

Principales indications en chirurgie réglée de l'arthroscopie du poignet

Christian Dumontier

Institut de la Main & hôpital saint Antoine, Paris

Intérêt Thérapeutique (1000 cas) :

Absence de geste (4%)

Aide aux traitements des fractures (7%)

Lésions du ligament triangulaire (17%)

Lésions des ligaments intrinsèques (21%)

Ectomie (13%)

Excision des kystes synoviaux (21%)

Prothèses partielles (2,5%)

Autres (Synovectomie, arthrolyses...) (14,5%)

Débridement arthroscopique du poignet



Christian Dumontier

Institut de la Main & SOS Main saint Antoine,
Paris

Merci au GEAP/EWAS

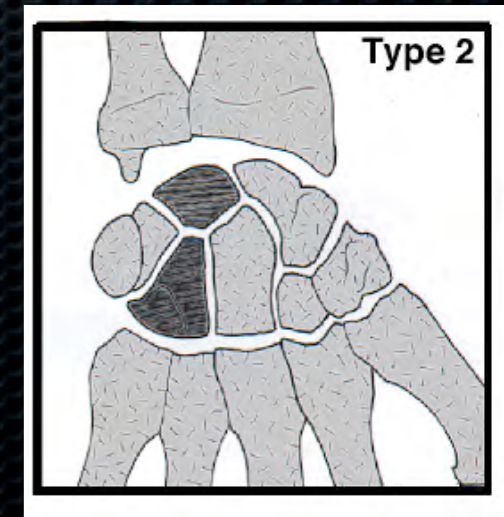
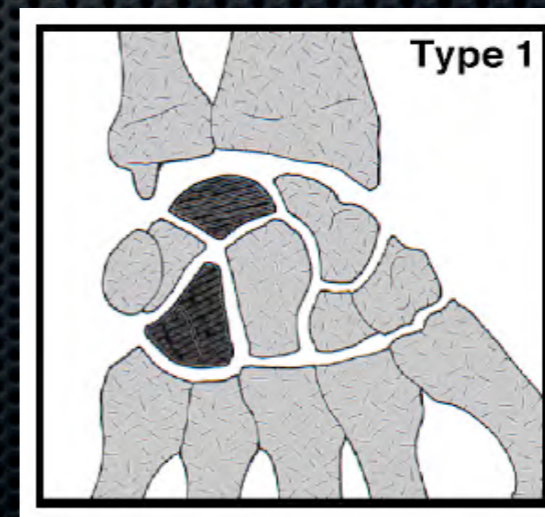
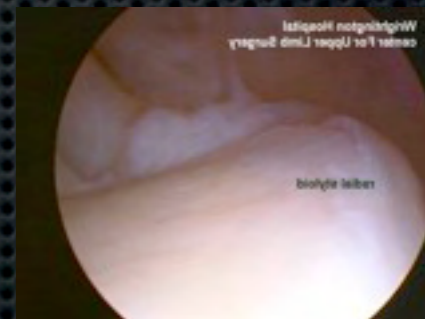
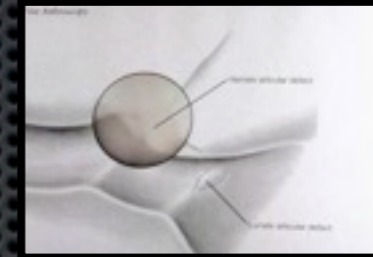
Débridement ?

✦ Libération

- ✦ Raideur capsulo-ligamentaire (arthrolyse)

✦ Ablation

- ✦ Corps étrangers (PSA scaphoïde, Kienböck,...)
- ✦ Arthrose (styloïde radiale, wafer, hamatum, STT, TM,...)
- ✦ Déchirure ligamentaire (TFCC)
- ✦ Synovite (PR)
- ✦ Kystes synoviaux



Lésions ligamentaires

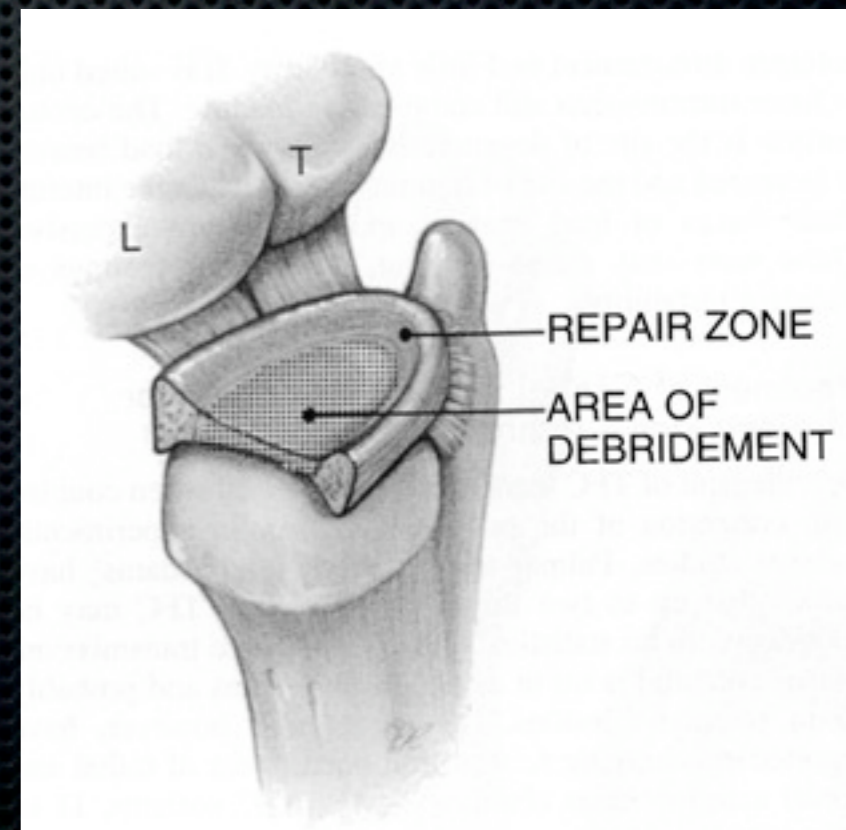
- ✦ Débridement TFCC
- ✦ Débridement ligament scapholunaire



Débridement TFCC



- ✦ Seuls les 25% périphériques sont vascularisés
- ✦ Toutes les lésions “centrales”, traumatiques ou dégénératives ne peuvent cicatriser
- ✦ Ablation arthroscopique



Débridement TFCC

- ✦ Scope dans voie 3/4
- ✦ Instrumentation 4/5 (ou 6R)
- ✦ Apprécier l'étendue de la rupture



