

الله الرحمن الرحيم



الكويت-Kuwait

TREATMENT OF COMMINUTED INTRAARTICULAR FRACTURES AND UNSTABLE FRACTURE-DISLOCATION OF THE PROXIMAL INTERPHALANGEAL JOINT

By
Asal ligament-taxis Technique

THE KIRSCHNER WIRE TRACTION SYSTEM
“ Asal K-W.T. ”

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**PIP joints is a sensitive , important joint
And Difficult to treat**

BECAUSE OF

**The high tendency of the pip joint to
develop stiffness, joint subluxation, and traumatic
arthritis**

after - immobilization

and

OR & IF

The ideal method of the treatment

should allow mobilization of the joint and at the same time maintaining the reduction of the fracture during healing of the fracture
(Allison 1996) ■

Over the last 3 decades

**capsulaligamentotaxis was widely used
and many types of traction techniques have
been reported to reduce the intra-articular
fractures and to allow early mobilization**

1- The Force Couple Splint (Agee; 1978 ;1987)

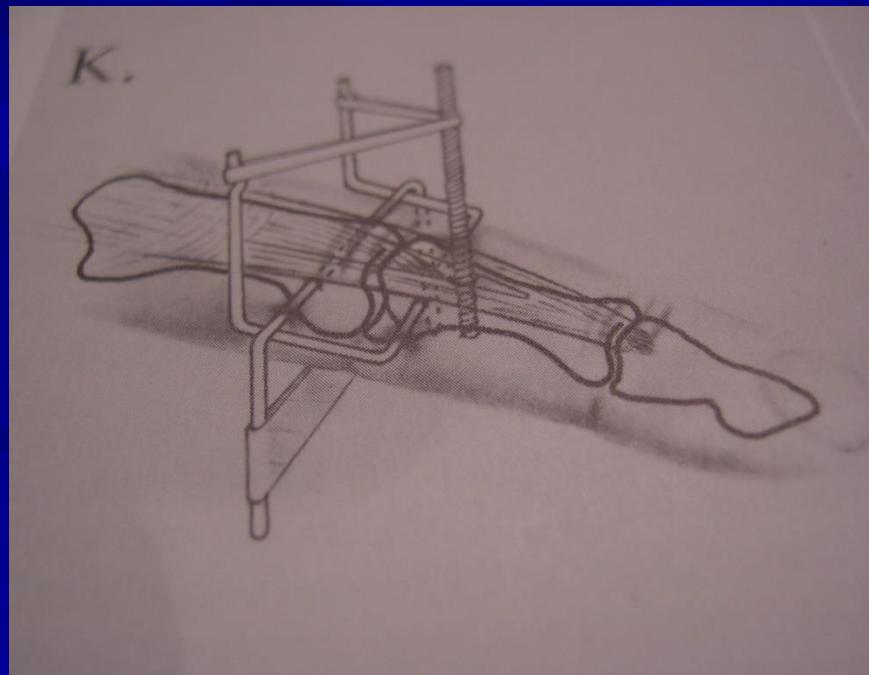
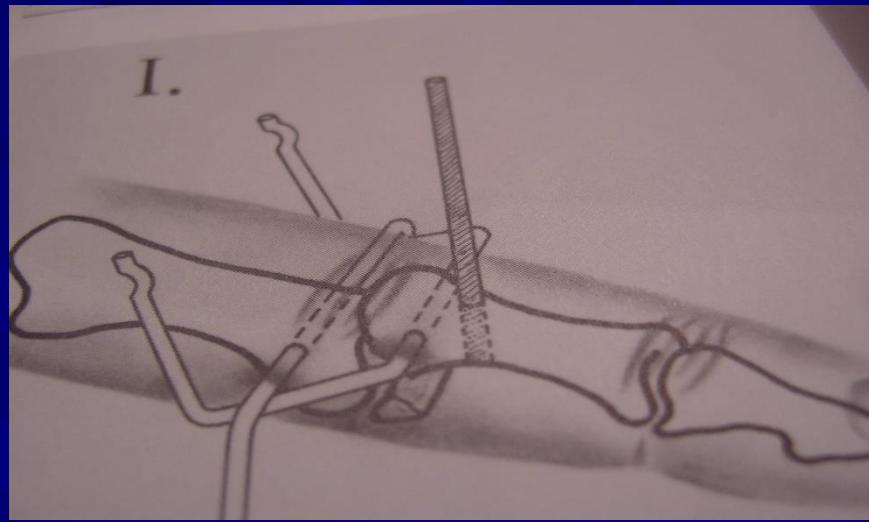
It is effective only for dorsal fracture – dislocation of the pip joint

