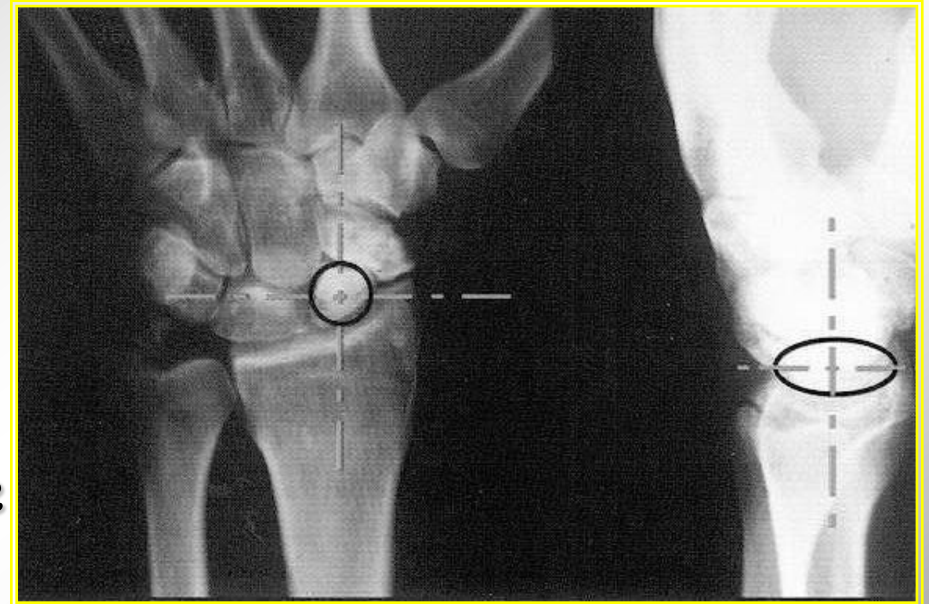
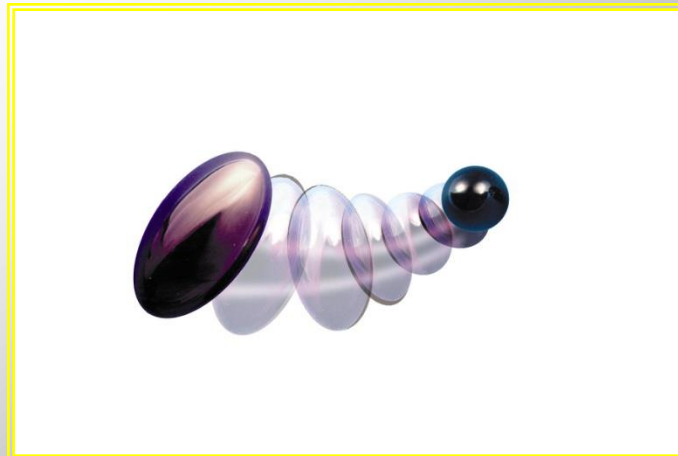
Indications, Technique and Results of APSI

C.Mathoulin

TECHNIQUE

- Antero-posterior large curve
- Frontal small curve
- Pyrolitic carbon
- Module of elasticity = bone
- Ovoid shape
- Adaptative mobility





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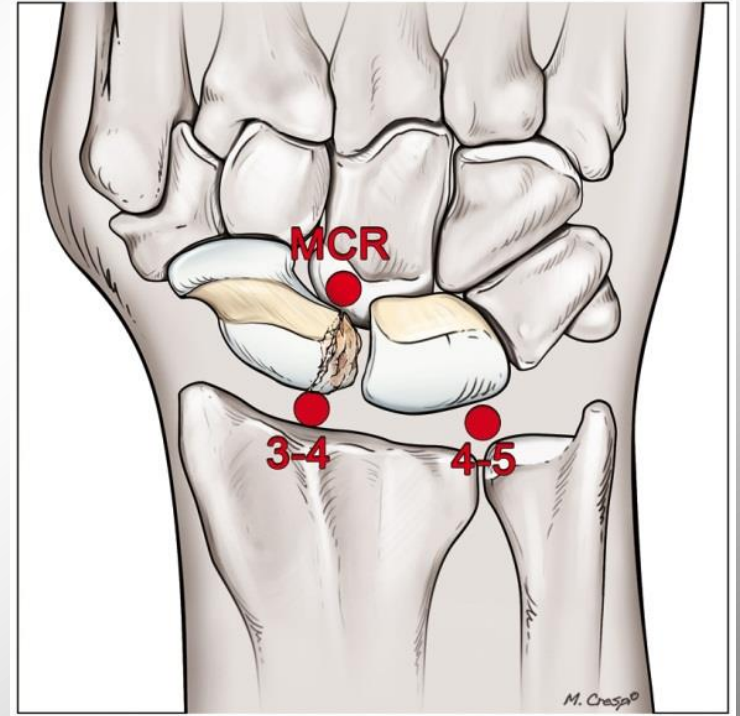
TECHNIQUE

- Outpatient
- Local regional anaesthesia
- Pneumatic tourniquet
- Wrist arthroscopy
- 4-5 radiocarpal portal
- 3-4 radiocarpal portal (1.5cm)
- Radio mediocarpal portal



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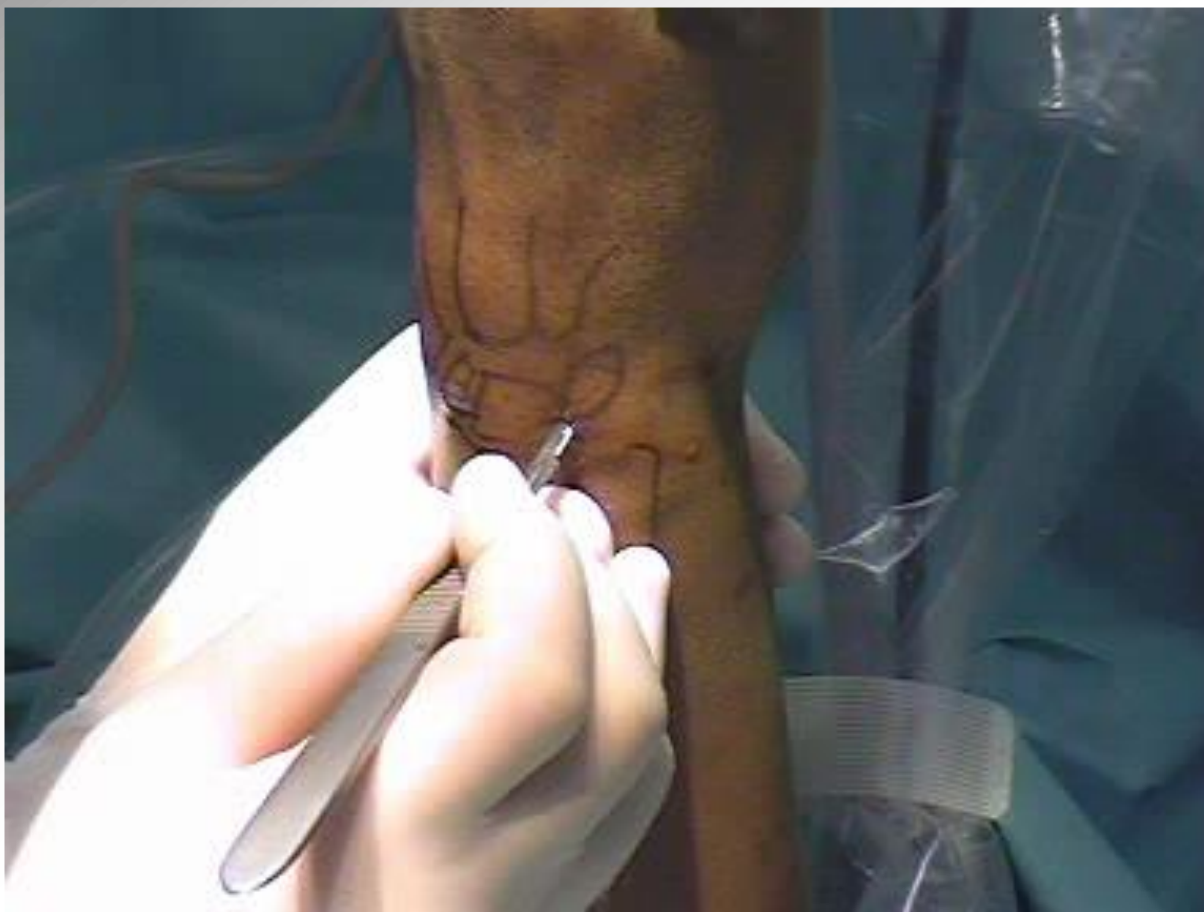
TECHNIQUE



Transverse incision (HEAL BETTER!)

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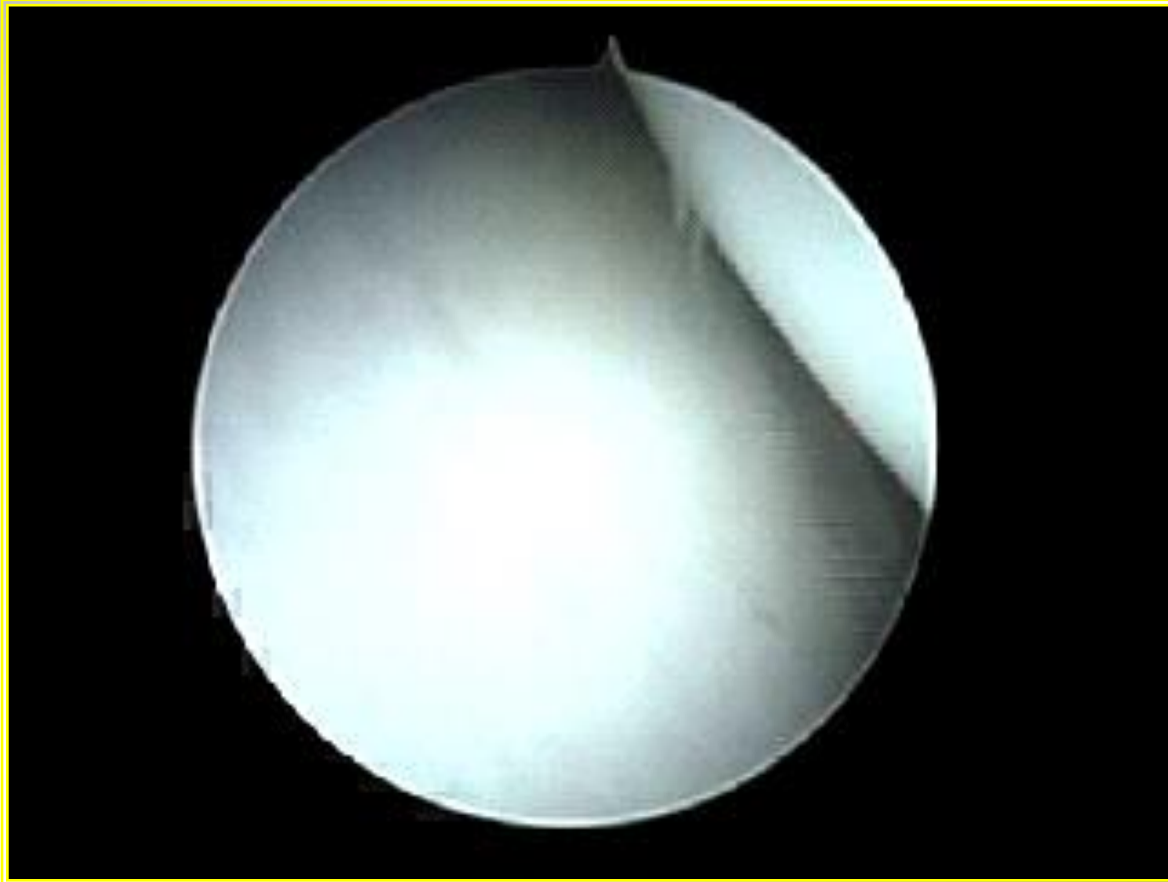
TECHNIQUE : exploration (midcarpal joint)