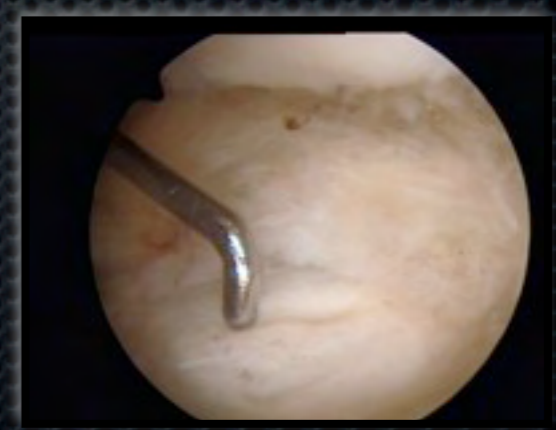
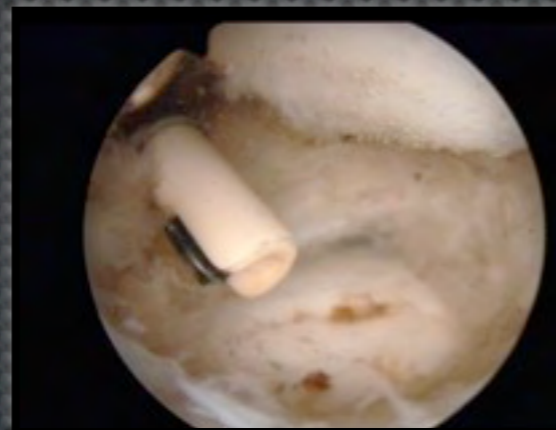
Techniques de débridement



débridement mécanique



Lambeau instable

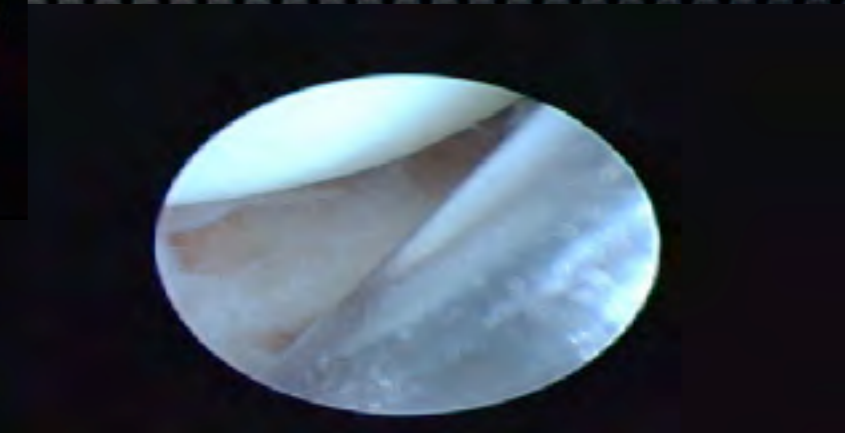
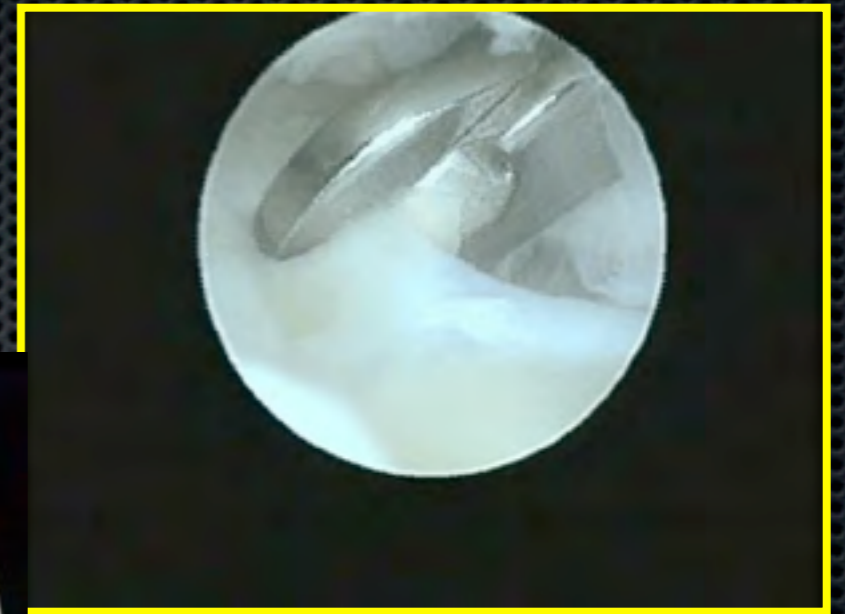


débridement électrique (VAPR)

Débridement TFCC

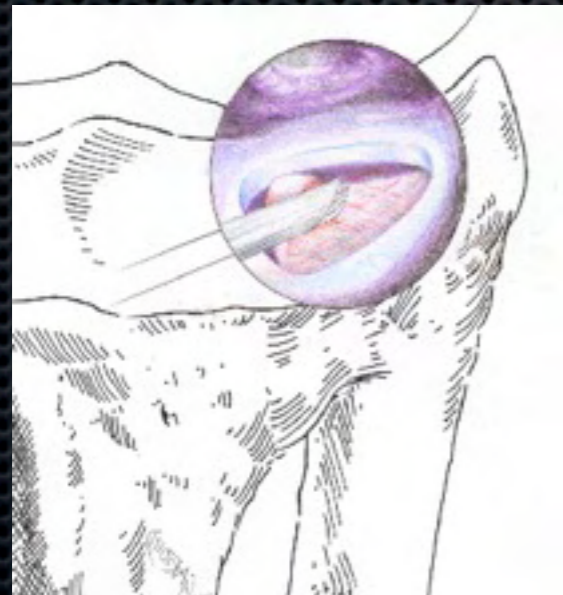
- ✦ Difficultés:

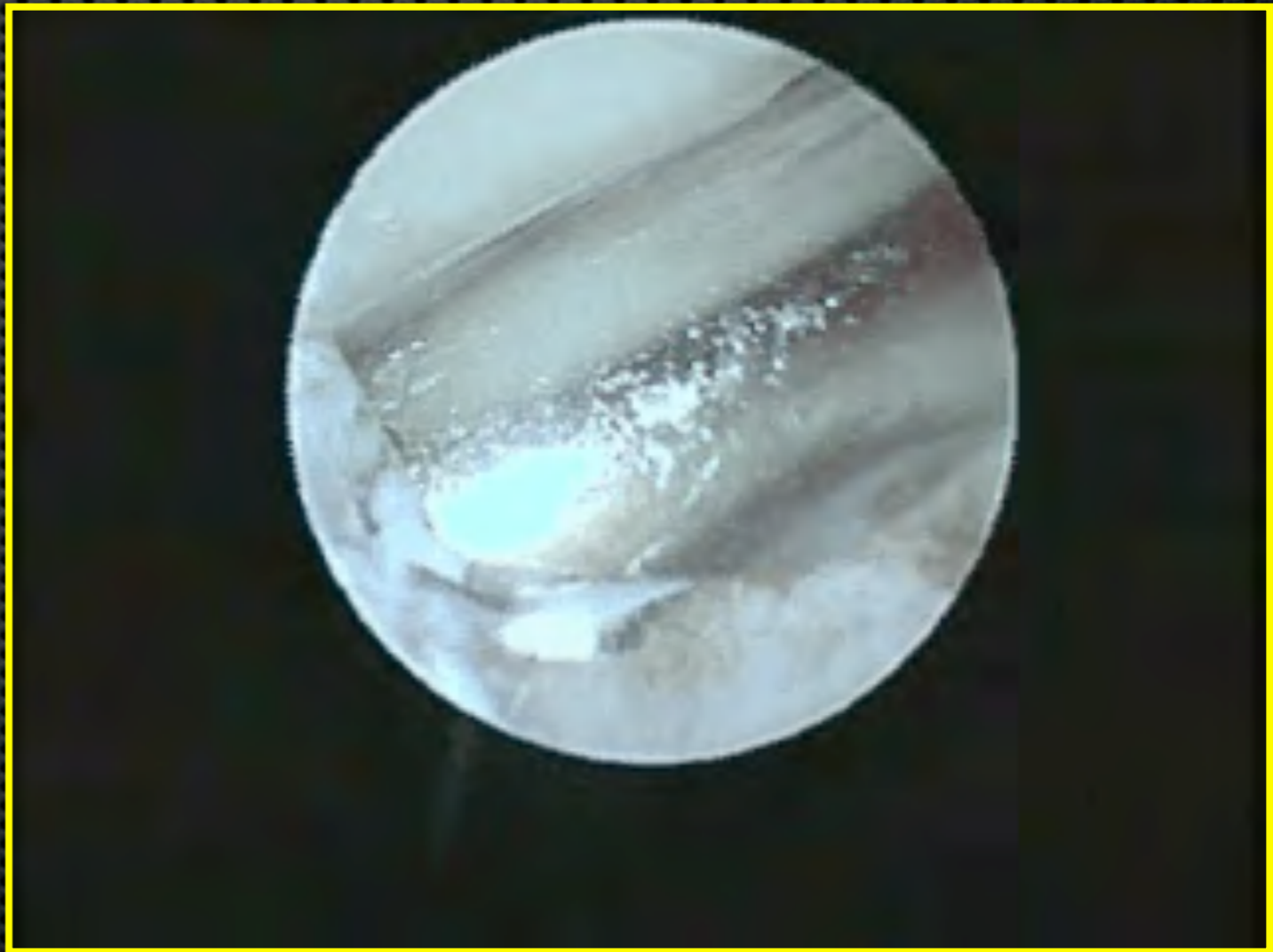
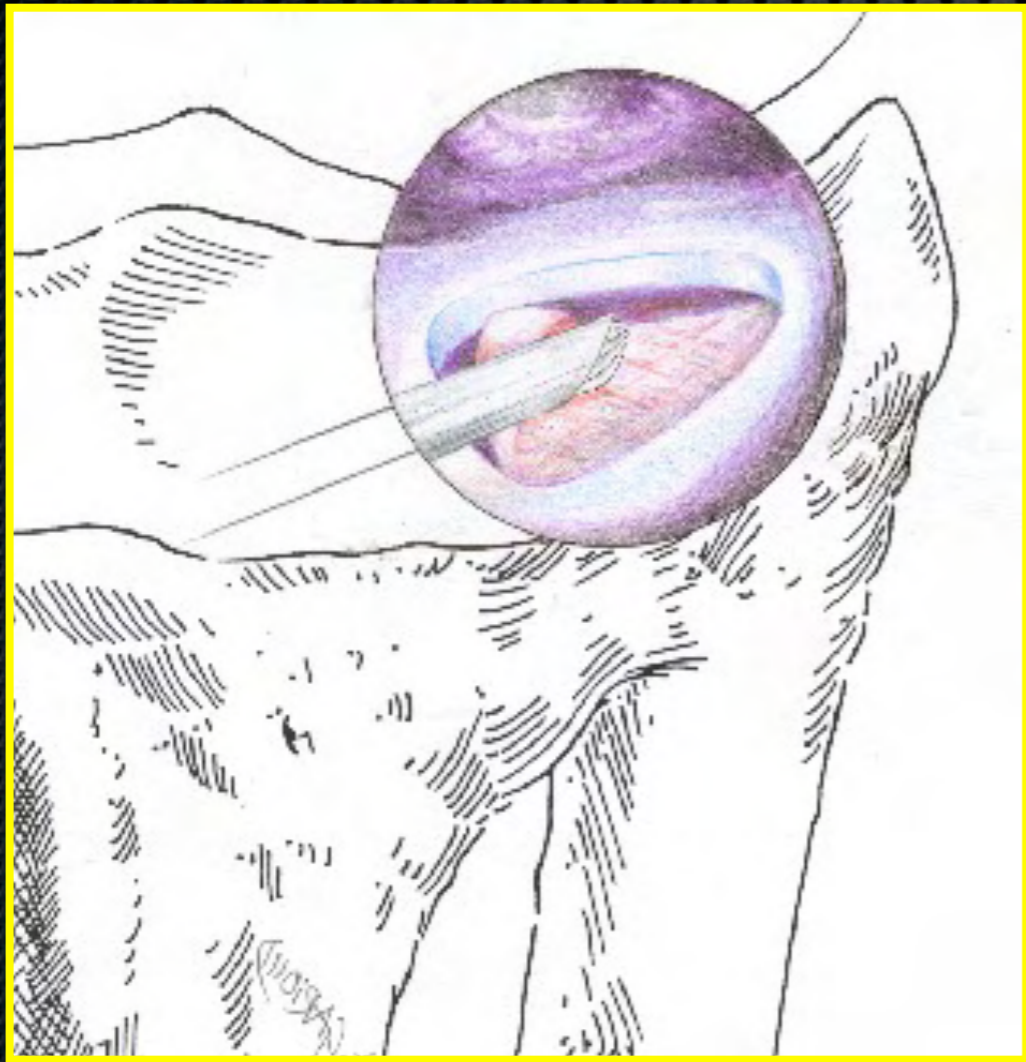
- ✦ La partie postérieure du TFCC (trop proche de l'instrument)
- ✦ Garder suffisamment de berge pour ne pas déstabiliser la RUD



Débridement TFCC- gestes associés

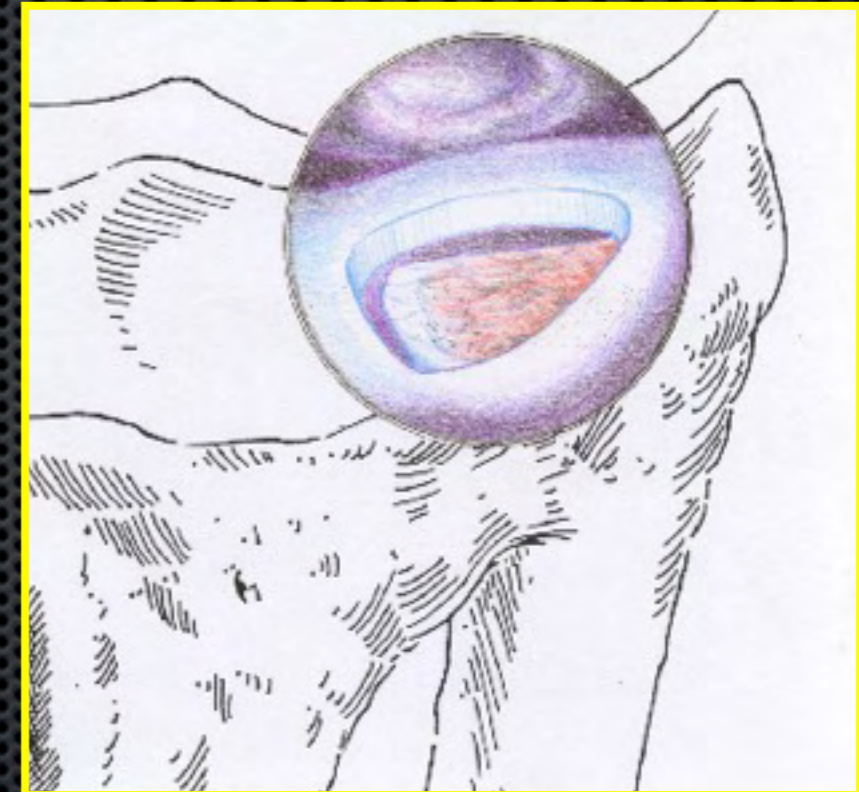
- Ulna long avec conflit ulno-carpien
- Résection arthroscopique de l'ulna (Wafer) 2/3 mm