- **Reported complication :-**

Flexor tendon adhesion

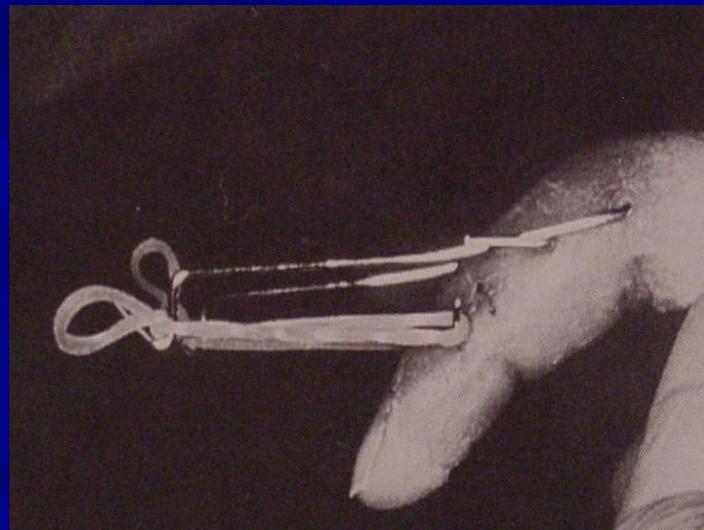
Swan-neck deformity

(Rawes M.L ; et all 1995)



2- The Pins and Rubber Traction System (Suzuki; et al 1994)

**It is more compact, comfortable and effective,
but it is complex to apply and to adjust the
traction .**



We present our traction system to treat such injuries.

The Kirschner-Wire Traction System (K-W.T.S)

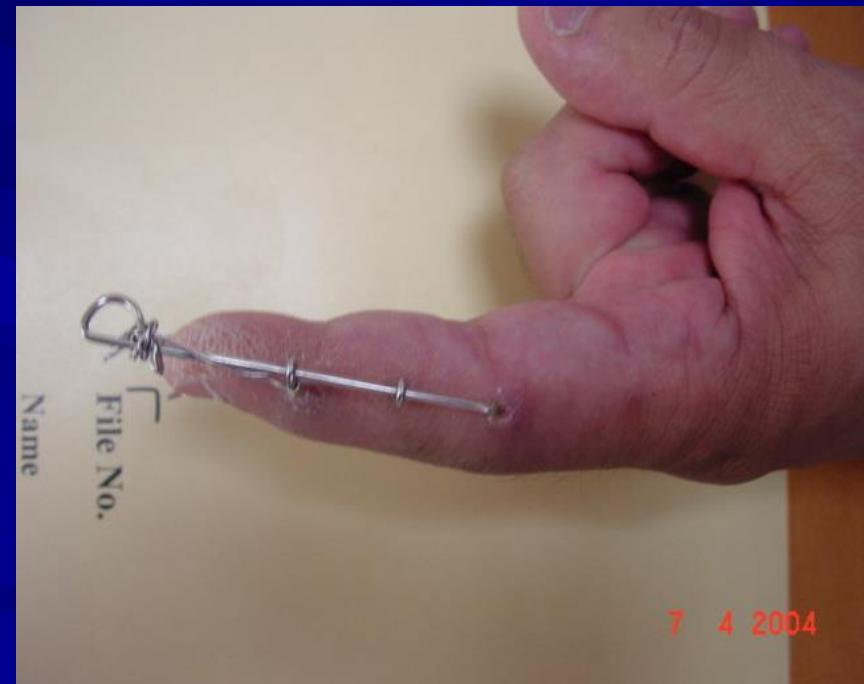
Developed 1995 in KUWAIT at AlRazi hospital



**Which can be used for
Reposition of the fragments and to maintain the reduction**



And to allow early motion



OPERATIVE TECHNIQUE

The system consists of two or three Kirschner wires(1.2MM) and tension wire:

- 1st wire the Axial Traction pin
- 2nd " the Sliding Traction Pin.
- 3rd " the Reduction pin



