

# A Comprehensive Study of Extensor Expansion of Digitus Secundum

1. Dr.N.Mythily 2.Dr. G.Amudha

1. Assistant professor, Government medical College, Tiruppur

2. Professor & HOD Department of Anatomy, PSGIMSR, Coimbatore

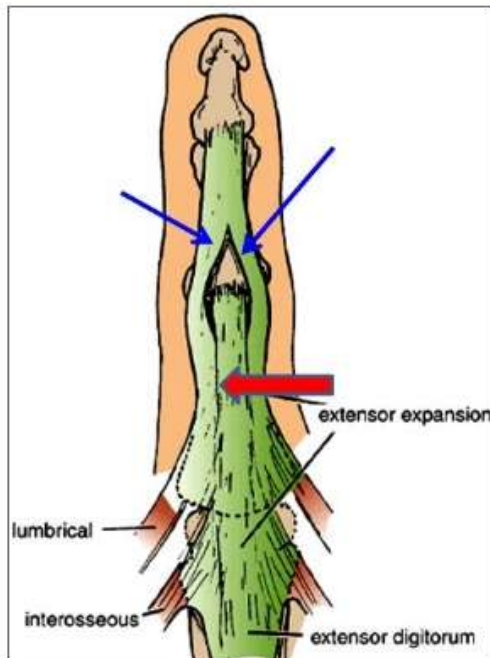
Submitted: 01-04-2023

Accepted: 10-04-2023

## I. INTRODUCTION

- Hand is an injured organ of important as well as commonly the human body.
- Boutonniere deformity and swan neck deformity are common injuries in lateral bands of extensor digitorum of digitus secundum.
- So, a good knowledge about the anatomy of extensor expansion will be helpful in treating the tendon injuries at different levels like external injuries and spontaneous rupture due to rheumatoid arthritis

## Extensor Expansion



- Formed from the expansion of extensor digitorum tendons
- At the *PIJ*, the expansion splits into 3 parts
  - *One Central* inserted into the base of *Middle phalanx*.
  - *Two laterals* inserted into the base of the *Distal phalanx*.
- The Expansion Receives the insertions of:
  - **Corresponding Interosseous muscle (on each side).**
  - **Lumbrical muscle (on the lateral side).**

## OBJECTIVES

- To look for variation in number of tendon of extensor indices and extensor digitorum tendon of digitus secundum.
- To measure the ratio of length of central and 2 lateral slips of extensor digitorum, extensor indicis tendons of digitus secundum.

## MATERIALS

- After obtaining IHEC Clearance, this study was conducted in 40 formalin preserved hand specimens in the department of anatomy, PSG Institute of medical science & Research.
- The damaged hands were excluded from the study.

- The length of central and 2 lateral slips of the tendons from origin to insertion were measured.
- The ratio of length of central slip to the length of lateral slips were calculated.

## II. METHODOLOGY

- After getting IHEC clearance, 40 formalin preserved hand specimens are collected and retrospective study was conducted.
- The hands were dissected and observed for tendon numbers of extensor indicis and extensor digitorum.