1/ exploration



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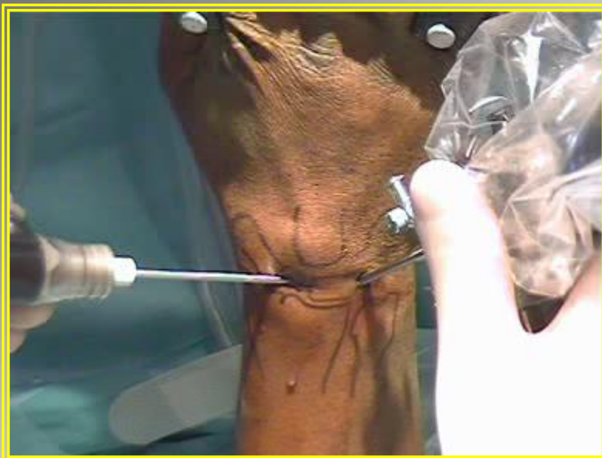
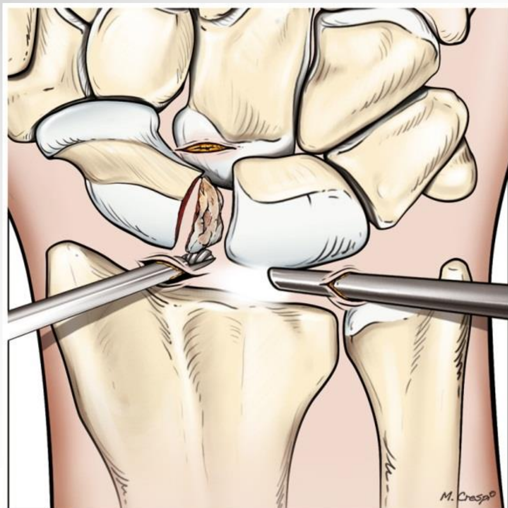
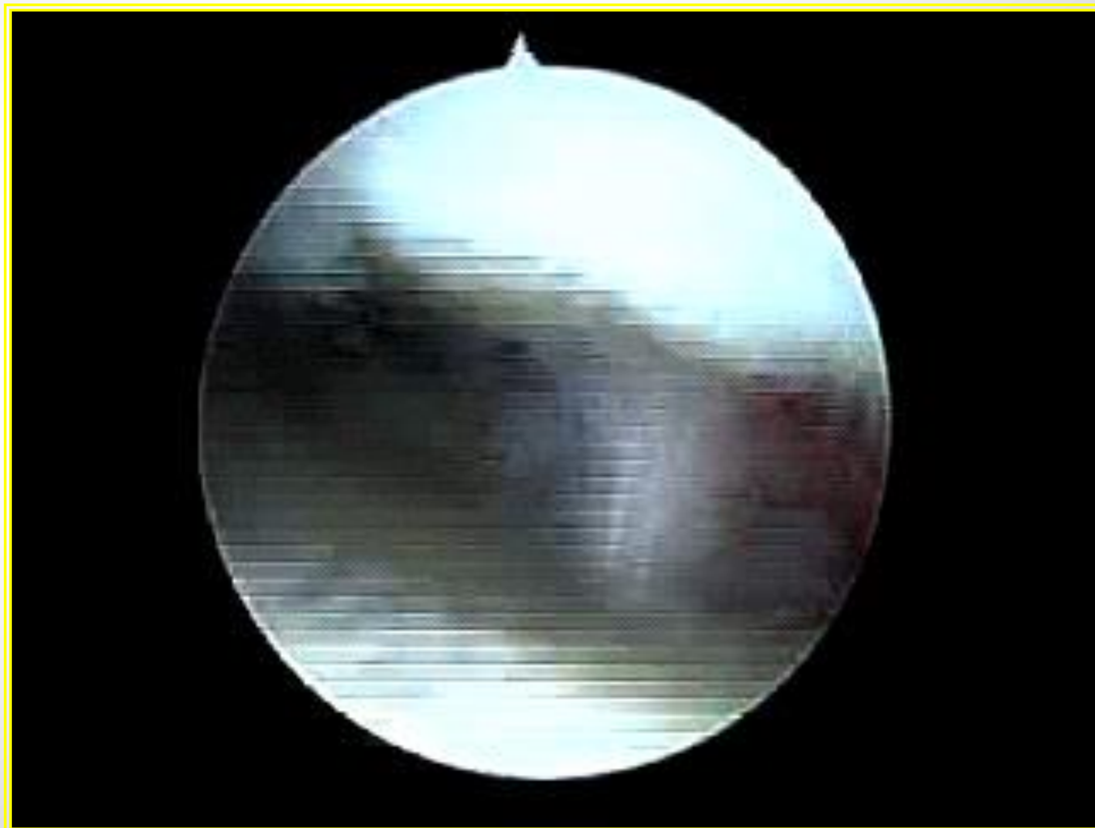
TECHNIQUE



2/ cleaning





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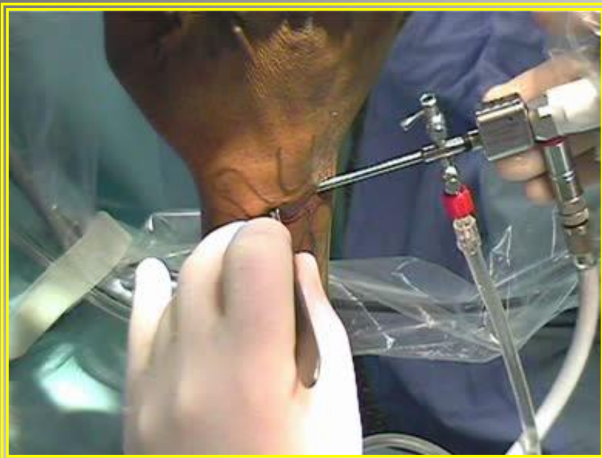
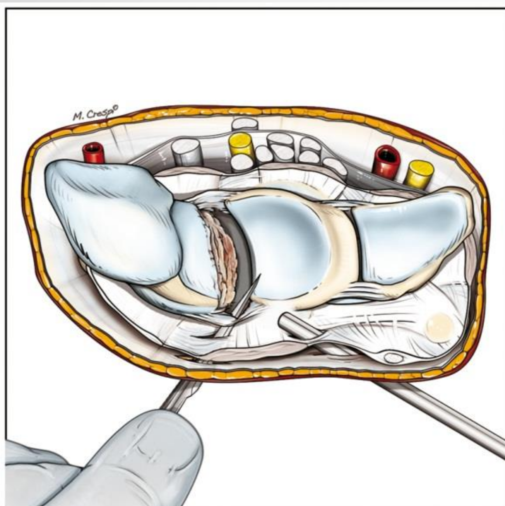
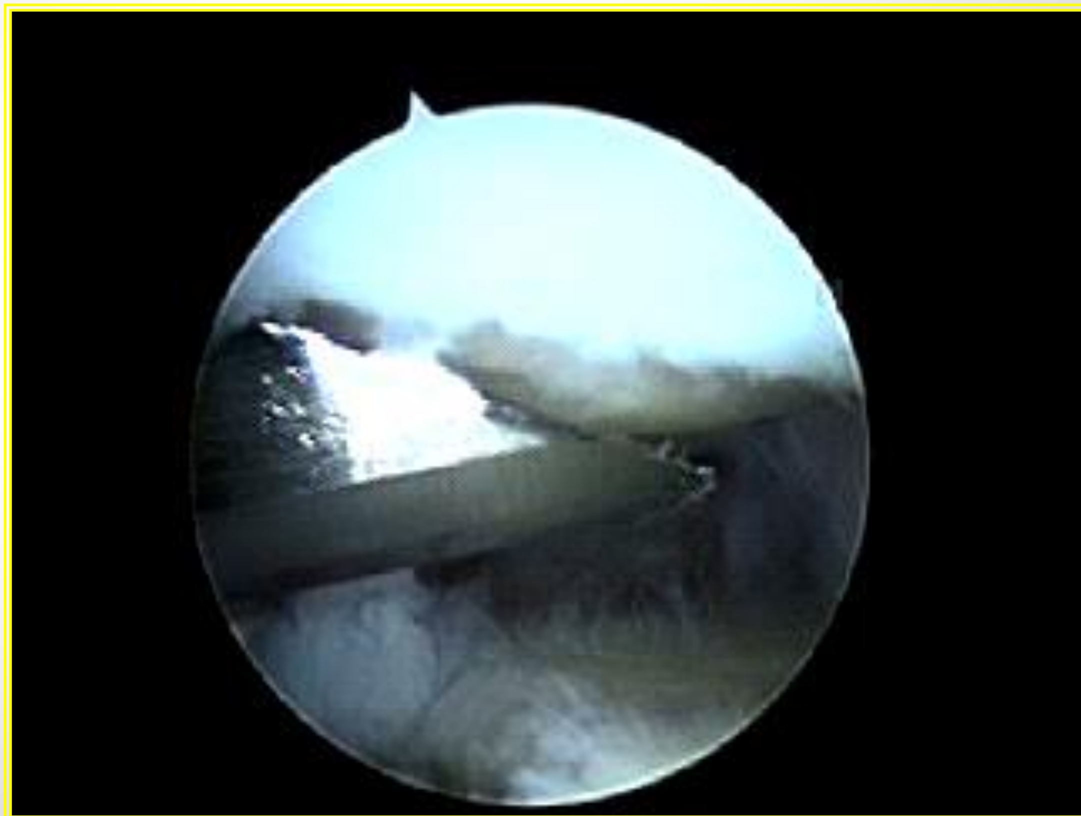
TECHNIQUE



3/ Section SL ligt





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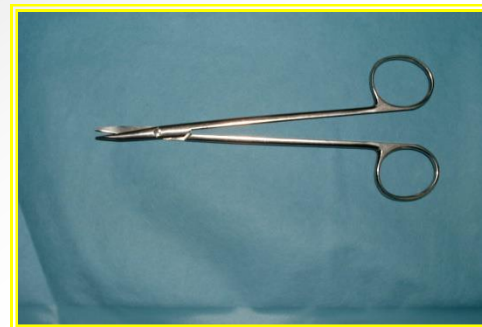
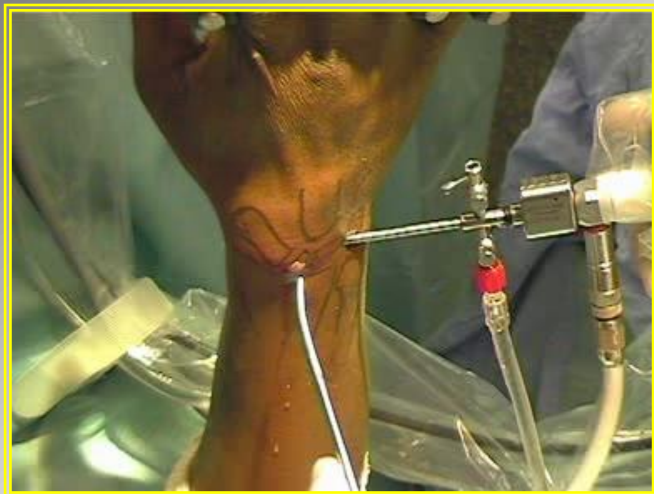
TECHNIQUE





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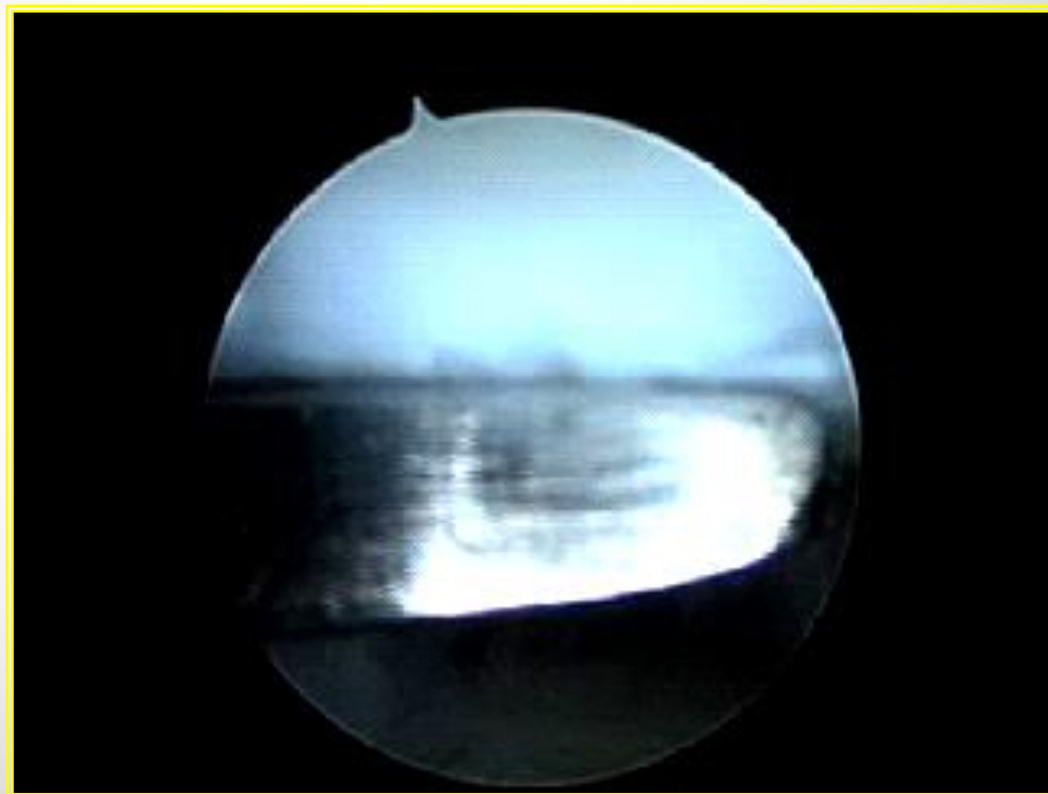