Sites for pins

Sliding Traction pin

center of motion
Axial traction pin

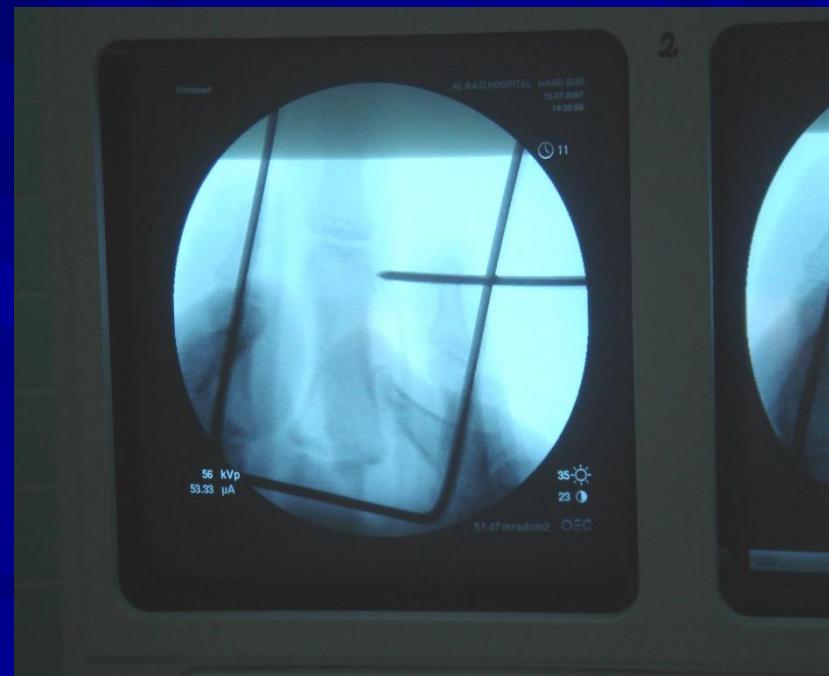
Reduction pin

S.T.P

A.T.P

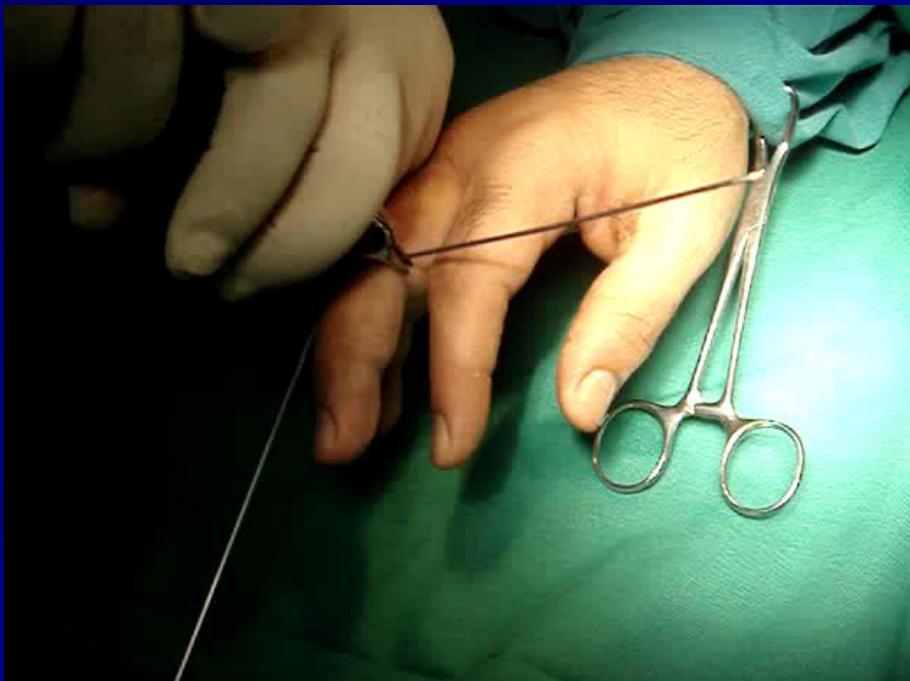
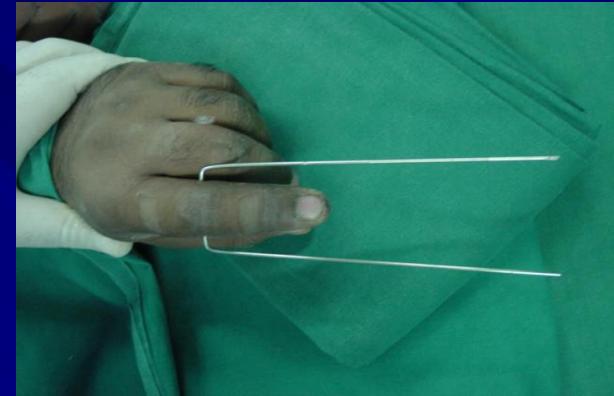
1-THE AXIAL TRACTION PIN:

1-Along Kirschner wire (1.2 mm) is inserted through the head of the proximal phalanx.