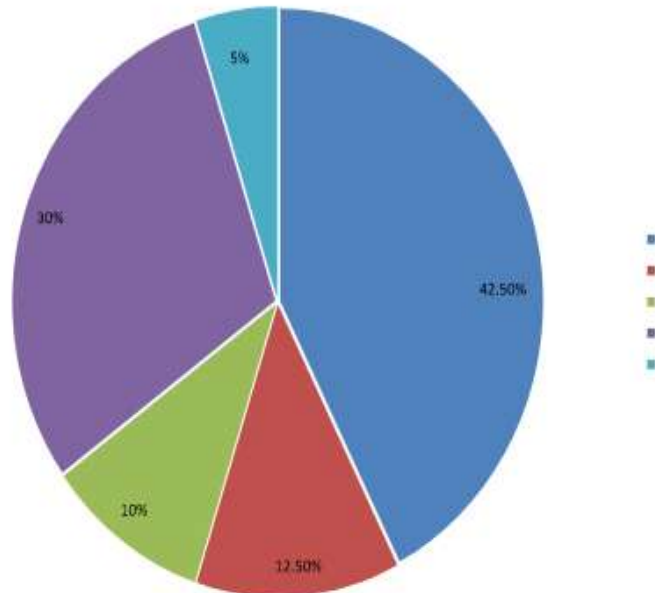




### III. RESULTS

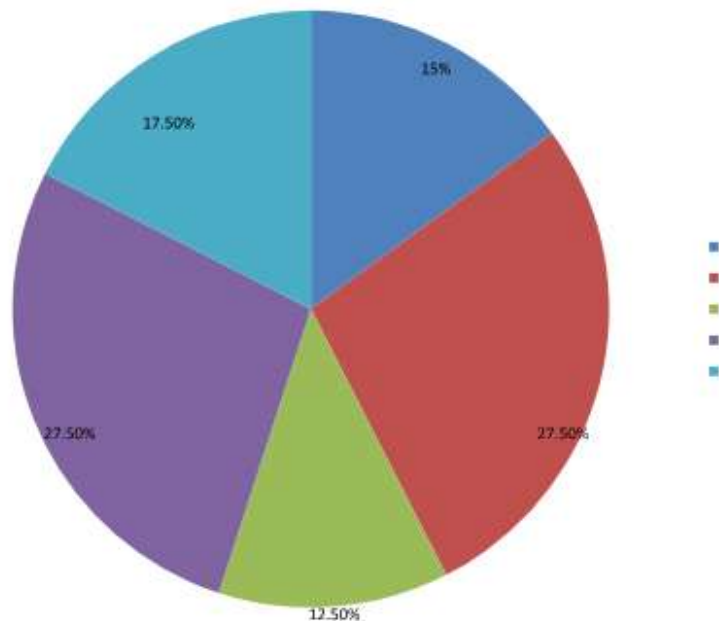
## LENGTH OF CENTRAL SLIP

1. 42.5 % - 3.5cm
2. 30 % -4cm
3. 12.5%-5cm
4. 10%-2.5cm
5. 5%-5cm



## LENGTH OF LATERAL SLIPS

1. 27.5 % - 6cm
2. 27.5 % - 7cm
3. 17.5 % - 8cm
4. 15 % - 6.5cm
5. 12.5 % - 5cm



<b>NUMBER OF TENDONS FOR EXTENSOR INDICIS 1</b>
NUMBER OF TENDONS FOR EXTENSOR DIGITORUM 1
AVERAGE LENGTH OF CENTRAL SLIP OF EXTENSOR EXPANSION 3.5
AVERAGE LENGTH OF LATERAL SLIPS OF EXTENSOR EXPANSION 6.5
RATIO OF LENGTH OF CENTRAL SLIP TO THE LENGTH OF LATERAL SLIPS OF EXTENSOR EXPANSION 1:1.8

#### IV. DISCUSSION

AUTHOR	YEAR	NUMBER OF HANDS	RESULTS(SINGLE TENDON FOR EI)
GODWINS & ELLIS	1992	50 HANDS	100%
VONSCHROEDER & BOTTE	1995	43 HANDS	100%
EL-BADAWL	1995	180HANDS	100%
PRESENT STUDY	2018	40 HANDS	100%

- Most of the previous studies were based only on the number of tendons of extensor expansion of digitus secundum.
- In the present study the measurement of length of slips of extensor expansion of digitus

secundum was done and its ratio was also calculated .

#### V. CONCLUSION

The present study data will be useful for surgeons to plan tendon repair procedures in case of tendon



injuries due to accidents and spontaneous injury like rheumatoid arthritis.

It is also useful in swan neck deformity of digitus secundum which needs tendon release and repair of extensor expansion

#### **REFERENCE**

- EL-BADAWI MGY, BUTT MM, AL-ZUHAIR AGH, FADEL RA(1995) Extensor tendons of the fingers: arrangement