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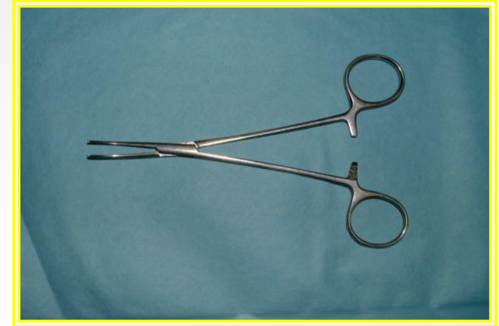
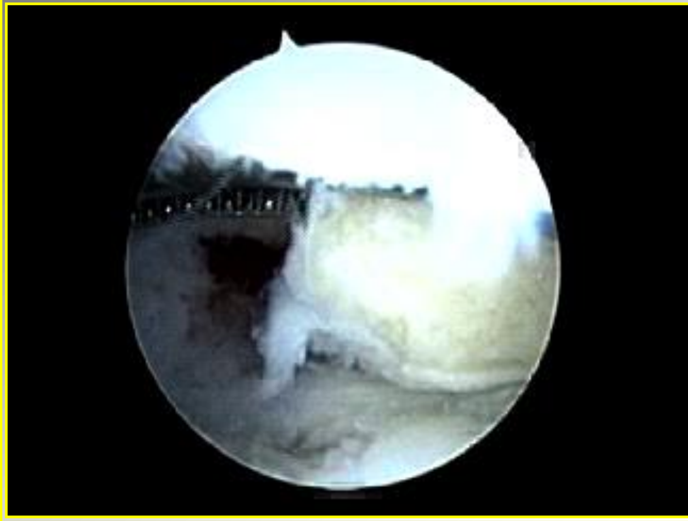
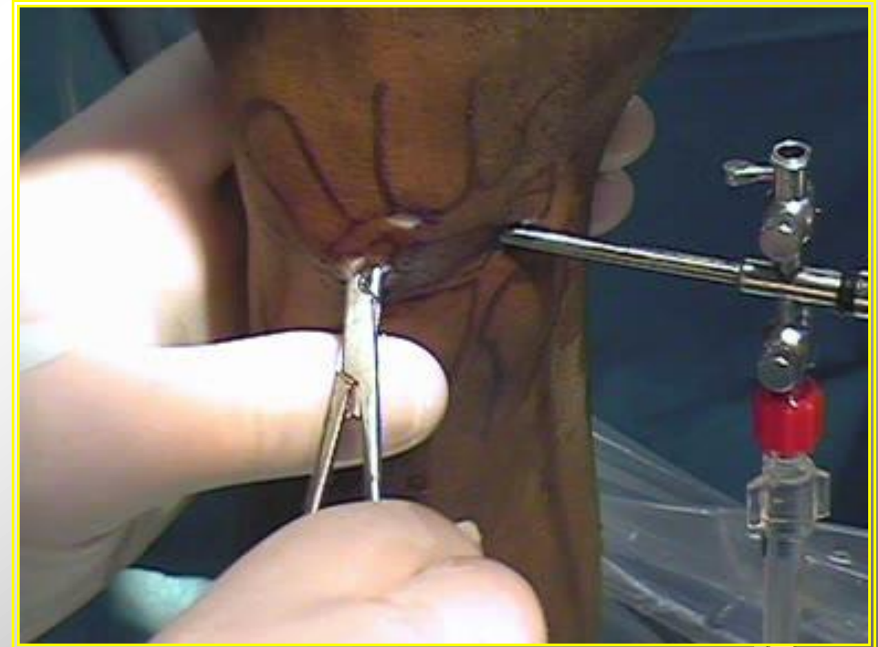
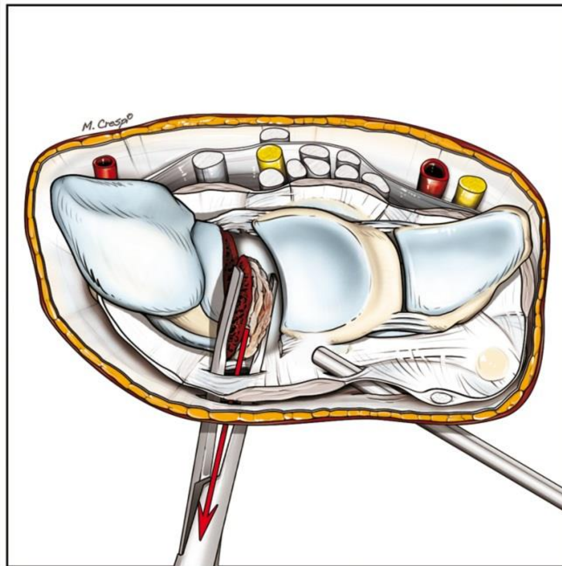
TECHNIQUE





4/ Proximal pole removal





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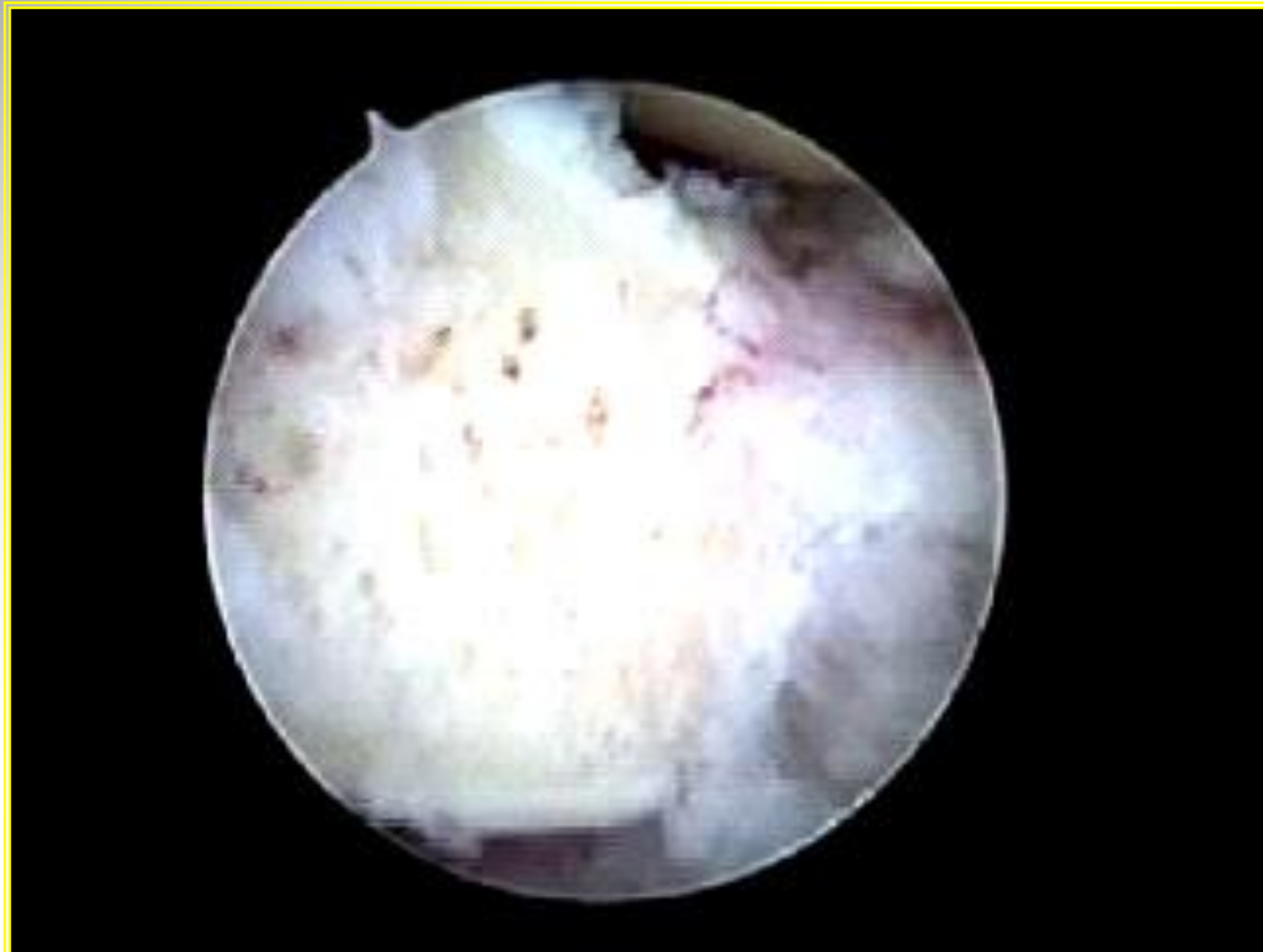
TECHNIQUE

5/ New exploration



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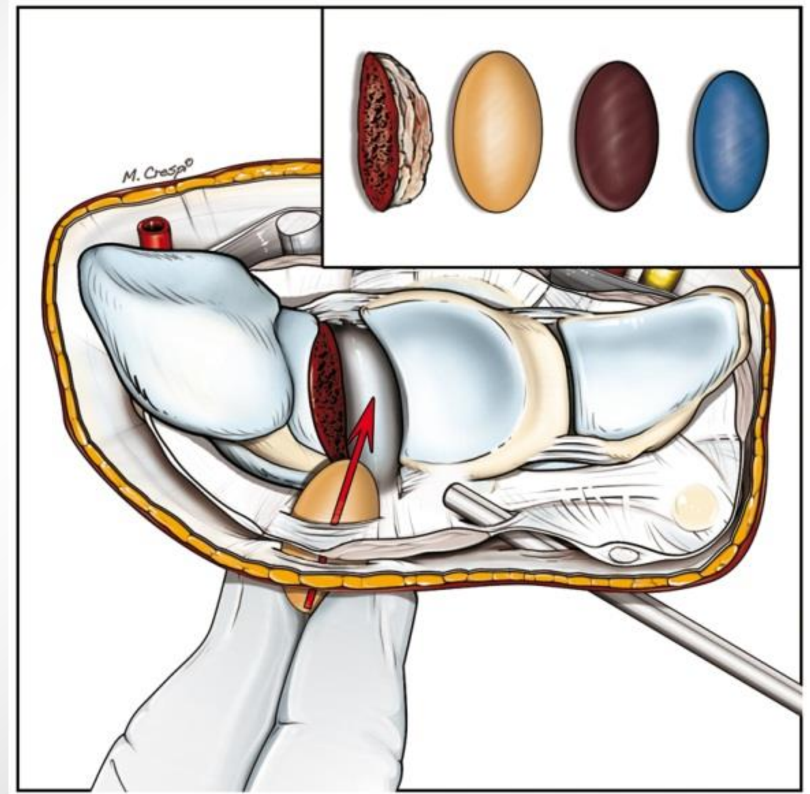
TECHNIQUE

6/ Placing the test implant (3 sizes)