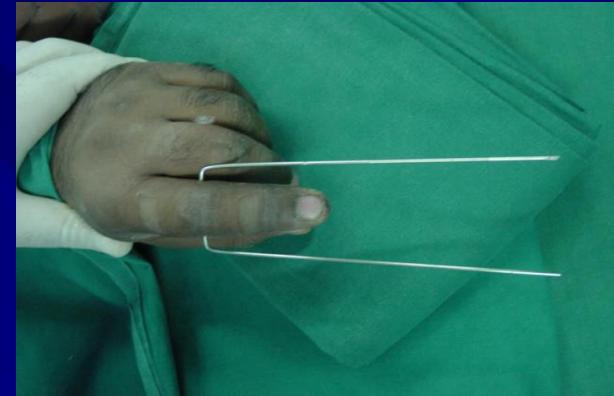
1-THE AXIAL TRACTION PIN

2-On the both sides of the finger, the wire is bent 90 degree near the skin in the direction of the fingertip.

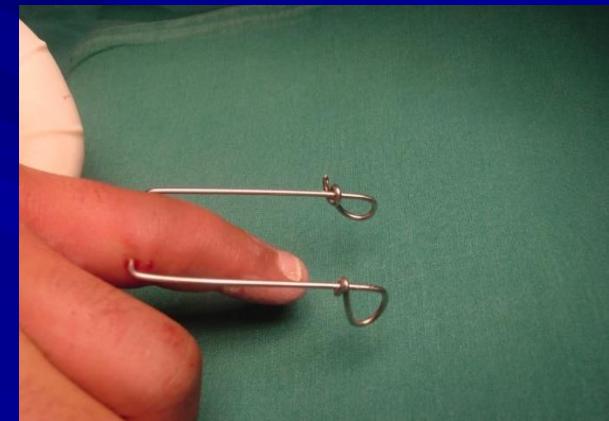


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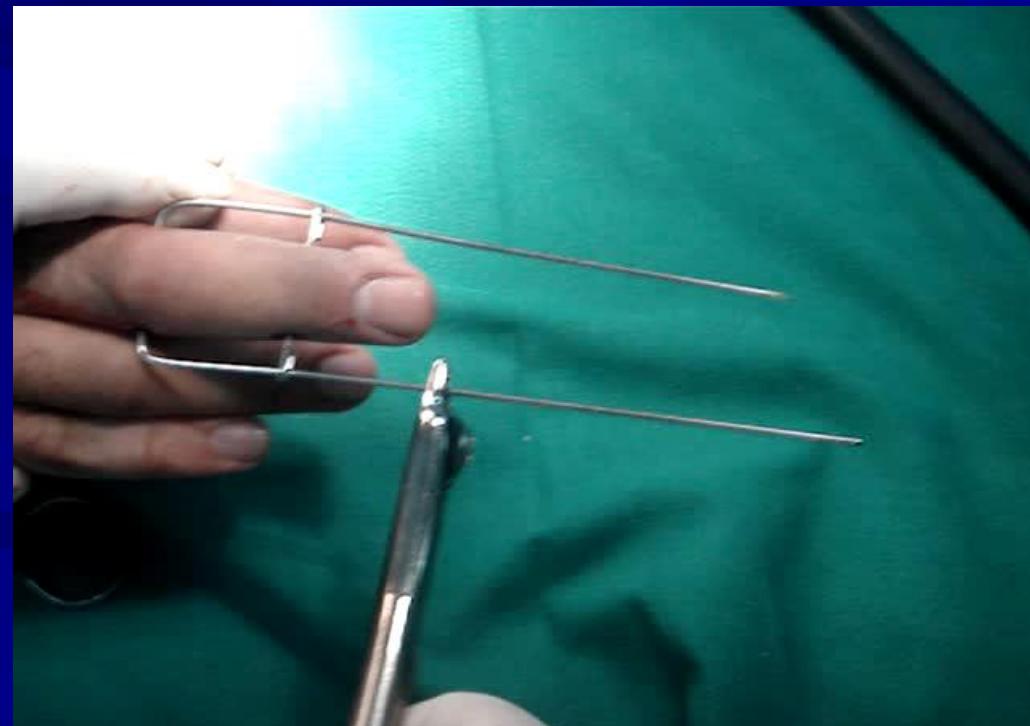
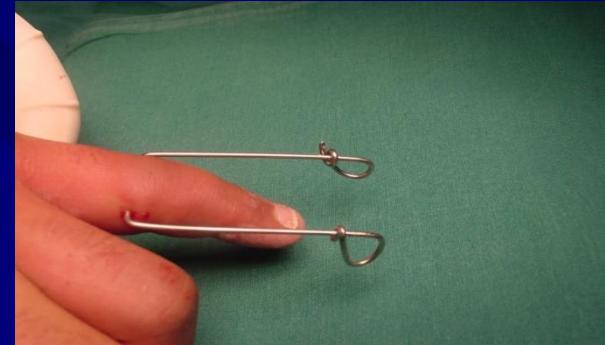