Wafer: difficultés

- ✦ Enlever (assez) et de façon régulière
- ✦ Utiliser la pronosupination (difficultés en arrière)
- ✦ Ampli de brillance



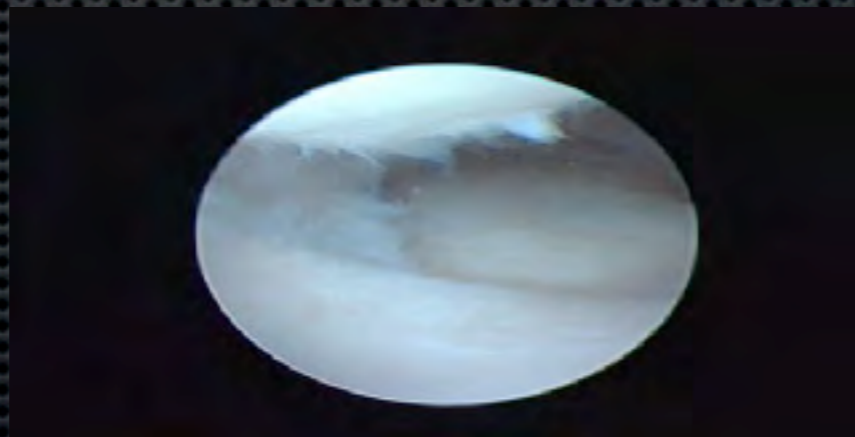
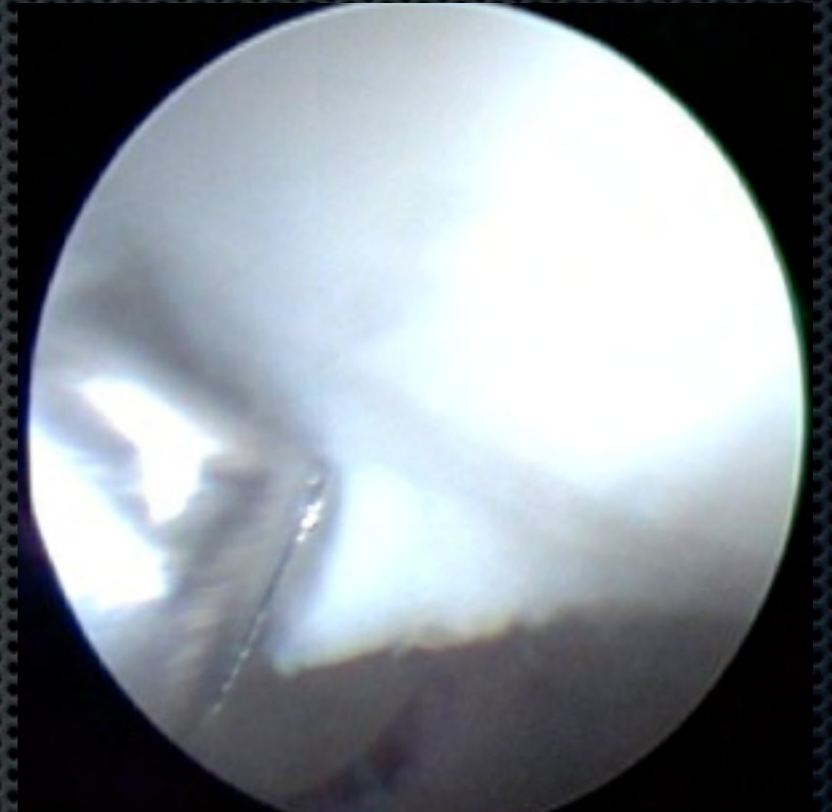
Wafer: difficultés

- ✦ Enlever assez en dehors
- ✦ Sans abîmer le cartilage radial



Débridement TFCC- gestes associés

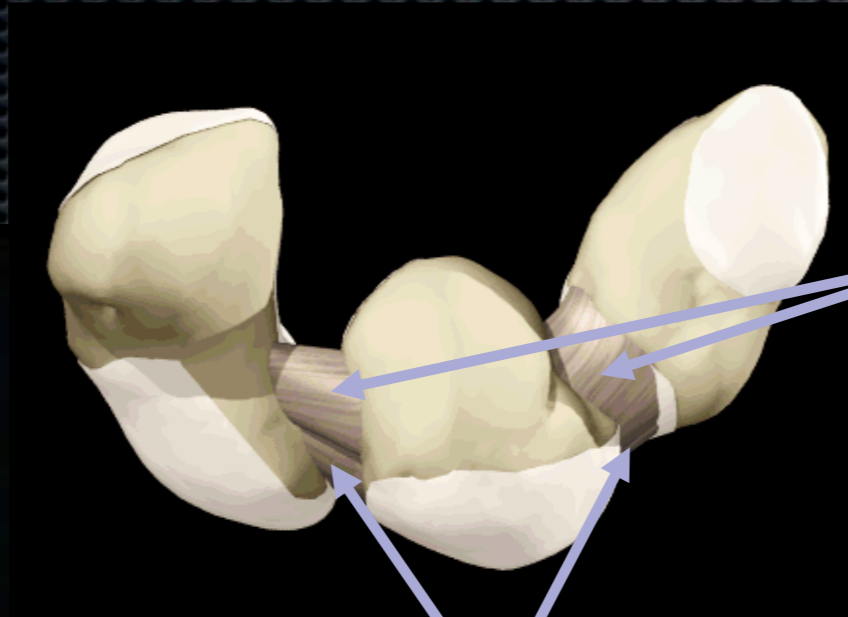
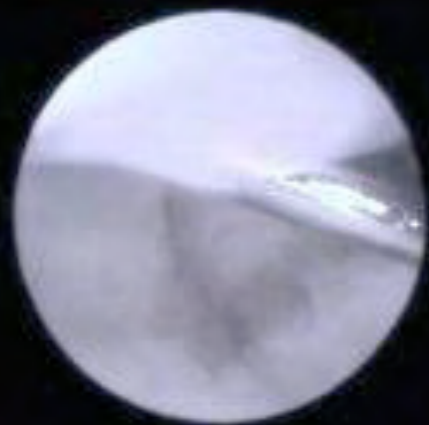
- ✦ Lésions cartilagineuses en miroir (excision des fragments cartilagineux libres)