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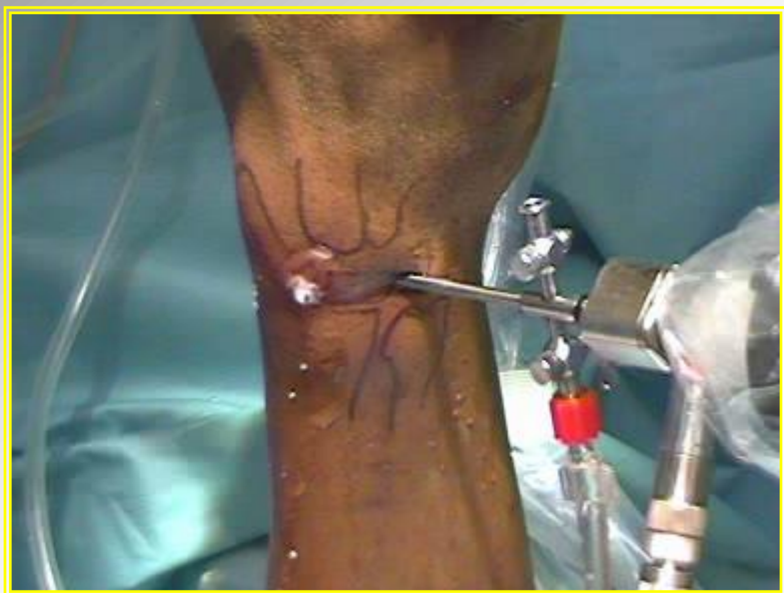
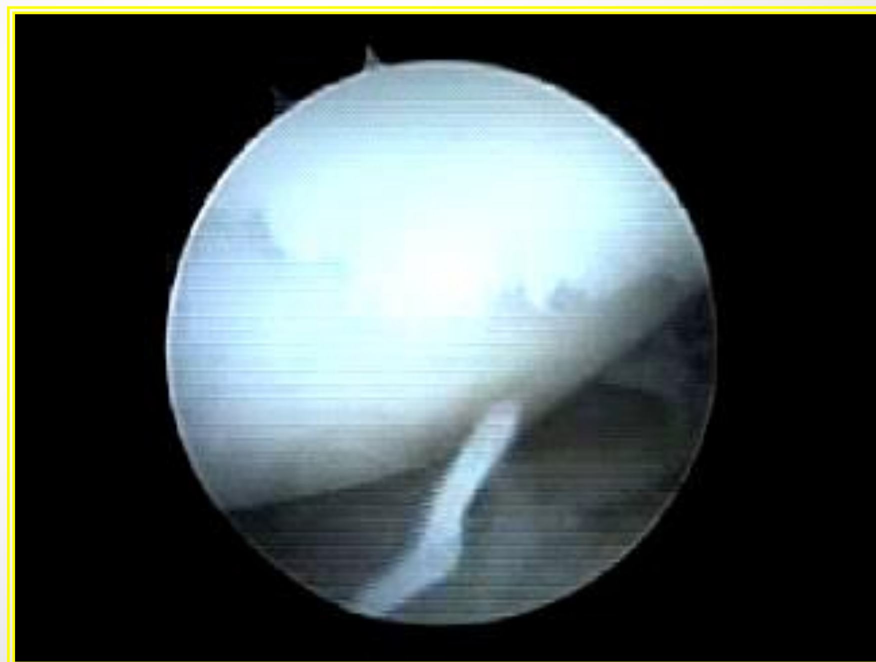
TECHNIQUE

6/ Placing the test implant (3 sizes)





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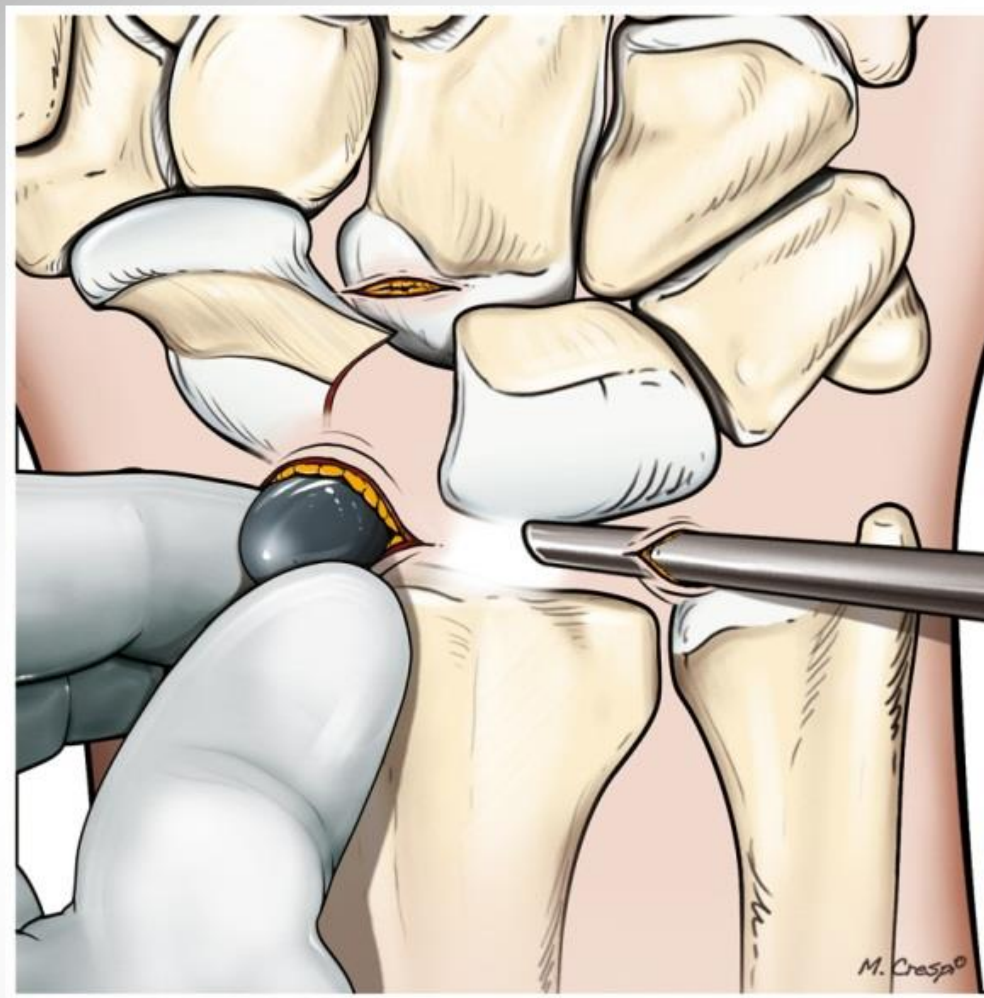
TECHNIQUE

7/ Placing the final implant (3 sizes)



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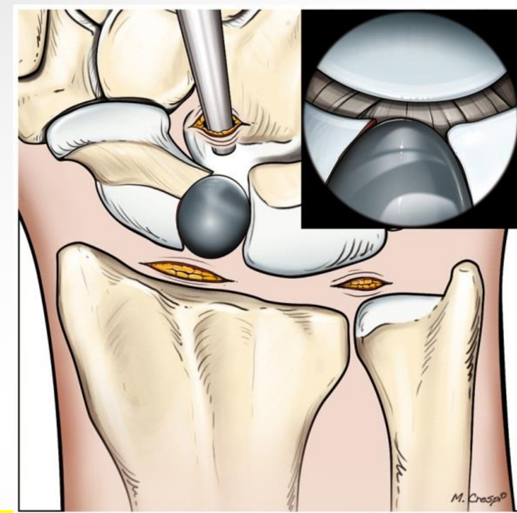
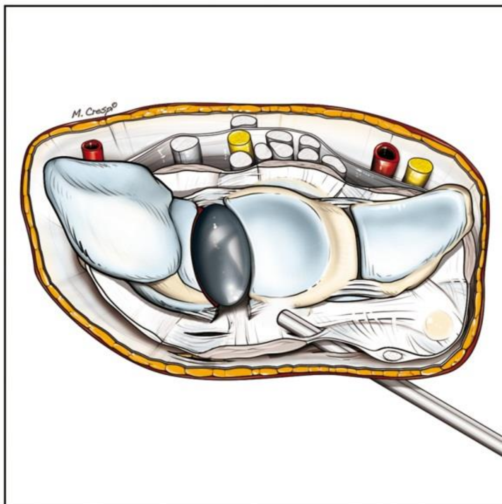
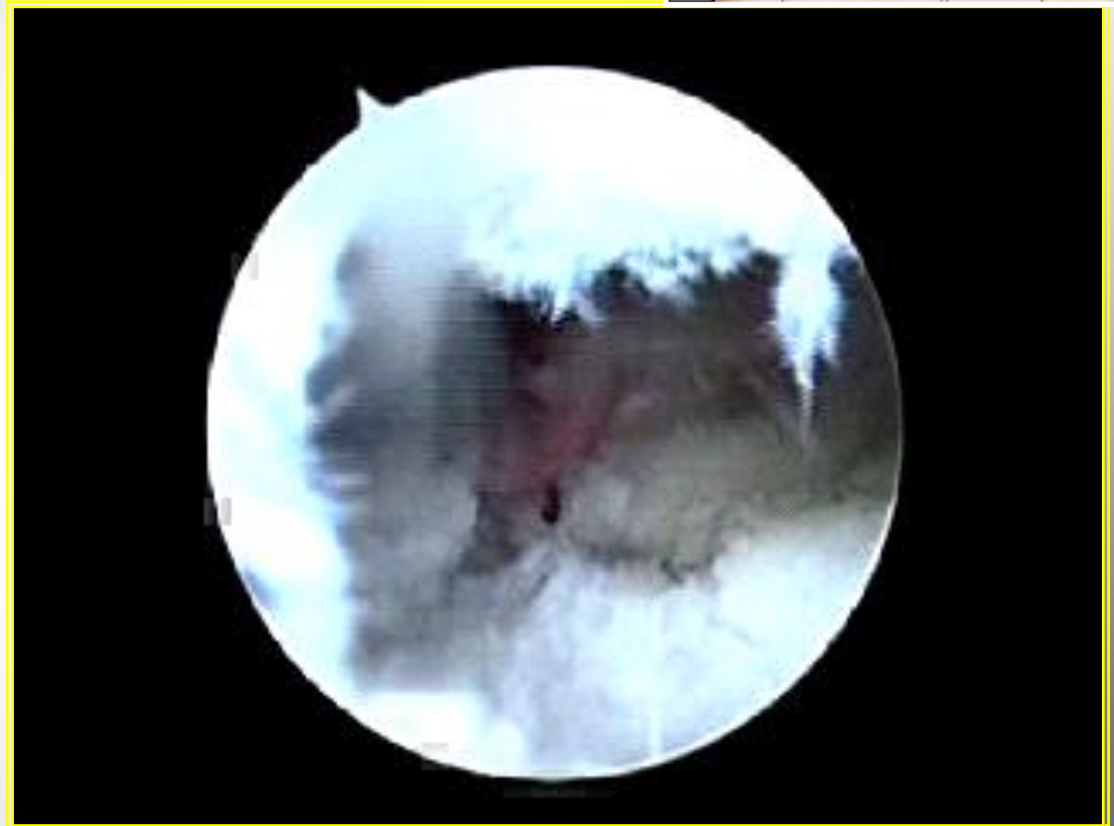
TECHNIQUE