3-Each end of the wire must be long enough to reach about 12 cm distal to the finger tip, and is bent as a semicircle



1-THE AXIAL TRACTION PIN

3-Each end of the wire must be long enough to reach about 12 cm distal to the finger tip, and is bent as a semicircle



V-2 ■

2-THE SLIDING TRACTION PIN

A second kirschner wire is inserted transversely through the head of the middle phalanx or through the base of the distal phalanx (distal to the injury).



The both ends are bent around the axial traction pin forming another two semicircles.



Tension wire

Tension wire are now applied between the semicircles on both sides of the system

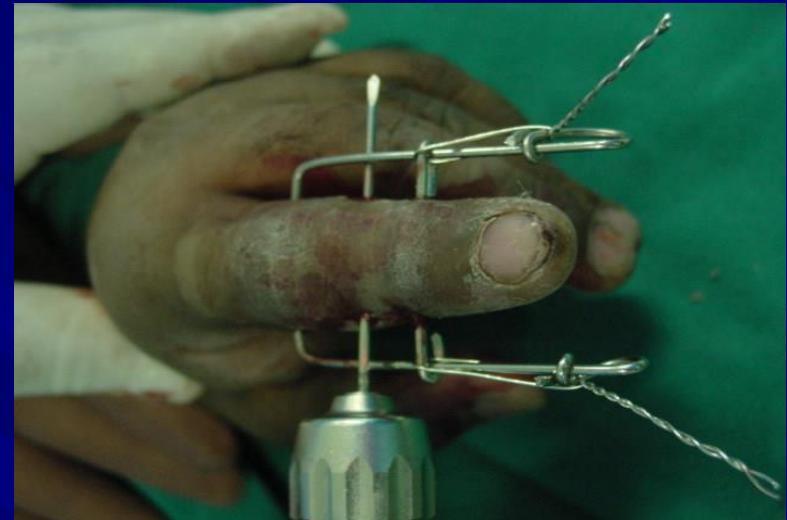


The traction force can be controlled by imaging or radiographically



3-THE REDUCTION PIN

To reduce the fracture dislocation. The reduction pin must be inserted distal to the injury



Each end of the reduction pin must be also bent around the axial pin



Post-operative care

1 - A small amount of dressing is used ;avoiding any disturbance of the active motion



2- Active motion is allowed - immediately



3- AP and lateral X-rays are obtained after 1 week and after 5 – 6 weeks before removal



