

EARLY ACTIVE DYNAMIC FLEXION VERSUS PLACE AND HOLD PROTOCOL AFTER FLEXOR TENDON REPAIR

Eatmad a. Allam

**Al Azhar University
Hospital
Cairo, Egypt**

تأثير التثني الايجابي الديناميكي مقابل ضع
واثبت
بعد اصلاح الوتر القابض

Significance of the study

1- Soft tissue injuries of the hand predominate these statistics and are Responsible for up to 82% of all hand injuries evaluated in the Emergency department.

Clark et al.,2016

passive movement •

this ended in •

1- high rate of tendon adhesions •

Chow JA et al . ,2007 •

2-limitation of range of movement

3-only 3–5 mm tendon excursion was sufficient to prevent adhesion

2-the most common used protocols after flexor tendon repair may not lead to optimal excursion .

Chow et al.,2017

*4-the most appropriate rehabilitation program following flexor
tendon
repair is active protocol (place and hold)*



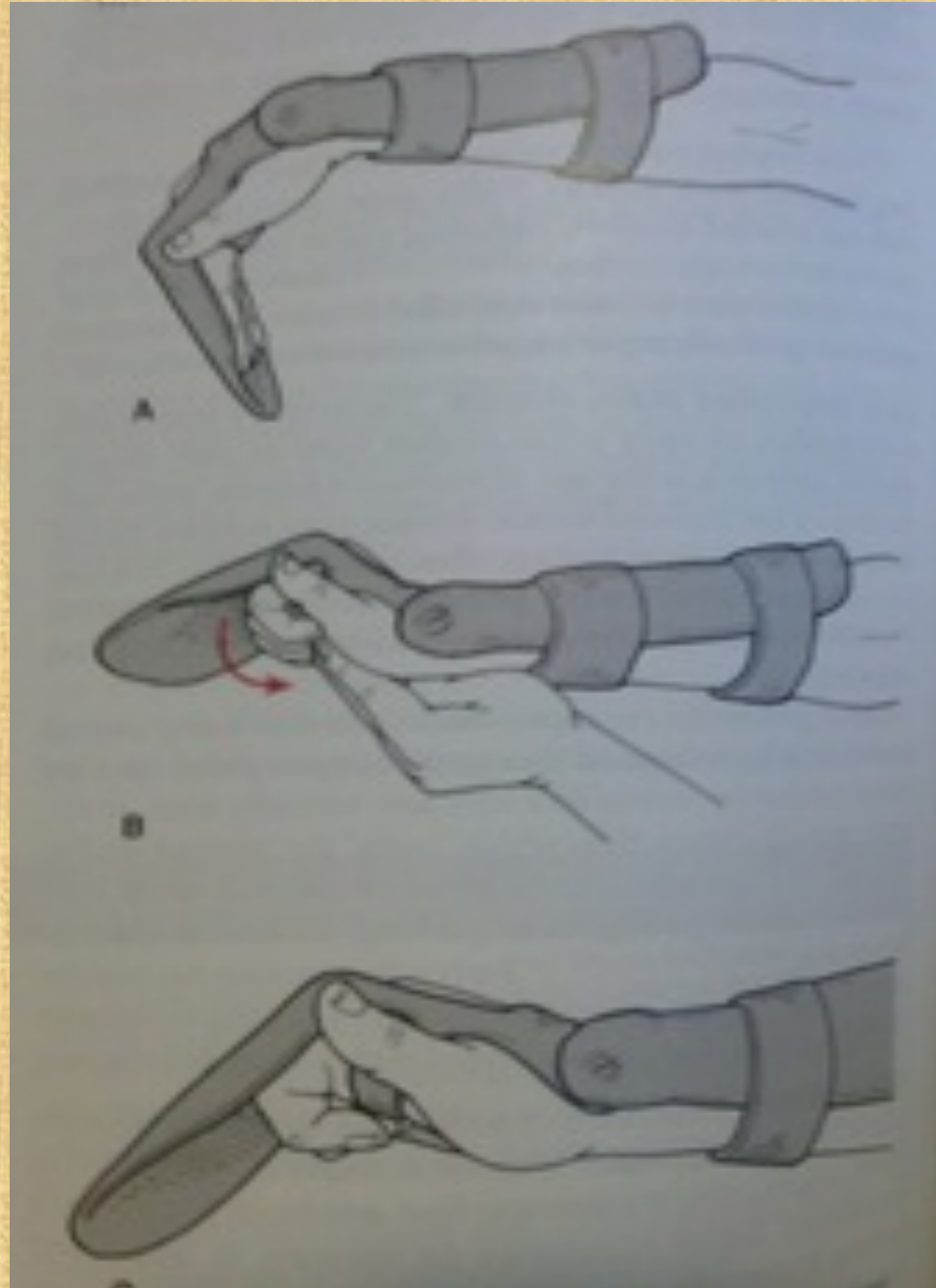
Place and hold

4 days post operative

primary repair

(8&6&4&2)