7/ Placing the final implant

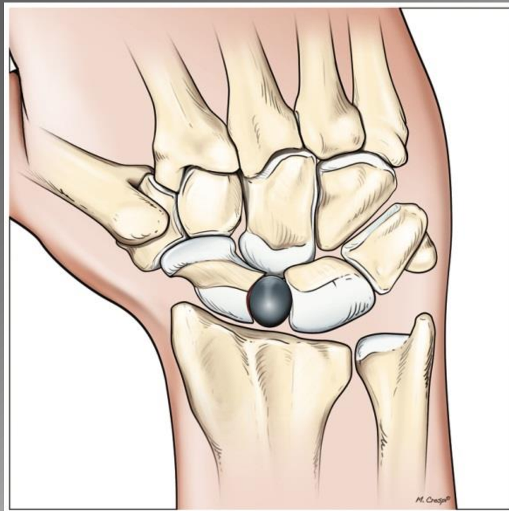


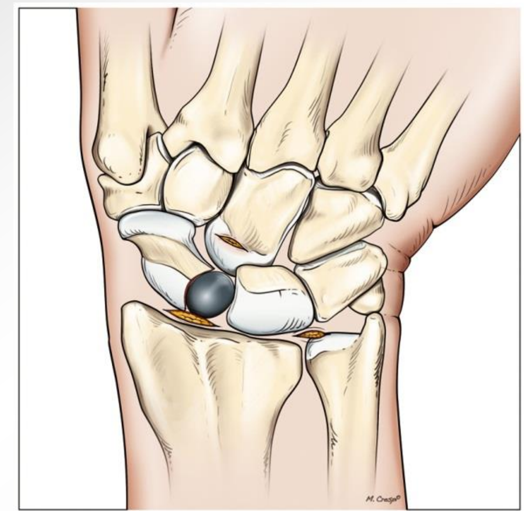


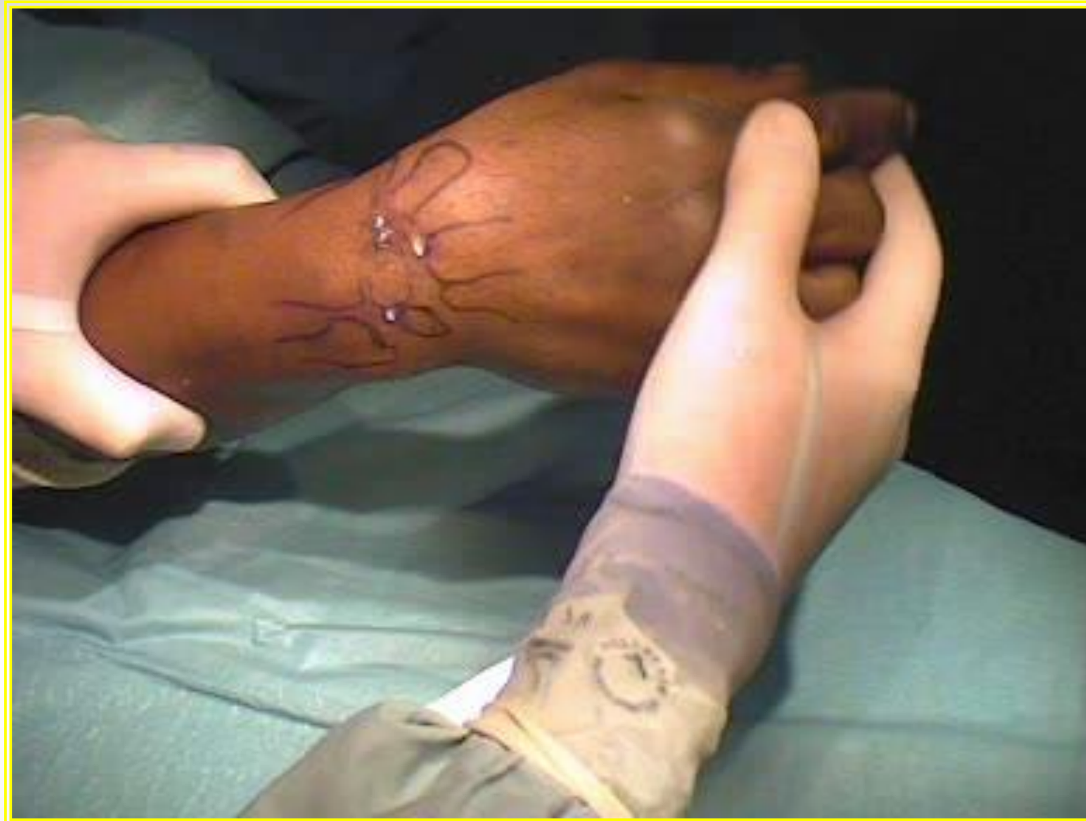


TECHNIQUE

Immediate mobility







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TECHNIQUE

- Radial styloidectomy if necessary
- Protective dressing for 1 week
- Mobility started immediately
- Rehabilitation if necessary after 3 weeks

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RESULTS

Long term results – retrospective study

Inclusion criteria: age under 65 yo

(1999-2006)
15 patients – 1 lost to FU

14 patients all males
Etiology: avascular necrosis of proximal pole

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RESULTS

Data entry – Methods

ROM in °: F-E-RD-UD (comparative)
Grip strength: kgf (jamar) (comparative)
pain : Visual Analog Scale (VAS)

X-rays: SL angle, grade of SNAC
long term: stability of implant, capitate notch

Mayo-Wrist Score
DASH

Patient satisfaction

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RESULTS

Average age : 52.71 +/- 9.92 y.o. (range 40 to 65)

Average follow-up : 10.3 y +/- 1.78 (8-15)

57.1% sedentary
42.9% manual worker

71.4% dominant side

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RESULTS

Etiology

7 patients: nonunion of proximal pole
average delay 21.1 years (3-40)
7 others unknown trauma

Previous treatment:

2 conservative treatment
4 Russe graft (1 with silicone replacement)

Location

2 (14.3%) waist fracture
12 (85.7%) proximal pole

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RESULTS

X-Rays

4 SNAC 1 (28.6%)
7 SNAC 2 (50%)
3 SNAC 3(21.4%)

8 DISI (51.7%) (SL angle=60-90°)

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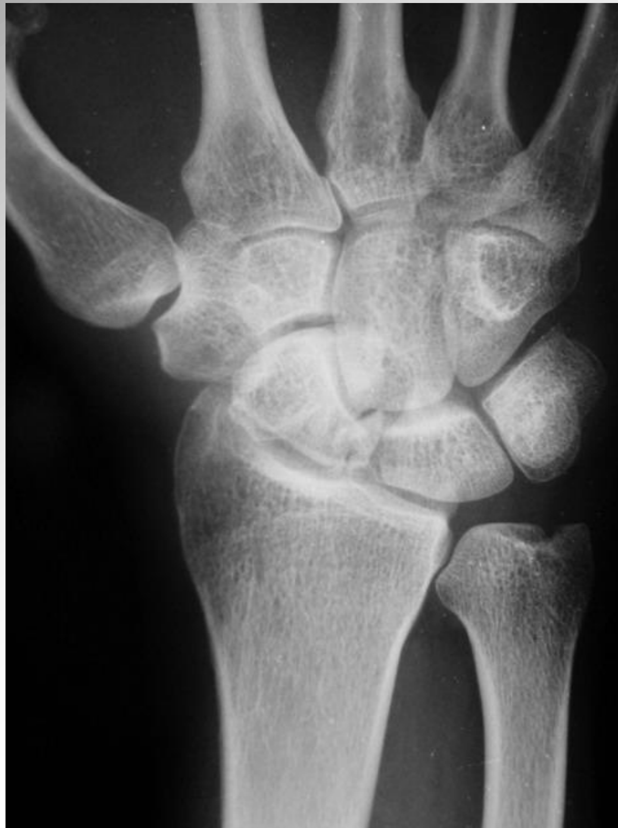
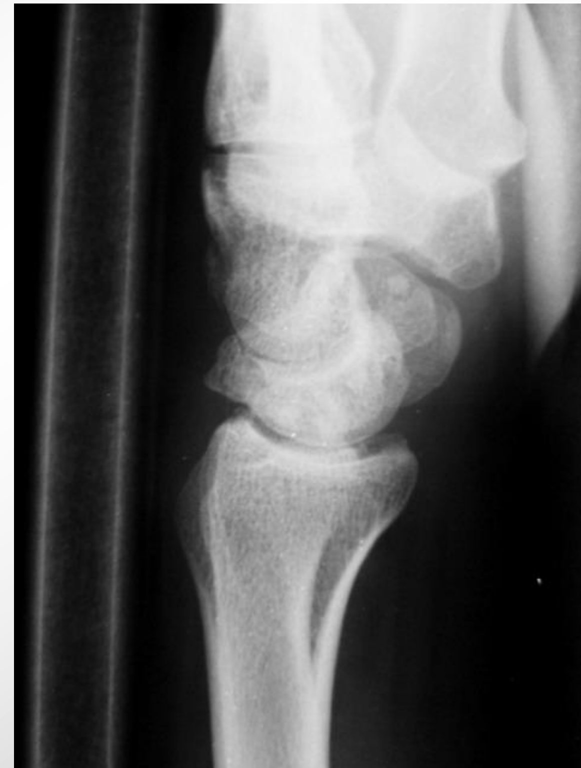
Clinical case

Unknown trauma, 42 yo, avascular necrosis
DISI





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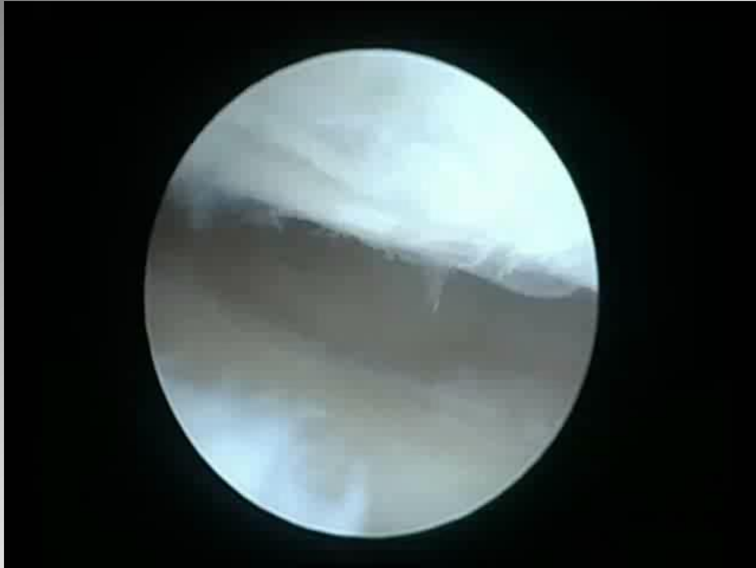
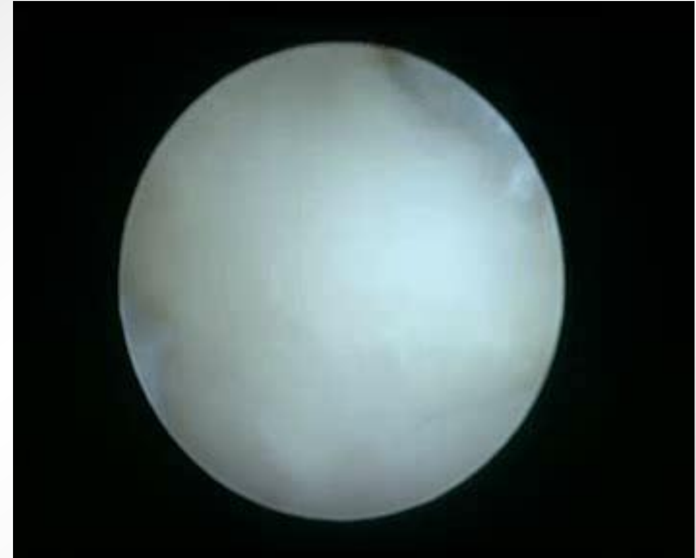
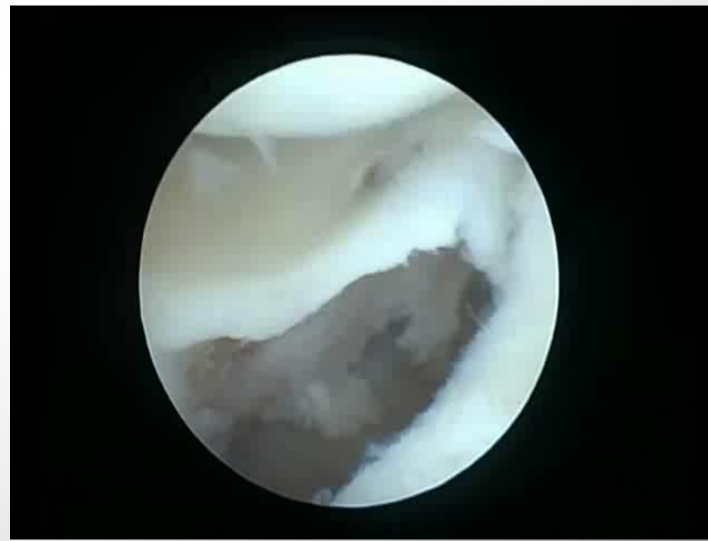
Clinical case