V-4



CASE REPORTS

Case N0 1



Injury
21 02 2004



Operation
After 12 days



Case N0 1



**System off
After 5 weeks**



Case N0 1



1 week after system off

CASE REPORTS

Case No 2



injury

31 12 i996



Operation
After 3 weeks





system of after 6 weeks



Case No 2



after 3 years

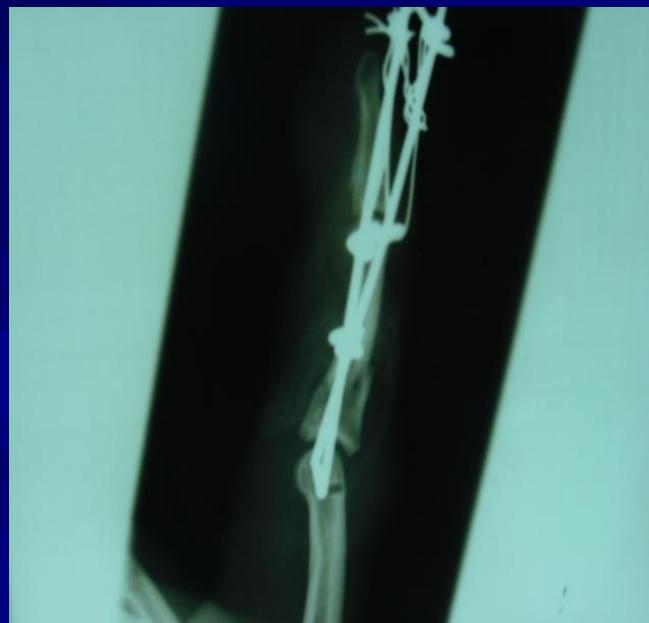


Case No 3

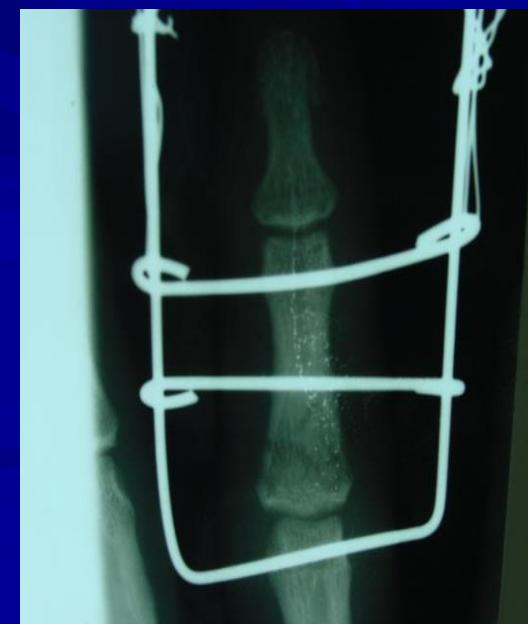
CASE REPORTS