Débridement TFCC: résultats

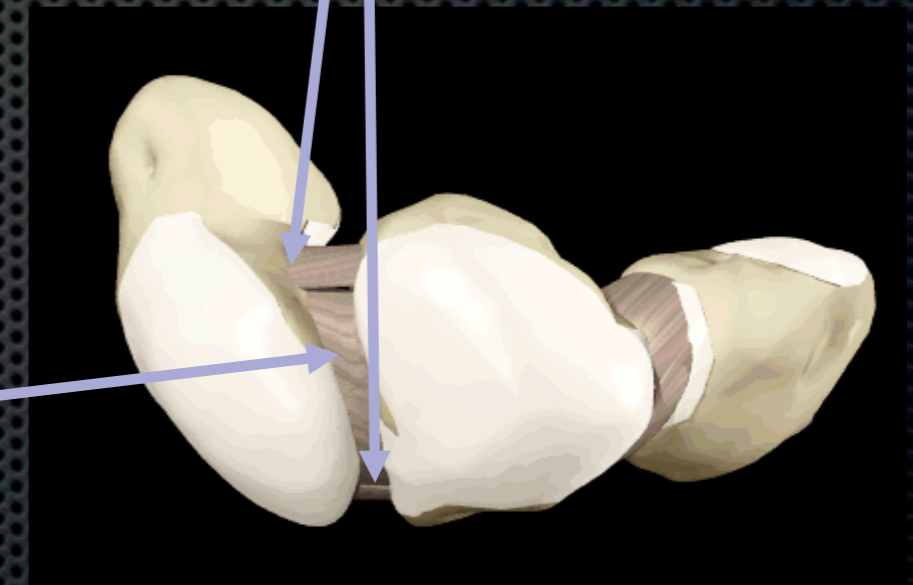
- ✦ Osterman (52 cas)
 - ✦ 85% de bons et très bons résultats
- ✦ Fontes (248 cas)
 - ✦ 84% de bons résultats (traumatique)
 - ✦ 63% de bons résultats (dégénératif)

Débridement ligament interosseux



Débridement

Réinsertion



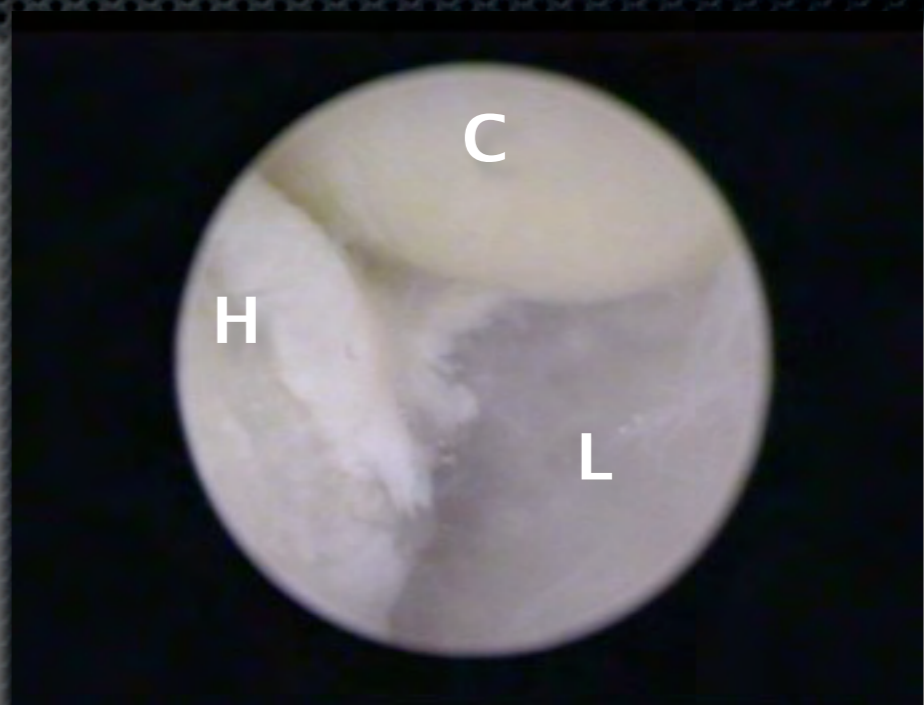
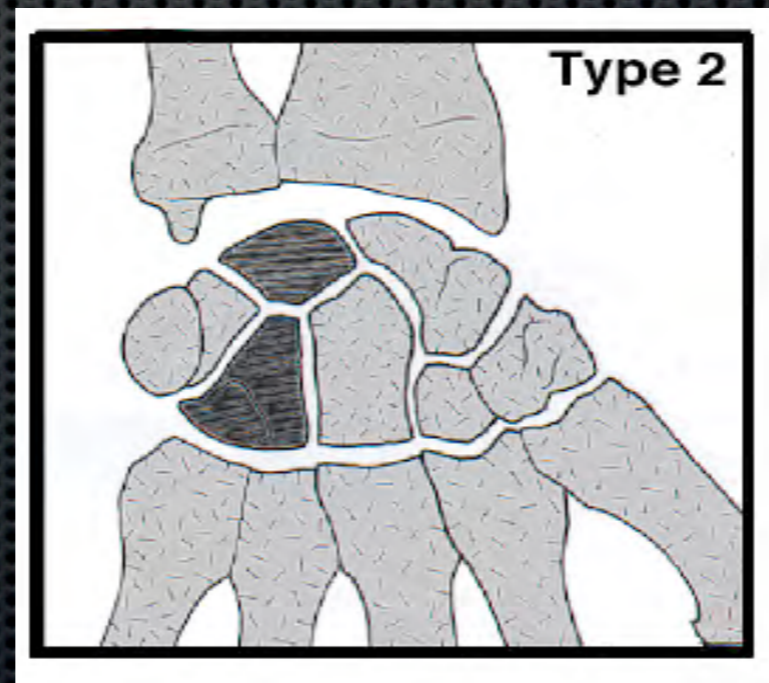
- ✦ Luno-triquetral (peu accessible)
- ✦ Scapholunaire: seule la portion proximale est avasculaire et peut être débridée
- ✦ 85-100% indolence dans séries anciennes

Lésions cartilagineuses

- ✦ Chondrite hamatum
- ✦ Arthrose stylo-scaphodienne
- ✦ Arthrose STT
- ✦ Arthrose TM