Unknown trauma, avascular necrosis
DISI







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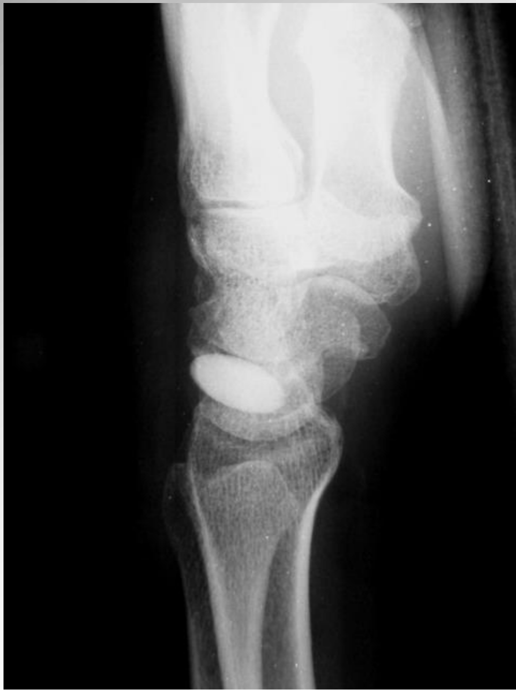
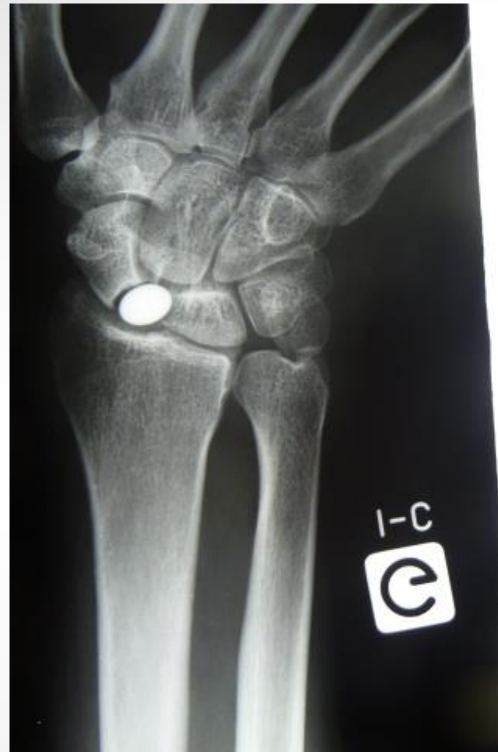
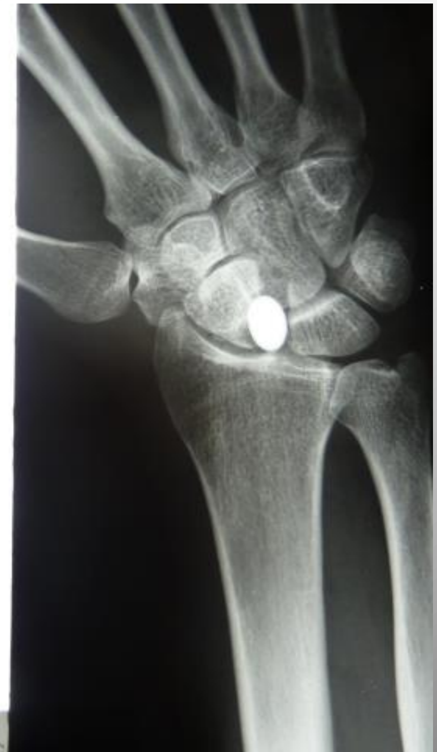
Clinical case

11 years of follow-up
No pain, normal motion, no DISI







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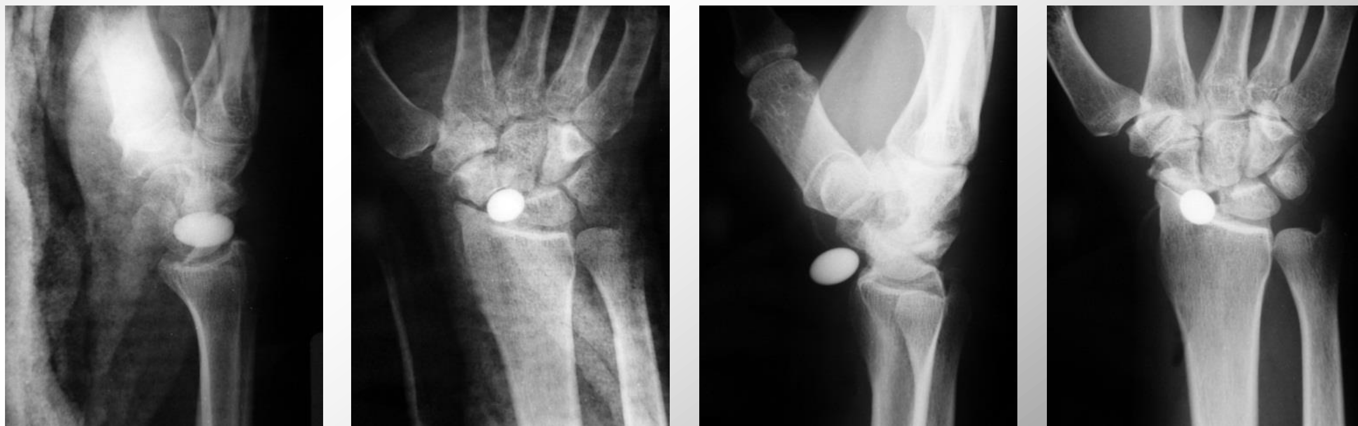
RESULTS

Post-operative immobilization

25.4 d +/-10.4(range 10 to 45)

All patients had option of removing the splint

1 case of early volar dislocation



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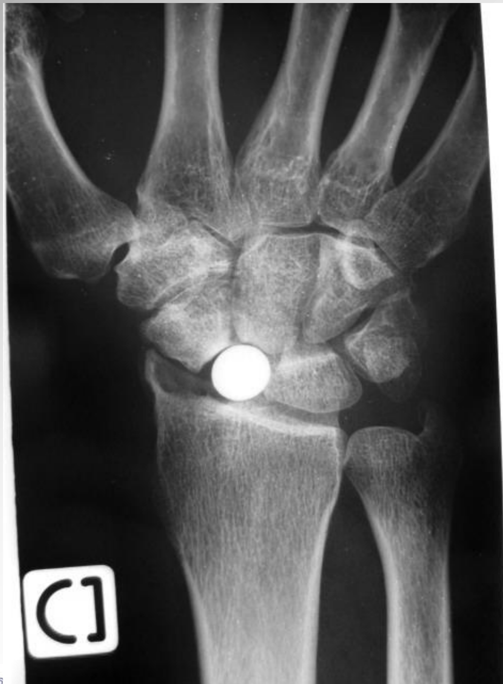
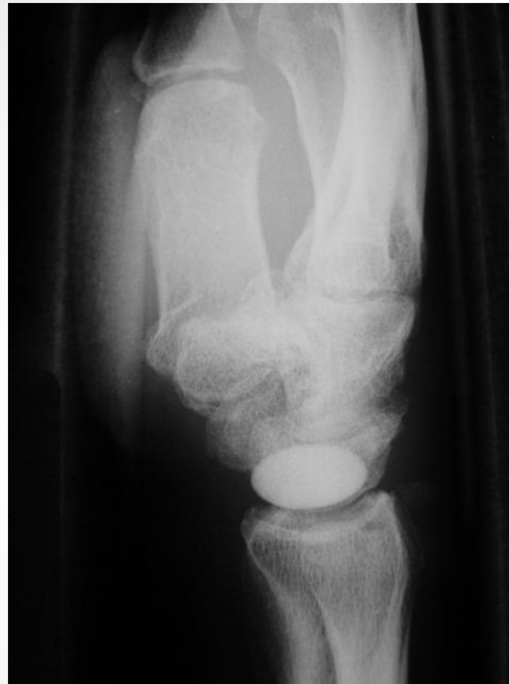
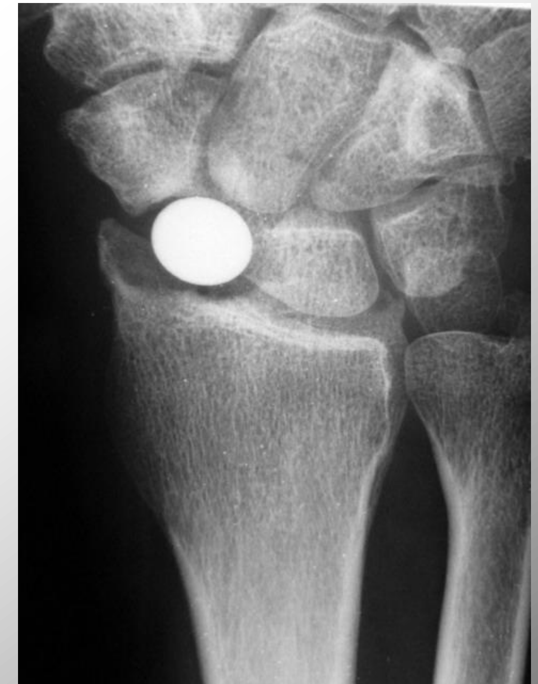
RESULTS

Replacement, volar capsule suture, styloidectomy
No problem until now : 13 years of FU

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Total functionnal outcomes

	Pre-op	post-op	controlateral
Flexion	32.1	52.9 (p<0.01)	64.2 (p=0,26)
Extension	45	60 (p<0.01)	71.7 (p=0,35)
Radial deviation	7.6	18.2 (p<0.01)	24.3 (p=0,48)
Ulnar deviation	19.6	30.2(p<0.01)	36.7 (p=0,27)
Wrist strength	15.8	34.6 (p<0.01)	44.1 (p=0,18)
VAS	7.5	0.7 (p<0.01)	

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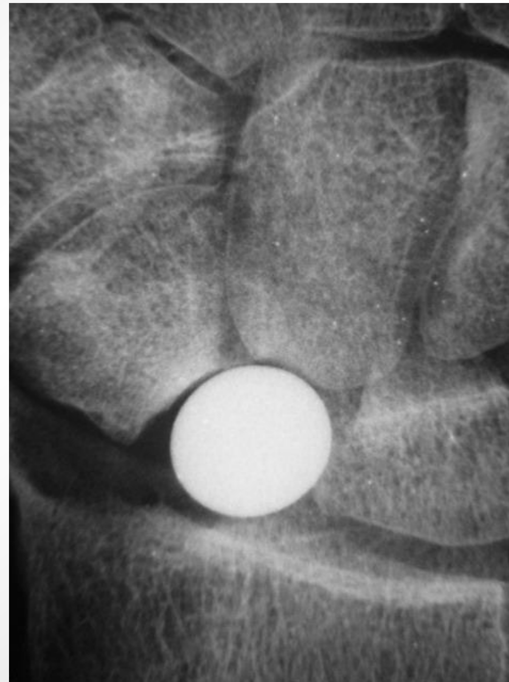
RESULTS

X-Rays

12 stable implant
5 corrected DISI (41.7%) – 1 remaining
6 capitate notch



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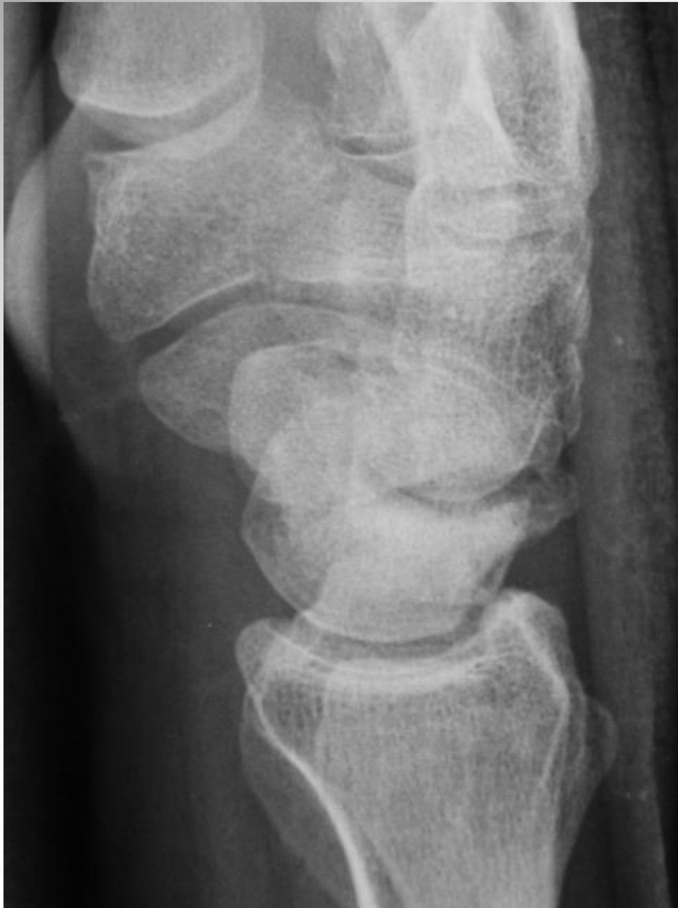
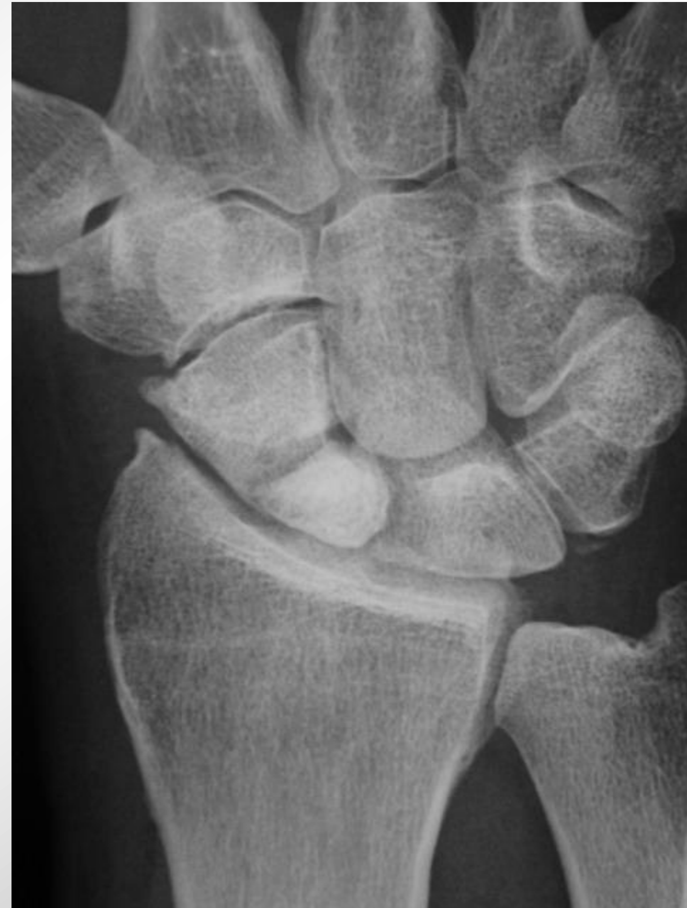
Clinical case