(Fereydoun et al., 2014)



PAH is difficult for the patient to understand the order . •

Greater risk of pulling of repair with full fist •

**3-Greater friction on tendon at the last •
third of fist means greater risk pure**

Amanda,2016



Active dynamic protocol

you get enough profundus glide to stop it from getting stuck (5to 10mm)with up to half fist.

Active dynamic protocol:

(dorsal block splint)

- 1- wrist (0) extension .
- 2-MP 70 degrees flexion
- 3- IP (0) extension .

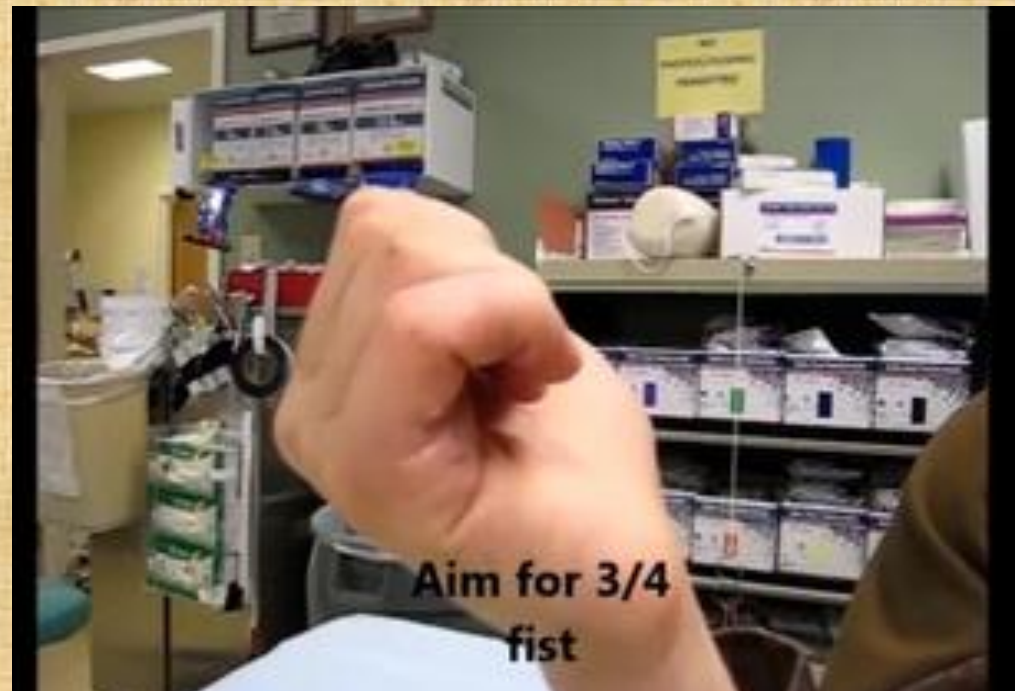
First 3 weeks :

True active flexion up to one third to half of a fist.



At the start of 4th week :-

- 1-Patients work toward half to full active fist position .
- 2- active synergetic movement.