injury
16 04 1999



operation
after 18 days



Case No 3

After
5 years



Case No 3

After

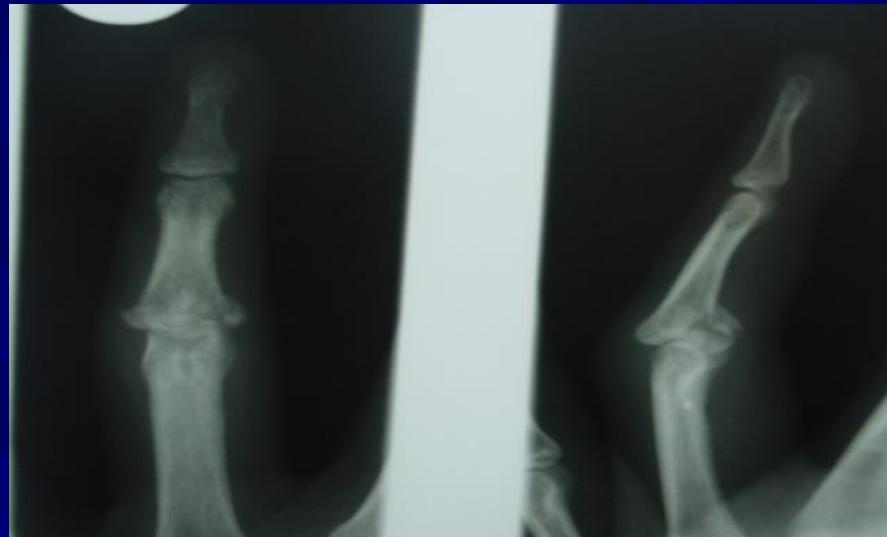
19
years



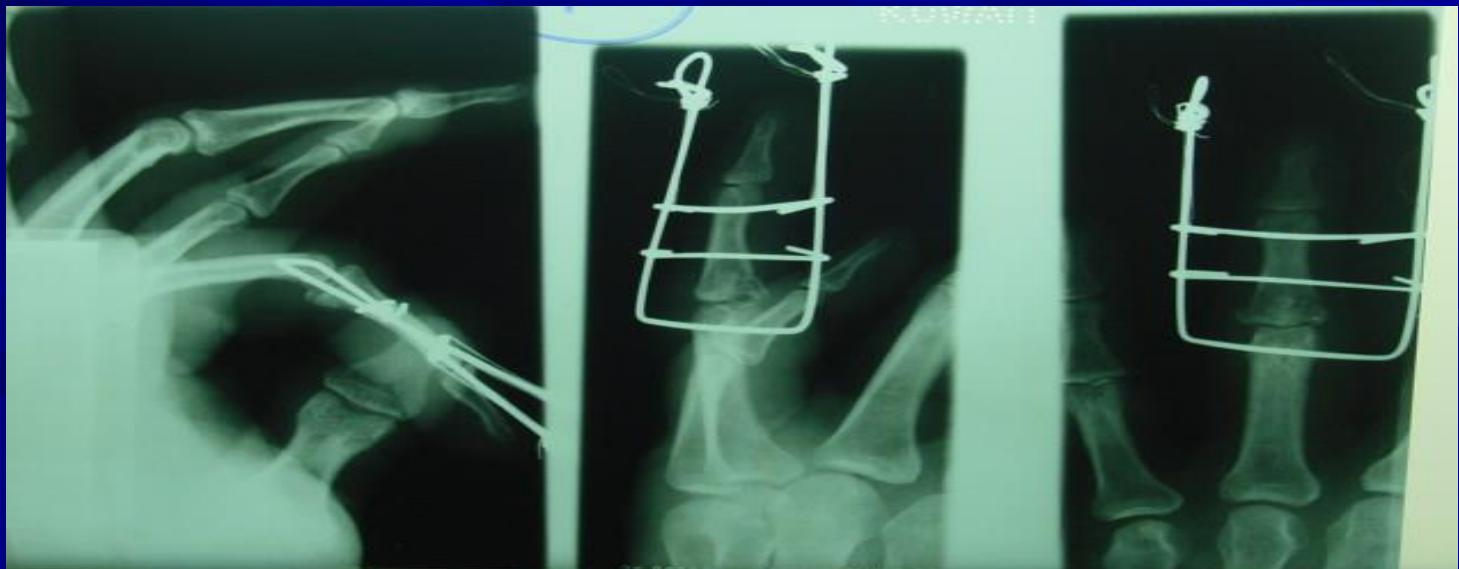
CASE REPORTS

Case No 4

Trauma
22 -12-1996



operation after 1 week



Case No 4



X-RAY 28 01 2018



After 21 years

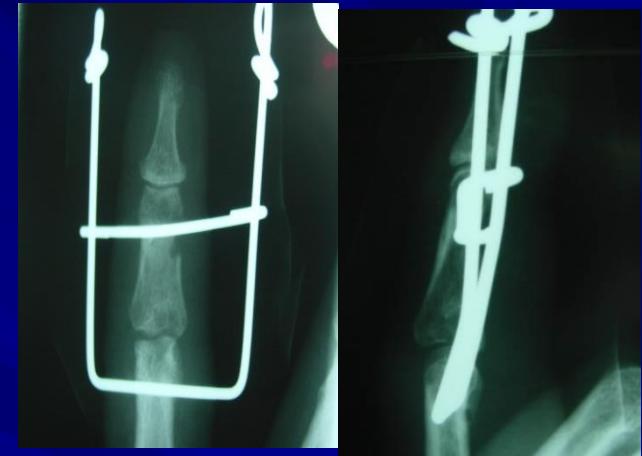
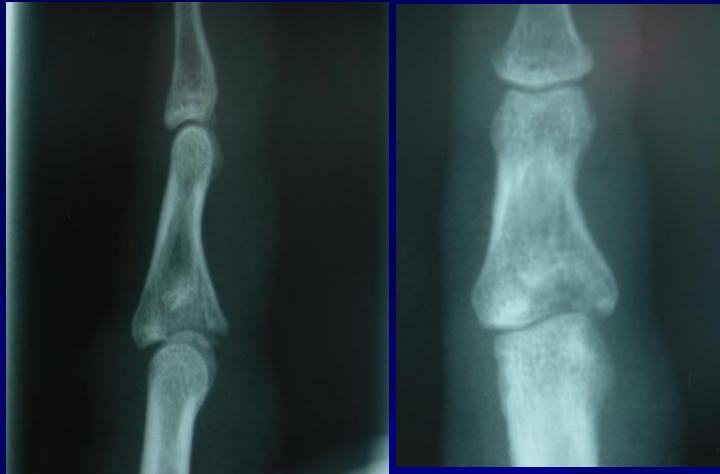