40 yo, manual worker, unknown fracture, DISI





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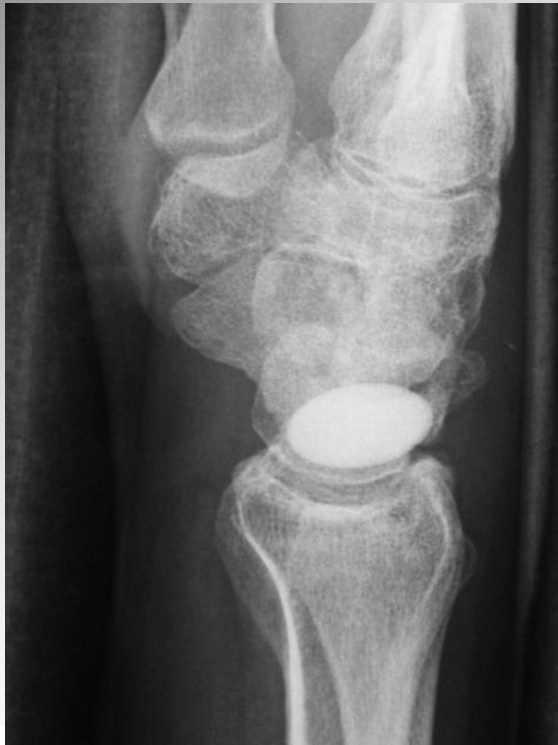
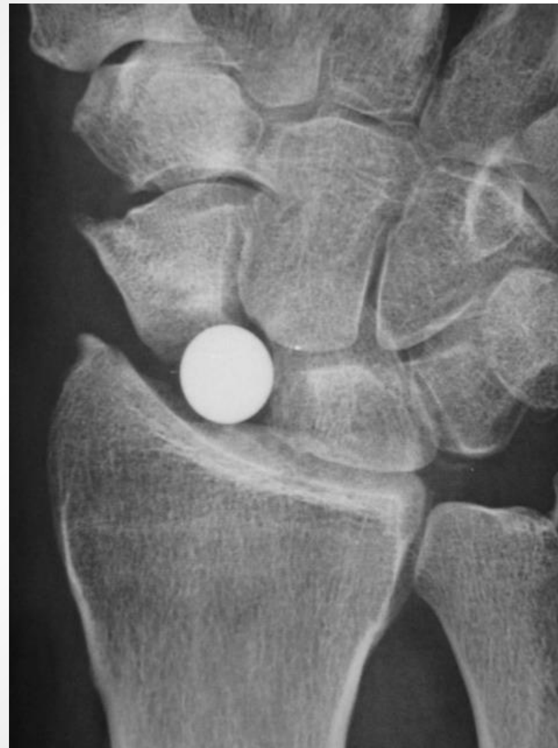
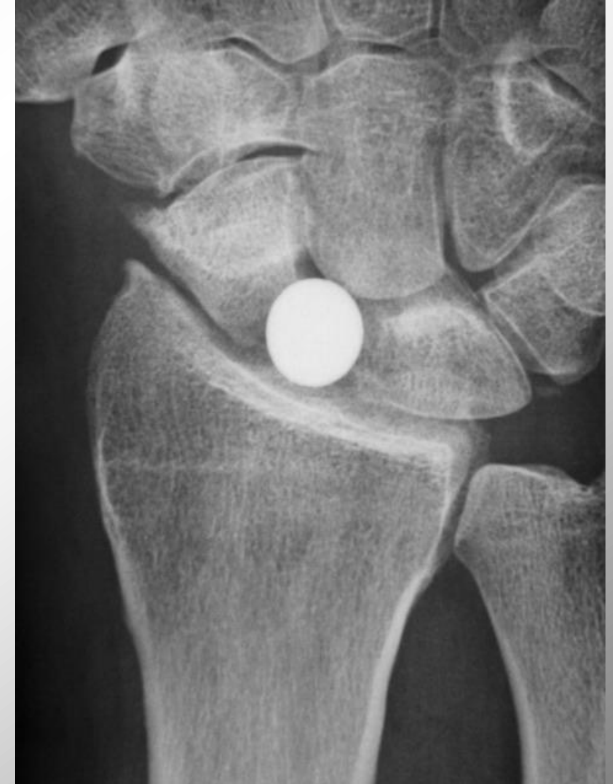
Clinical case

2 years of follow-up, small capitate notch, secondary styloidectomy







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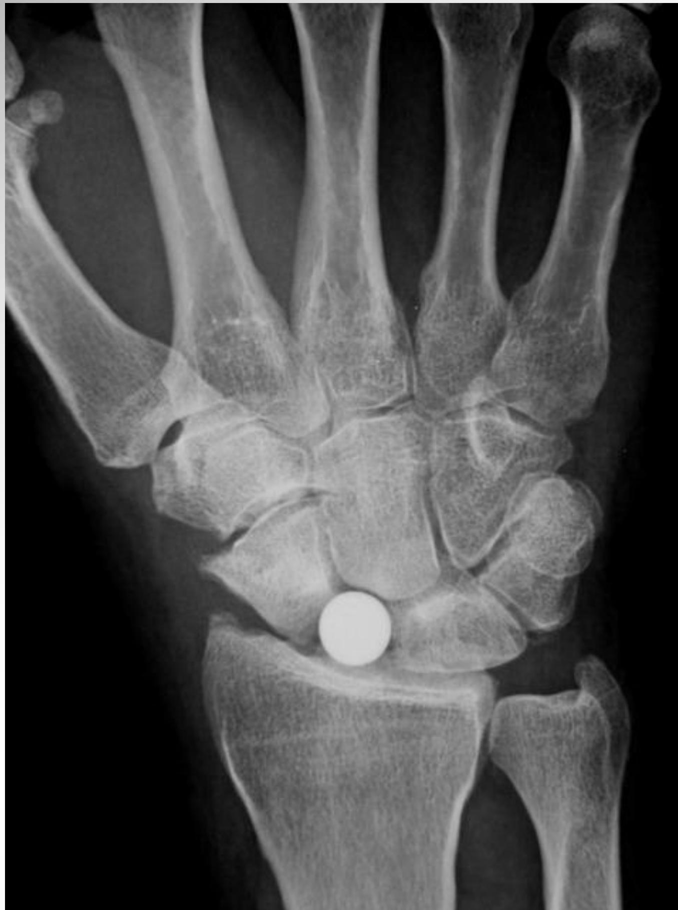
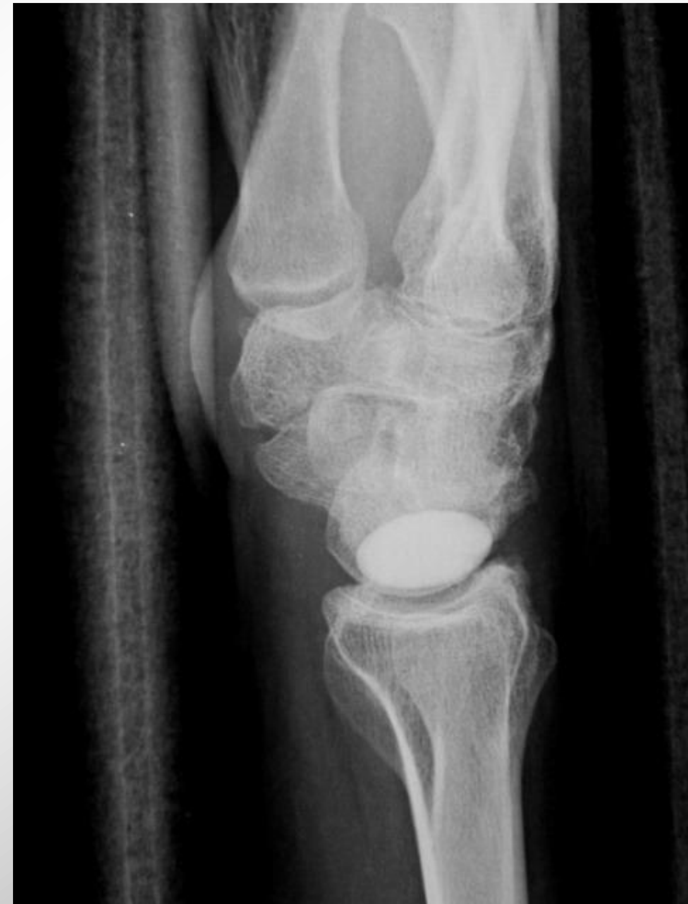
Clinical case

11 years of follow-up, capitate notch, no pain, corrected DISI





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RESULTS

Mayo-Wrist-Score

79.6 +/- 4

Excellent and good in 66.7%

Average in 33.3%

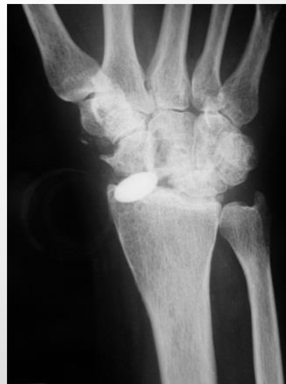
DASH

Ufortunately no preop DASH

7.6 +/-2.3 (range 2.3 to 15.9)

2 failures- waist fractures !!!

FC fusion after 6 months and 6 years



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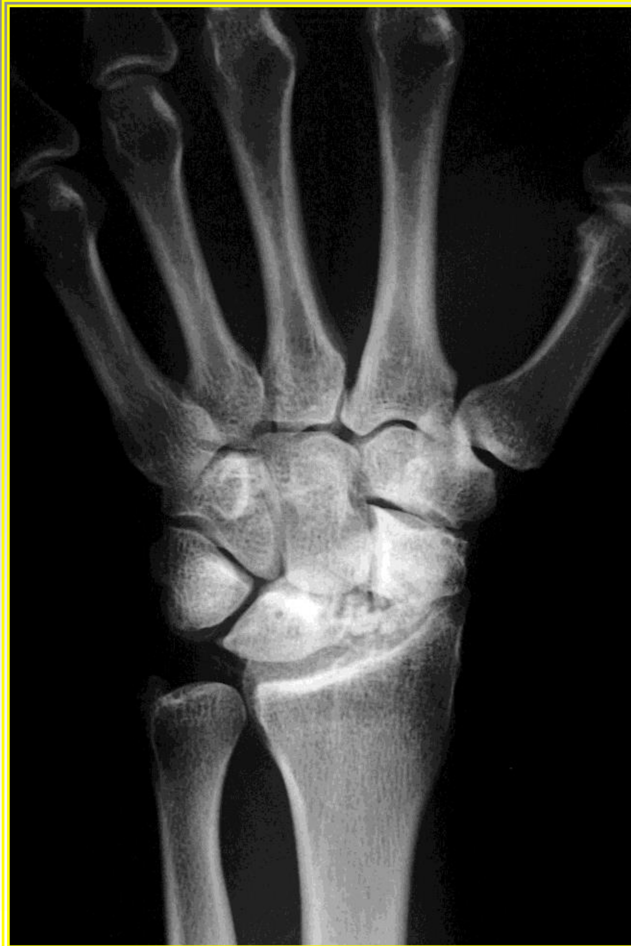
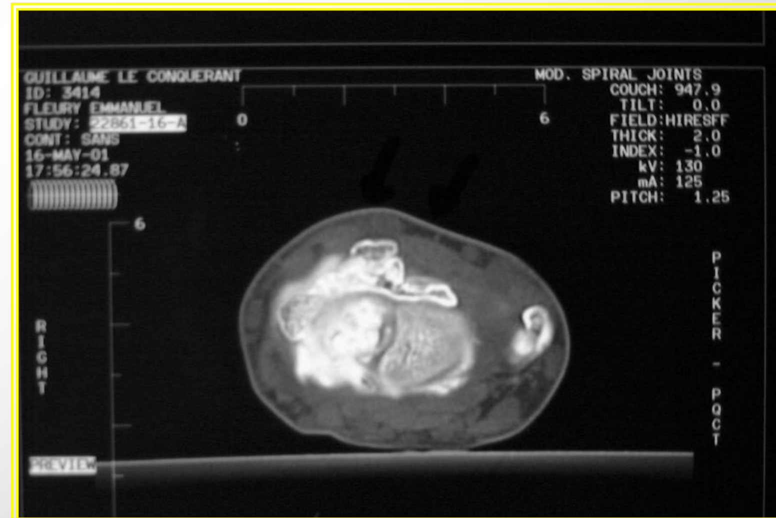
Clinical case