Chondrite hamatum

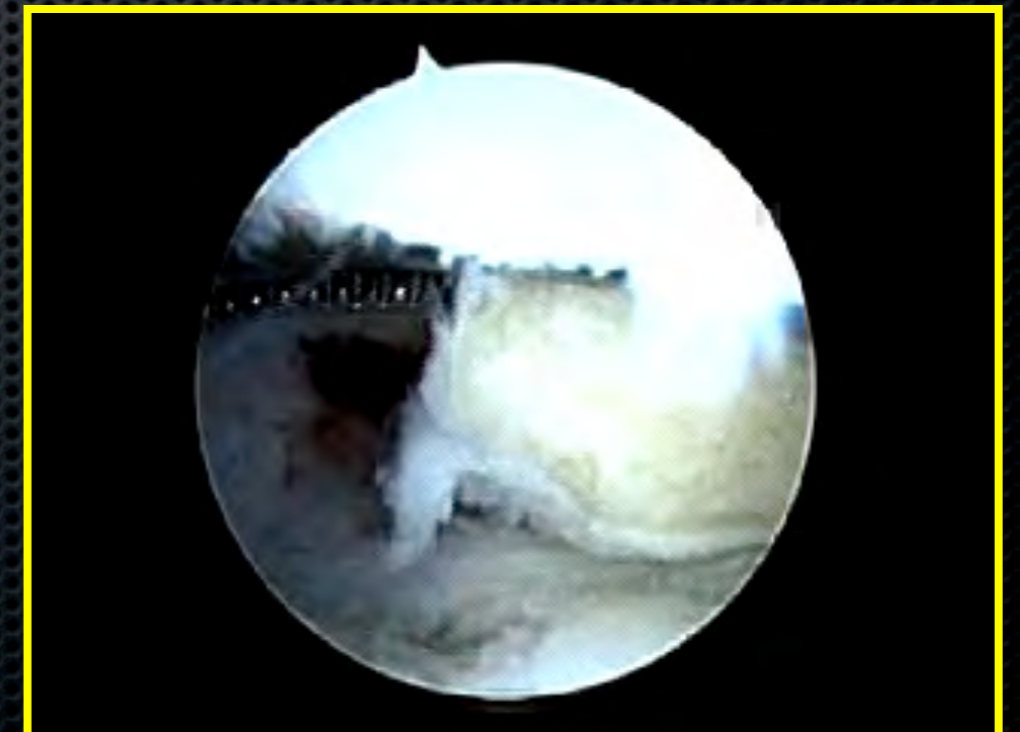
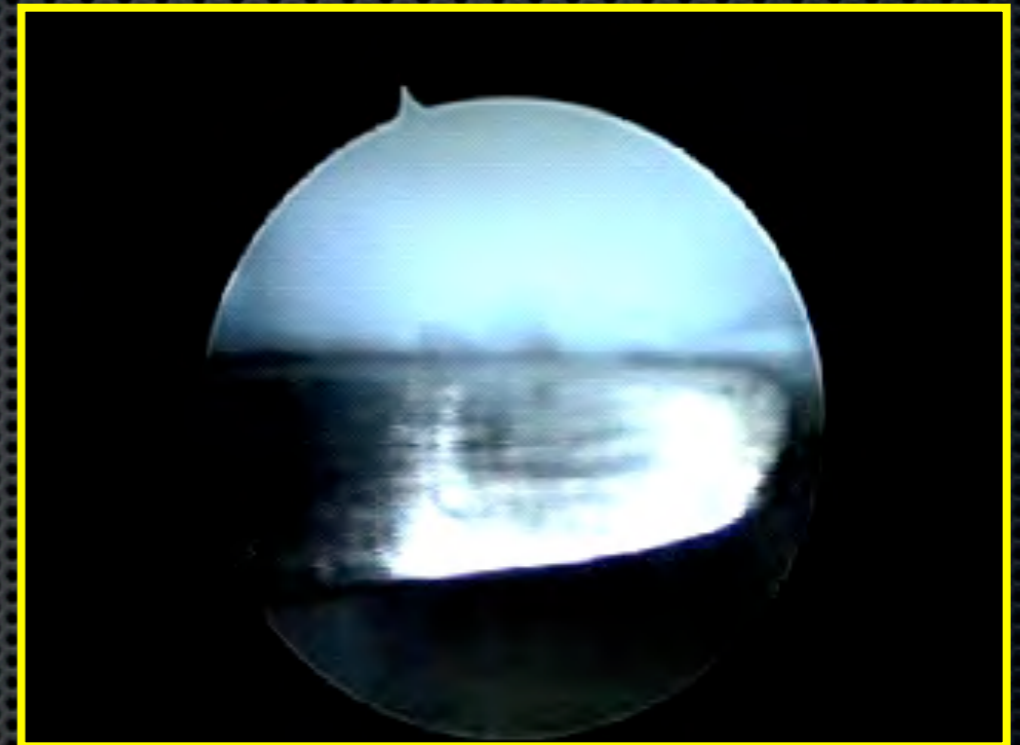
- Plus fréquente dans les lunatum de type 2
- Non visible à l'arthroscanner
- Douleurs ulnaires



Styloïdectomie



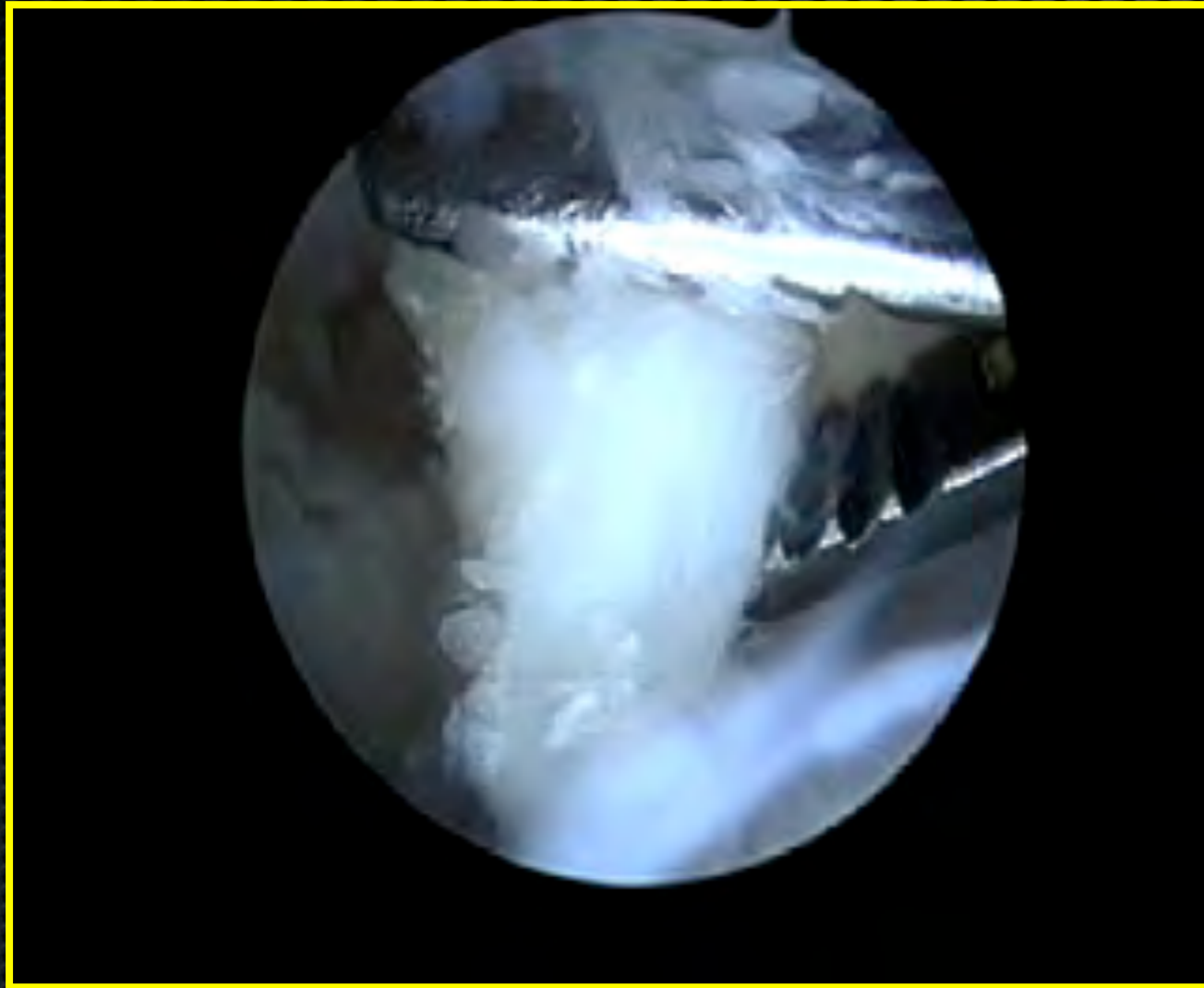
Ablation du fragment proximal d'une pseudarthrose du scaphoïde



