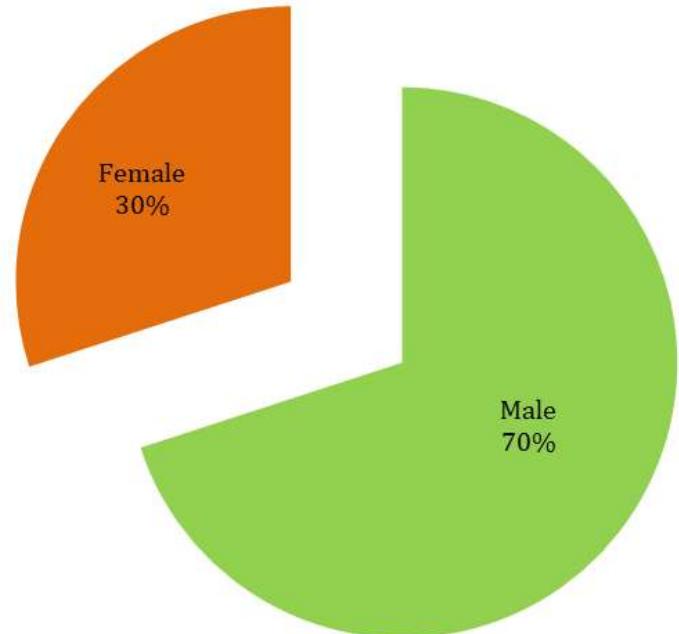
Staged tendon reconstruction was done

Tendon grafting was completed

Physiotherapy and rehabilitation were initiated as early as 24 hours after surgery and kleinert's protocol was followed

Follow up was done at 6 weeks, 3 months and 6 months. functional outcome was measured using TAM and DASH score

Figure 1 Gender distribution



Results

Figure 2 Age distribution

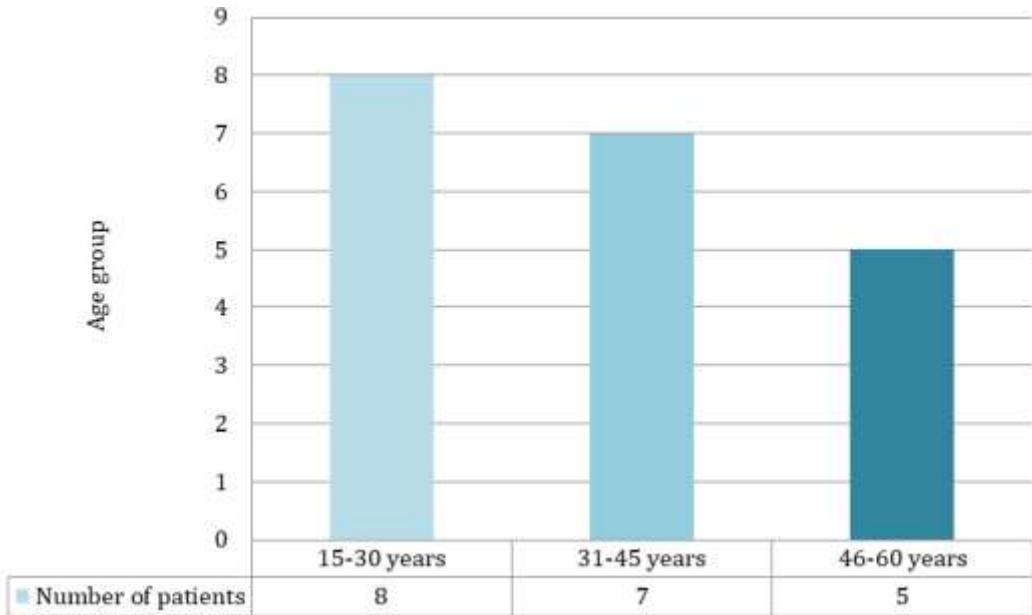
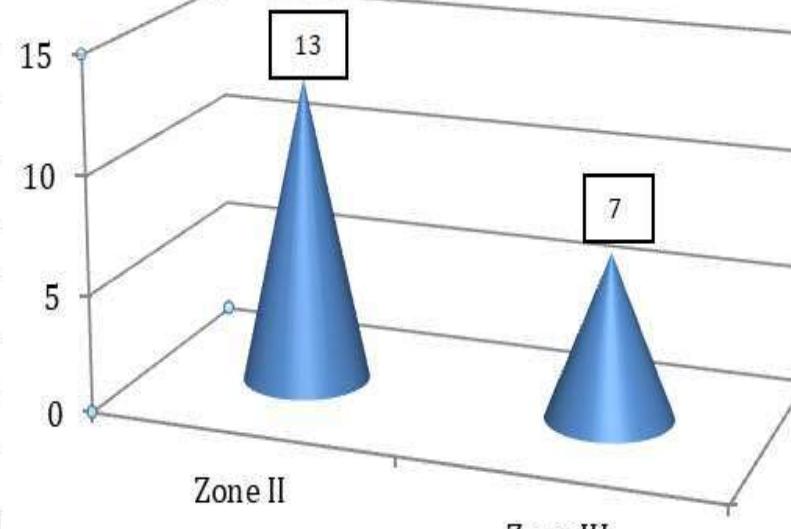