42 y.o.
SNAC wrist
Flexion 20°
Extension 30°
Disabling pain



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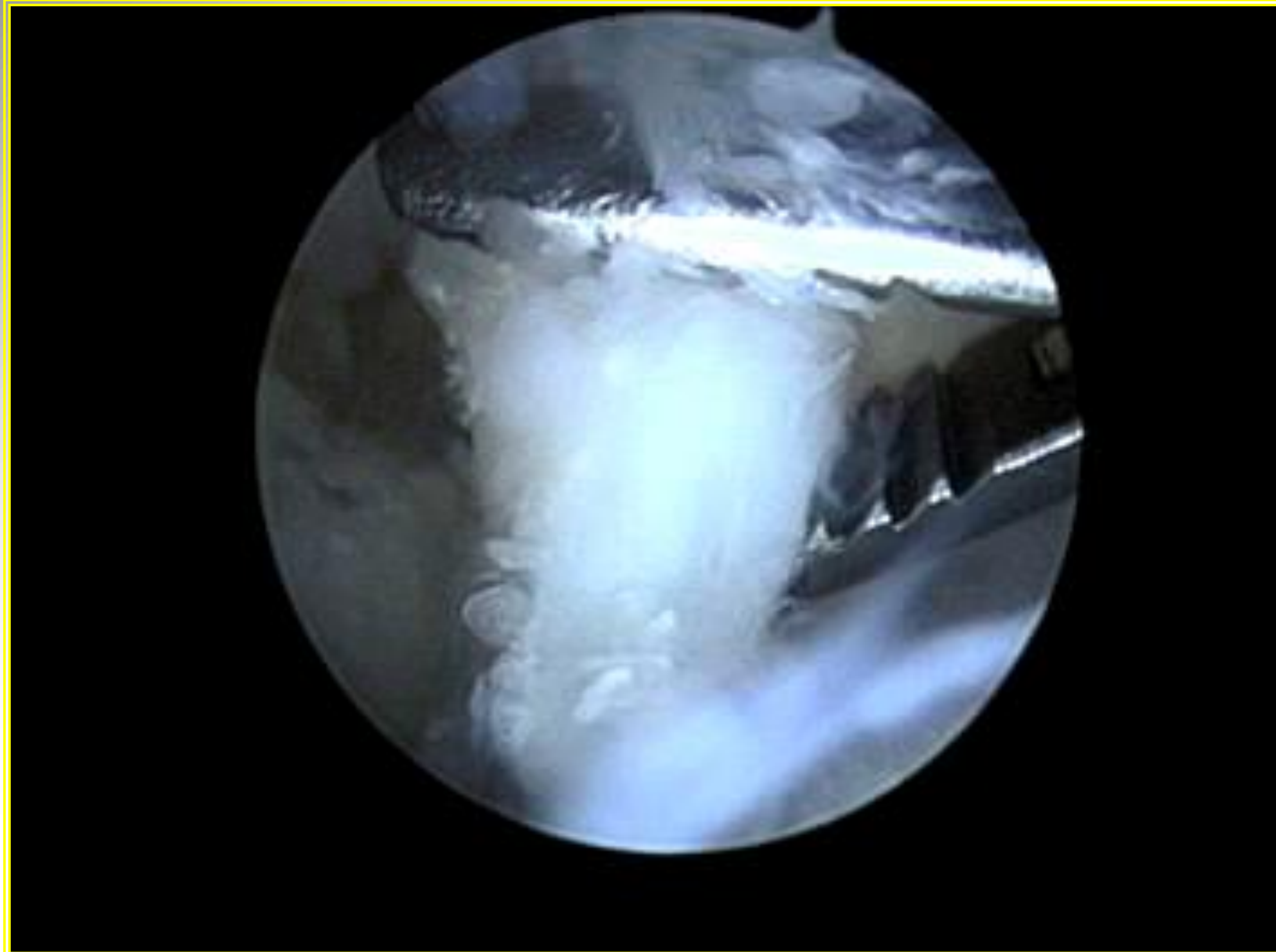
Clinical case



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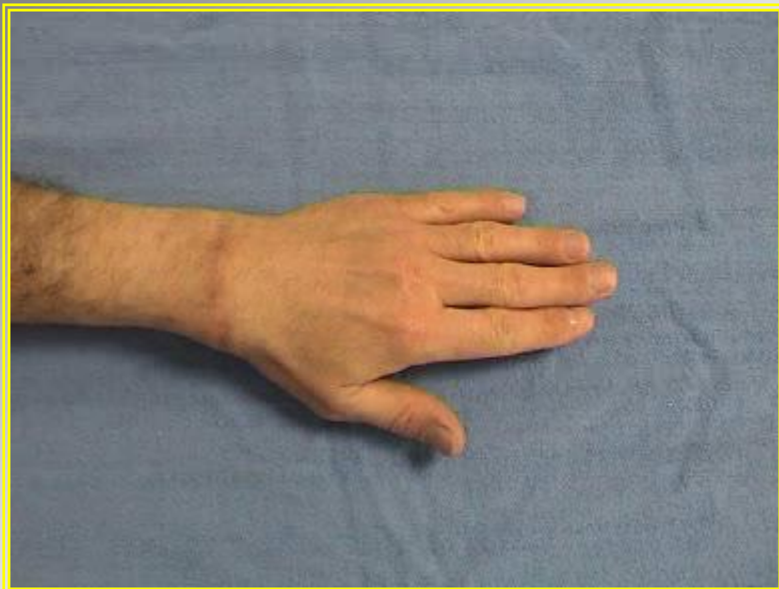
Clinical case



3 weeks
of follow-up

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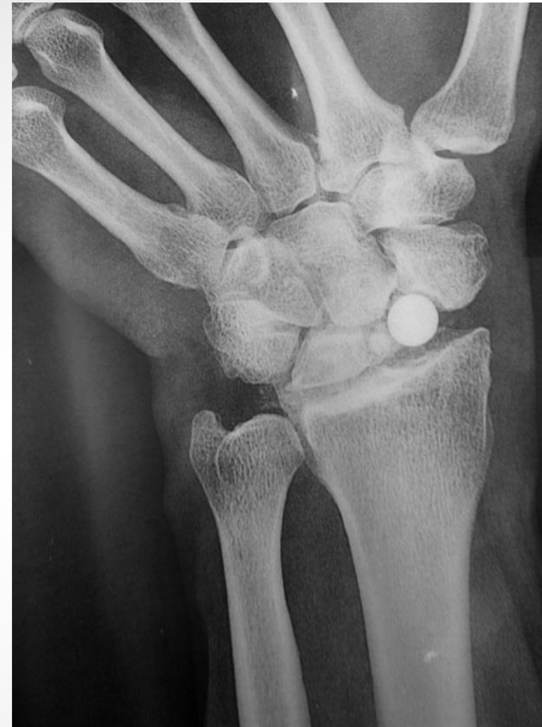
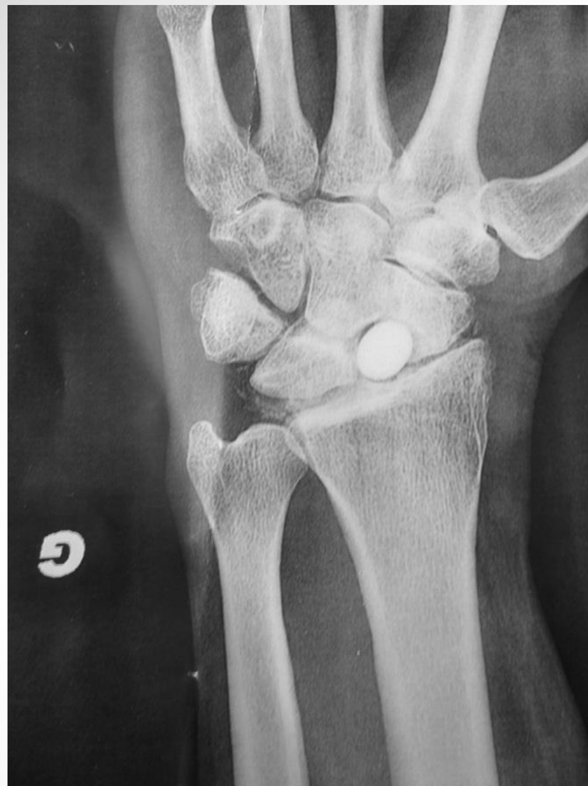
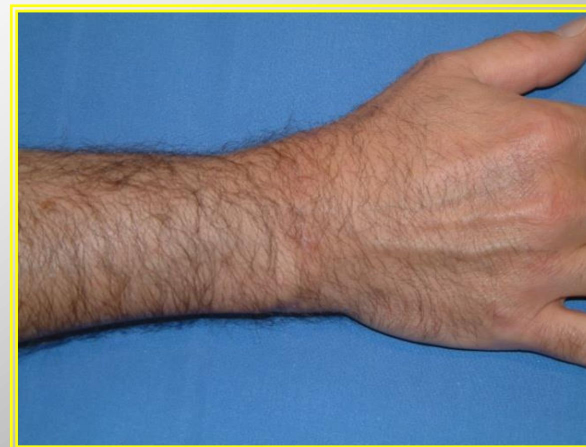
Clinical case

Follow-up : 14 years
Flexion 45°
Extension 60°
No pain







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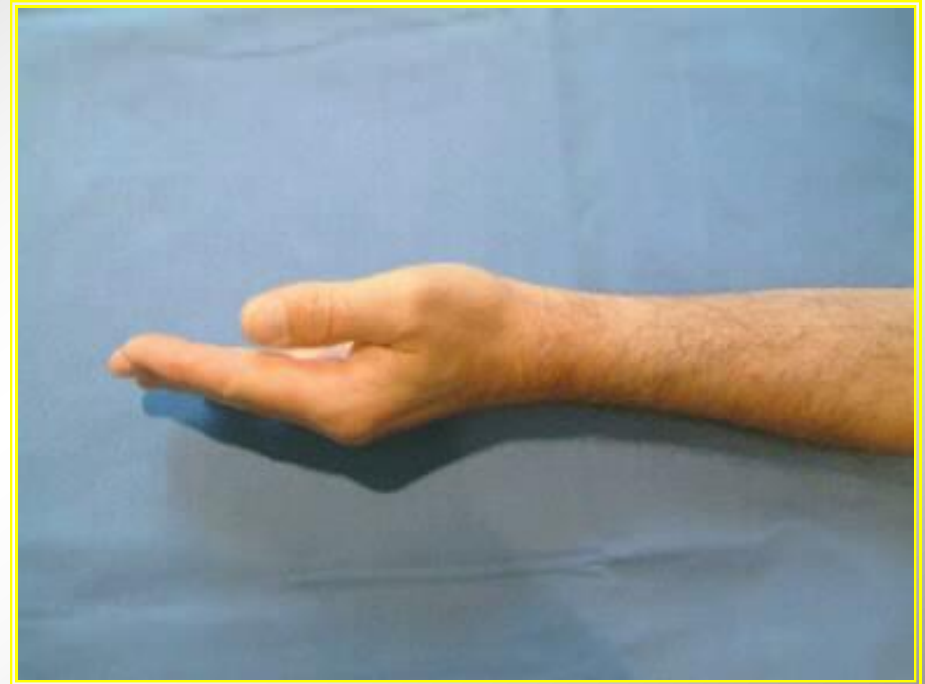
Clinical case B

Follow-up : 14 years
Flexion 45°
Extension 60°
No pain



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Conclusion

Arthroscopic arthroplasty for <u>proximal pole nonunion</u>

seems better that the simple « waiting therapeutic option » we expected.

We recommend it in proximal pole necrosis when the reconstruction is not available

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