CASE REPORTS

Case 5

13-01-2007

Operation 2W



2007 1 30

Case 5



After 10 years

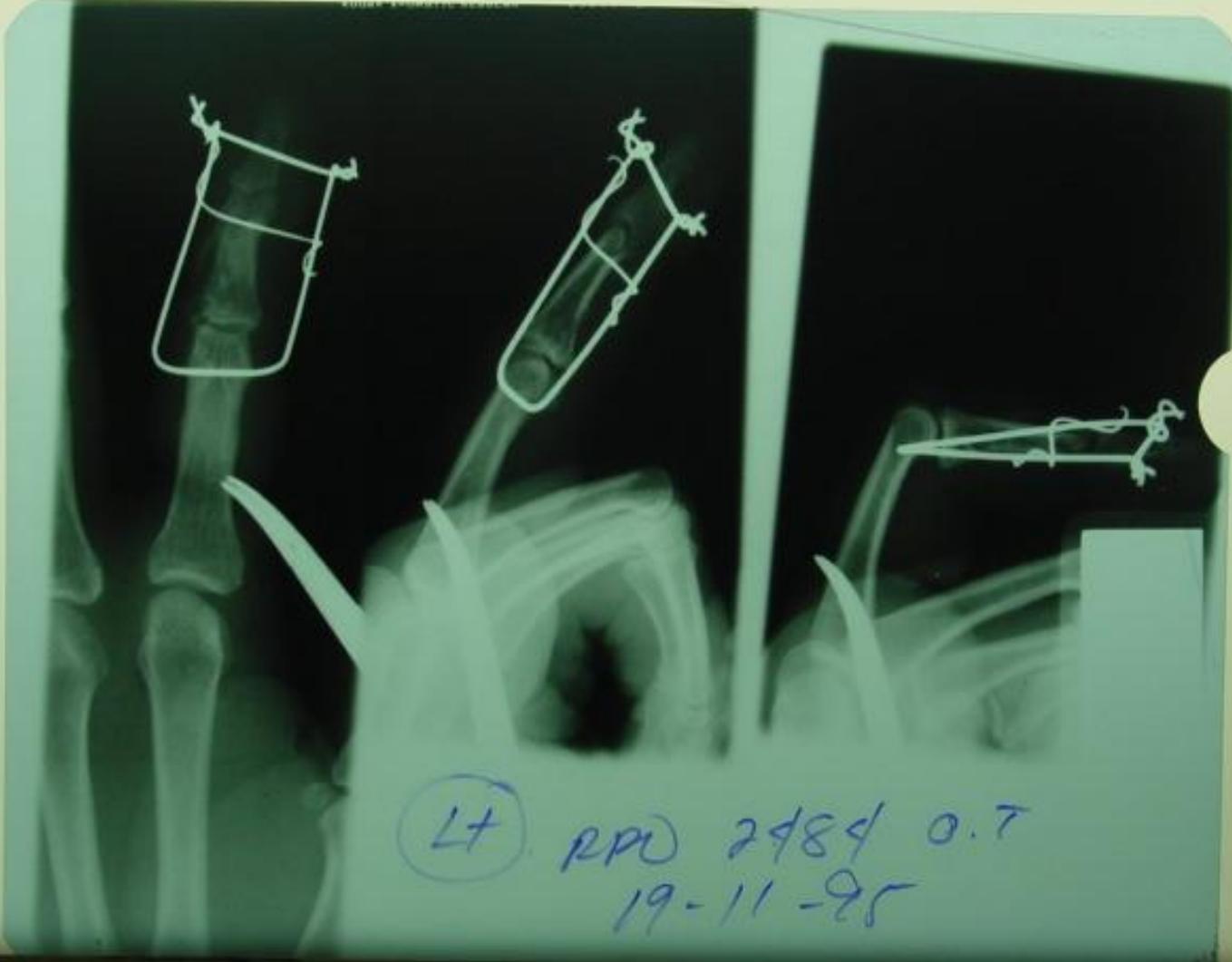




The patient is a teacher of pottery art

1 St. Case
19-11- 1995
**After which we started
Our technique
Crush injury Lt Index**





14

RPD 2484 0.7
19-11-85



CONCLUSION

The K-W. T.S (traction & early motion)
may stimulate

- 1- A good reduction
- 2- A good condition for nutrition re-modelling
of the joint surface
- 3- Prevent intra-articular adhesions and
capsule-ligamentous contracture
of the joint

CONCLUSION

It is comfortable; compact;
and effective in applying

CAPSULE-LIGAMENTOTAXIS

Thank You