Figure 3 Zones involved



- Good to Excellent functional outcome: 65%
- Complications observed:
- Finger stiffness – 20%
- Adhesion formation – 15%
- Patients who underwent early physiotherapy showed significantly better outcomes



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Figure 4: Hand involved

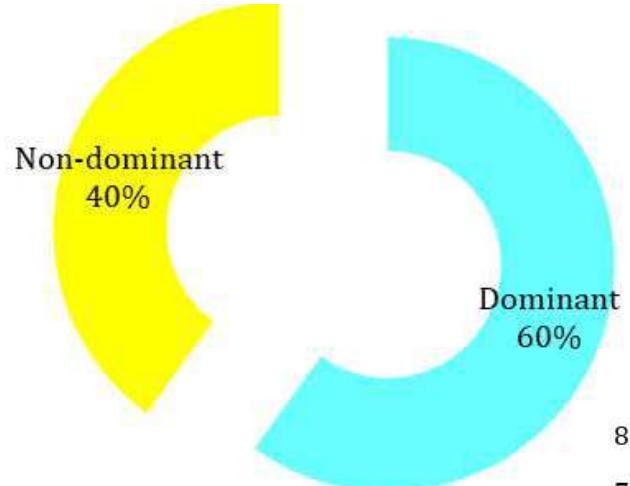


Figure 6: complications at 6 month follow up

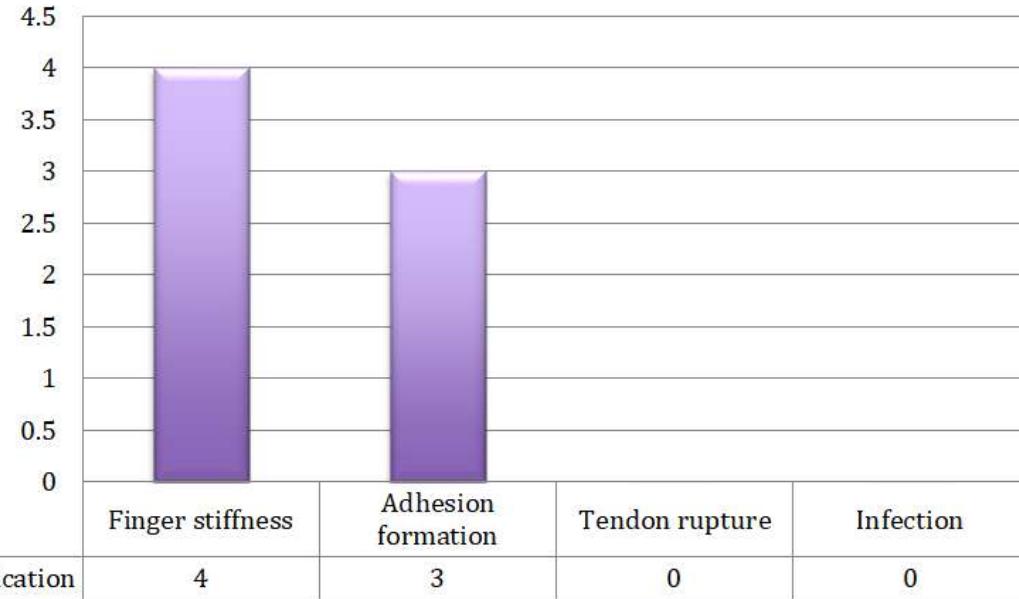
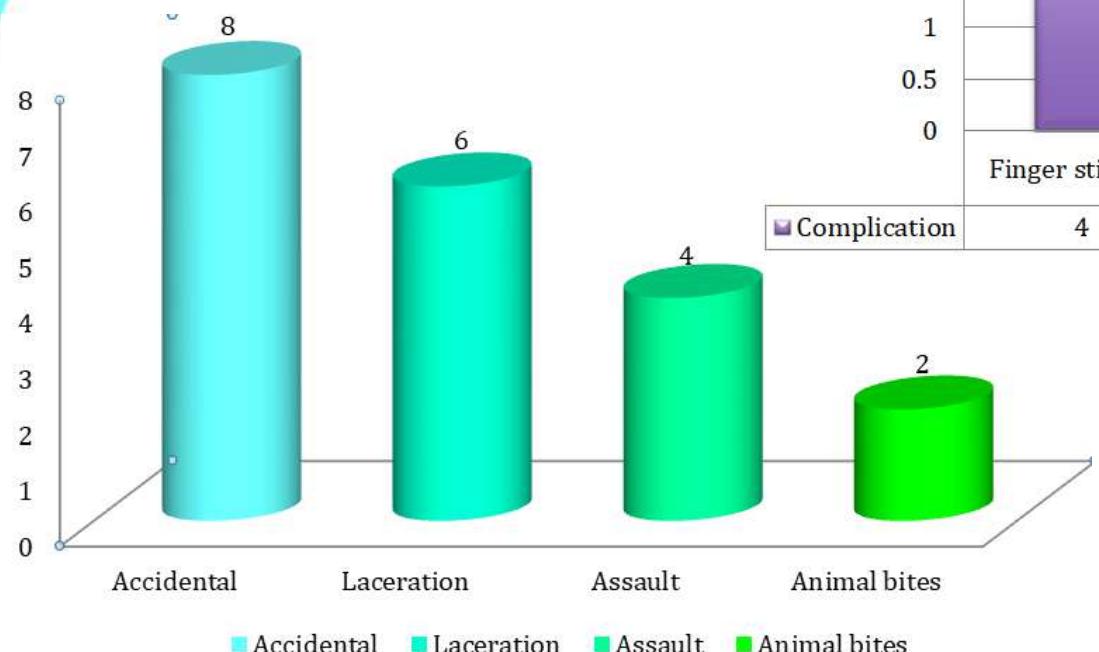


Figure 5: Mode of Injury





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Table 1 Comparison of Mean TAM Scores at Different Follow-Up Intervals

Follow up interval	Mean TAM ($^{\circ}$) \pm SD	P-value
6 weeks	125 \pm 30	<0.001*
3 months	165 \pm 35	
6 months	205 \pm 40	

One-way repeated measures ANOVA P<0.05* statistically significant

Table 3 Comparison of Mean DASH Scores at Different Follow-Up Intervals

Follow up interval	Mean DASH Score \pm SD	P-value
6 weeks	48 \pm 10	<0.001*
3 months	28 \pm 8	
6 months	14 \pm 6	

One-way repeated measures ANOVA P<0.05* statistically significant

Table 2 Distribution of Functional Outcomes Based on TAM at 6 Months

TAM Outcome Grade	Number of Patients
Excellent	7(35%)
Good	6(30%)
Fair	5(25%)
Poor	2(10%)

Table 4 Association Between Early Physiotherapy and Final Functional Outcome

Parameter	Early Physiotherapy (n = 15)	Irregular Physiotherapy (n = 5)	P-value
Mean TAM at 6 months ($^{\circ}$) \pm SD	215 \pm 35	165 \pm 30	0.004*
Mean DASH at 6 months \pm SD	12 \pm 5	22 \pm 7	0.002*

Independent t-test P<0.05* statistically significant



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Intra-operative photograph showing exploration and repair of an injured flexor tendon on the volar aspect of the hand.

Exposure of flexor tendons in the palm and fingers

Suturing of a flexor tendon during reconstruction

Post-operative image showing skin closure of the volar hand following flexor tendon repair surgery.

Post-operative follow-up image showing healed hand incision after flexor tendon repair.

CONCLUSION

Staged tendon reconstruction offered satisfactory functional recovery in neglected flexor tendon injuries when combined with meticulous surgical technique and aggressive rehabilitation.



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