

# **TWO STAGES RECONSTRUCTION FOR FLEXOR TENDON INJURIES OF THE HAND**

Thesis

Submitted for Partial Fulfillment of Master Degree  
in Orthopedic Surgery

By

**Ahmed Ebrahim Mohamed El Hamaky**

*M.B., B.ch.*

Under Supervision of

**Dr. Moustafa Mahmoud Hasanien**

*Assistant Professor of Orthopedic surgery*

*Faculty of Medicine*

*Cairo University*

**Dr. Ayman Abdel Samie Shaheen**

*Lecturer of Orthopedic Surgery*

*Faculty of Medicine*

*Cairo University*

**Faculty of Medicine**

**Cairo University**

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# Acknowledgment

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*Ahmed El Hamaky*

## **Abstract**

**Background:** Primary or delayed primary repair of flexor tendon injuries, with changes in technique, rehabilitation, and technology, has moved to the forefront of treatment options. Secondary reconstruction, however, long the mainstay of treatment for these injuries, remains an important technique in the care of certain injuries. Secondary reconstruction of tendon injuries in zone II (also known as “no man’s land”) using a silicone implant was first described by Bassett and Carroll in 1963 and refined by Hunter in 1971.

**Aim of the Work:** is to assess the results and efficacy of two stages flexor tendon reconstruction technique for cases of flexor tendon injuries in zone two & three with extensive tendon bed scarring.

**Patients and methods:** The present study included 15 patients with 16 affected fingers admitted in Cairo University hospital during the period between December 2012 and October 2013. The cases were collected from Kasr Al Ainy Orthopedics outpatient clinic.

**Results:** We evaluate in this thesis 15 patients with 16 finger with injured either both FDP&FDS tendons or FDP tendon only treated with two stage reconstruction using a tendon spacer. We found that, the success of tendon reconstruction depend on: type of patients as regard age, demand and co-operation, mechanism of injury: The more widespread the zone of initial injury, the greater the scarring is likely to be. The amount of scarring is inversely proportional to the range of motion (ROM) subsequently achieved, and quality of initial care.

**Conclusion:** Two-stage tendon grafting for late flexor tendon injures has usually been recommended and useful for patients not amenable to primary or secondary tendon repair or single- stage flexor tendon grafting such as those with extensive injuries or scarring of flexor tendons, pulley systems or sheaths.

**Keywords:** Two stage reconstruction, neglected tendon injuries, flexor tendon injuries.

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# *List of Abbreviations*

Abb.	Full term
A1 .....	Annular Pulley 1
A2 .....	Annular Pulley 2
A3 .....	Annular Pulley 3
A4 .....	Annular Pulley 4
A5 .....	Annular Pulley 5
ASSH.....	The American Society for Surgery of the Hand
C1 .....	Cruciform Pulley 1
C2 .....	Cruciform Pulley 2
C3 .....	Cruciform Pulley 3
DIP .....	Distal Interphalangeal
FDP .....	The flexor digitorum profundus
FDS .....	The flexor digitorum superficialis
FPL.....	The flexor pollicis longus
LTE .....	Long toe extensor
MCP .....	Mtacarpophalangeal
MOT .....	Mode of trauma
PA.....	The palmar aponeurosis
PIP.....	Proximal Interphalangeal
PL.....	Palmaris longus
TAM .....	Total Active Motion
y(s).....	Year(s)

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# **Introduction & Aim of the Work**

# **Review of Literature**

# *Chapter 1*

## **Hand Anatomy**

## *Chapter 2*

# **Biomechanics**

## *Chapter 3*

# **Tendon repair**

## *Chapter 4*

# **Tendon Healing**