Prothèse partielle associée



Résection fragments arthrosiques

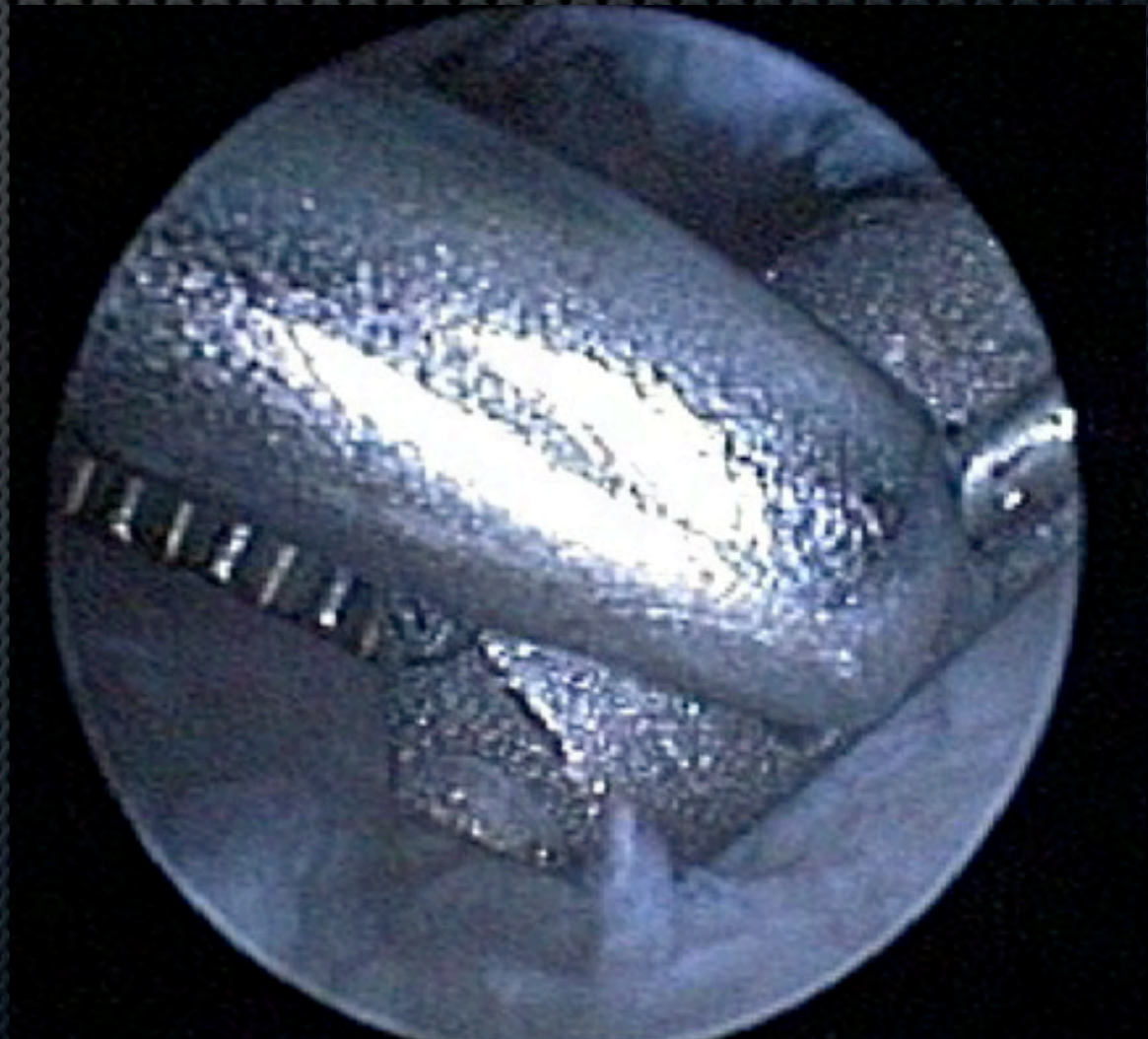


Arthrose

- ✦ STT : Résection pôle distal du scaphoïde
 - ✦ Difficultés: Etre régulier, le trapézoïde
- ✦ TM : (peu d'expérience)