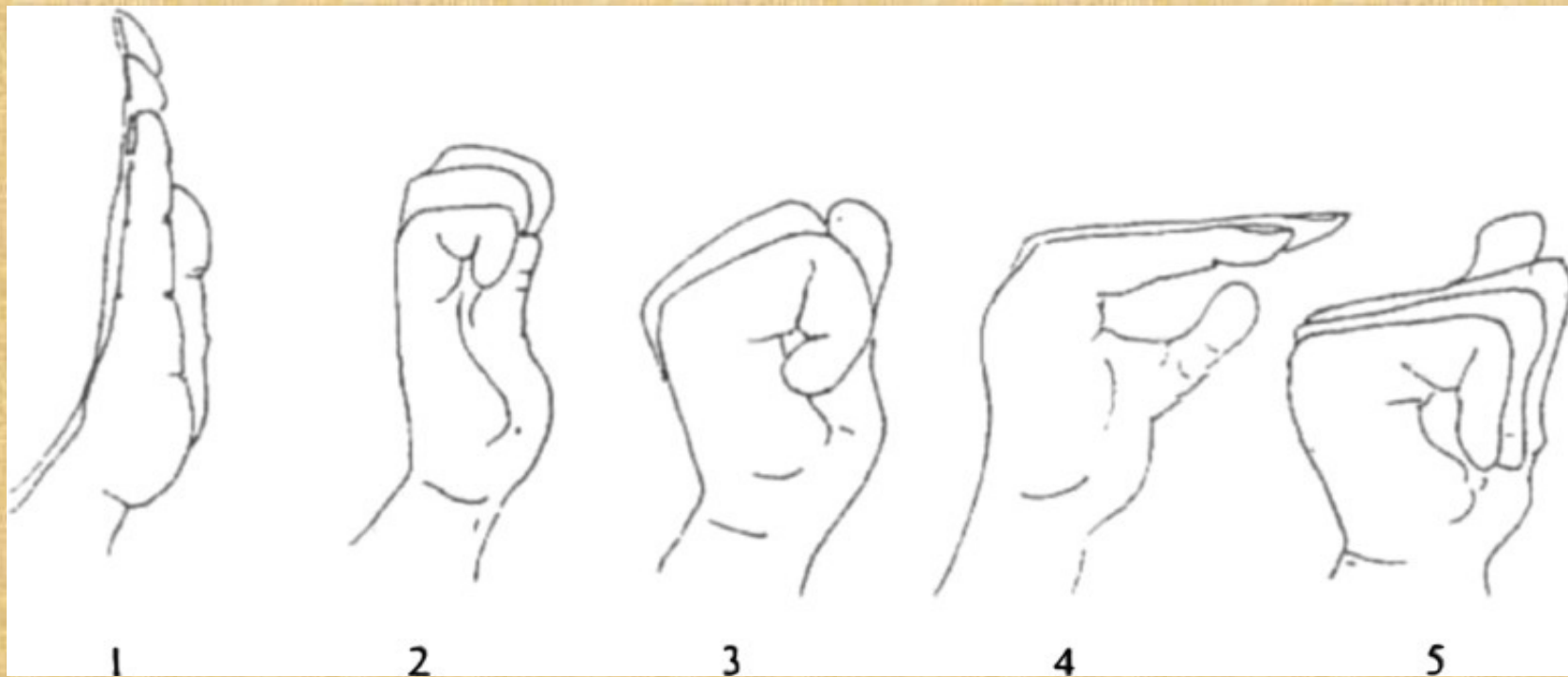


Starting three weeks

Actively flex their fin

Starting four weeks :

Gliding exercises



At six weeks:

I-Blocking exercises

flexion of the PIP joint while the MP joint is kept in extension; flexion of the DIP joint when MP and PIP joints are held in extension. .



At the start of six week:

1-light activity

2- blocking exercises



METHODS

Active
dynamic
Flexion

Place & hold

Tool of assessment

Ultrasonographic assessment • of flexor tendon excursion



Clinical prevalence

Small number of cadaver studies have investigated hand flexor tendon excursion .

The reliability of using USI to measure tendon excursion .

Korstanje, J. W. H., Soeters, J. N., Shredders, T. A., Amadio, P. C., Hovius, S. E., Stam, H. J., & Selles, R. W. (2012). Ultrasonographic assessment of flexor tendon mobilization: effect of different protocols on tendon excursion. *JBJS*, 94(5), 394-402

The procedure



3 weeks

8 weeks

Subjects

This study is delimited to 30 patients of both genders ranged in age from 15:50 years old.

All the adult were divided into two groups of equal number (15):

- **study group (A): exposed to active dynamic flexion protocol.**
- **Study group (B): exposed to place and hold protocol.**

Inclusion criteria

1-All flexor tendon injuries at zones (I,II) of the hand.

2-Patients between the age of 15 and 50 years.

Exclusion criteria:

The following were the exclusion criteria

1-Patients younger than 15 years, because of higher incidence of tendon rupture .

2-Patients who are older than 50 years, as they have been shown to have deterioration of hand function scores, and normative data for these patients are not available .

2-Patients with crush injury with extensive soft tissue loss.

4-Those with medical conditions preventing repair and pre-existing problems such as arthritis limiting joint motion were also excluded