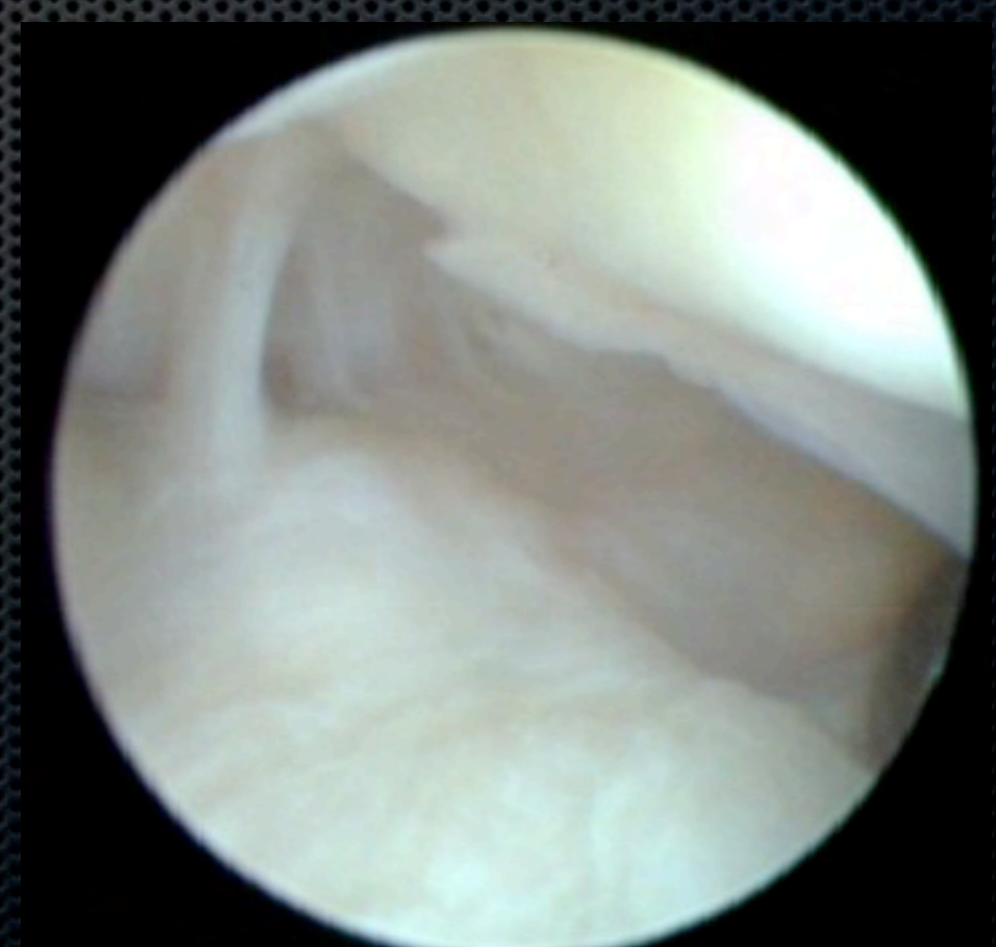
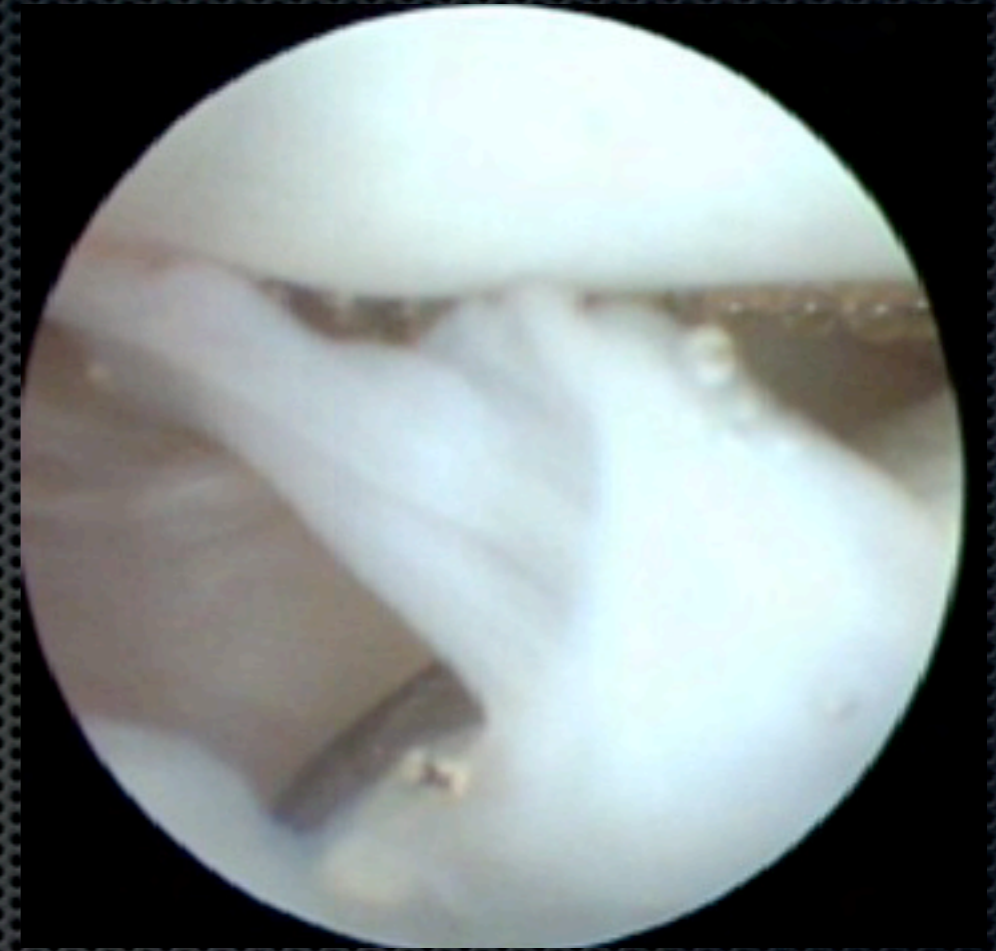


Divers



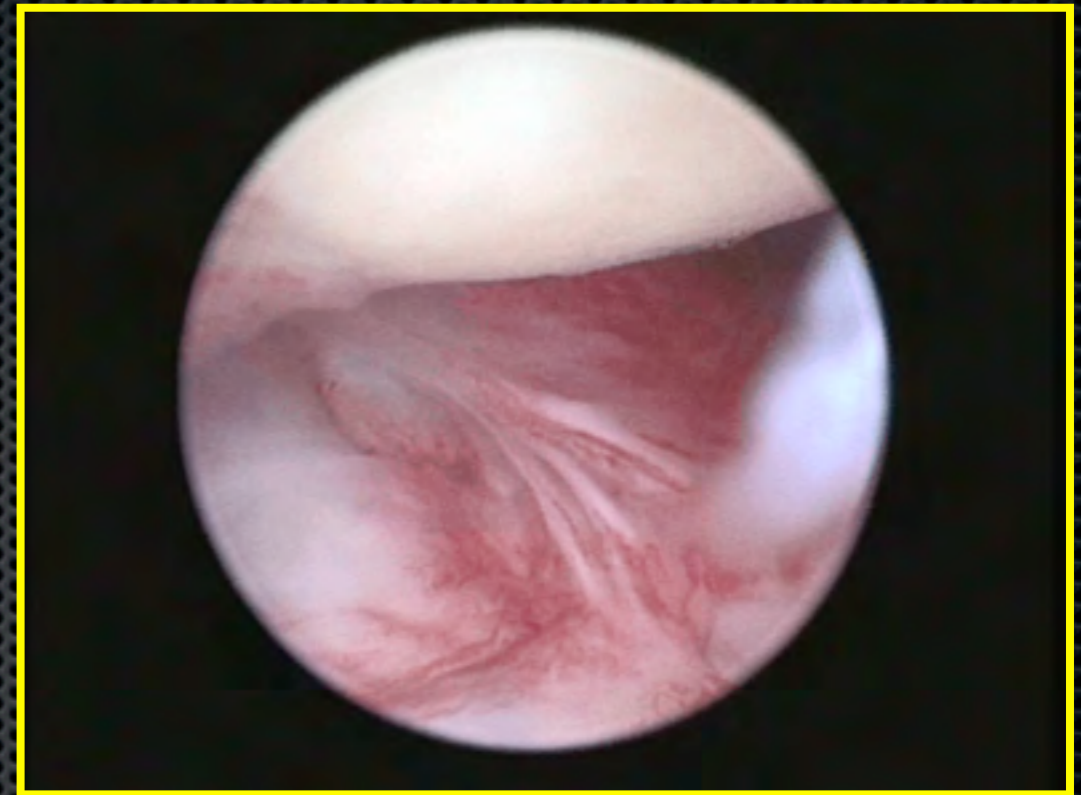
Divers

- ✦ Résection d'une cicatrice fibreuse post-fracture du radius



Synovectomie

- ✦ Dans la PR
- ✦ Isolée si atteinte intra-articulaire exclusive
- ✦ Associée à un geste tendineux à ciel ouvert (même temps ou 2 temps opératoire)



Arthrolyse

- Section capsulo-ligamentaire dans les raideurs post-traumatiques ou post-algodystrophie
- Geste difficile en arrière



Conclusion

- ✦ En dehors des lésions du TFCC dont les indications et les résultats sont “validés”
- ✦ Les autres indications sont possibles, probablement utiles mais on manque de séries cliniques pour apprécier leur place réelle et leurs résultats

Wrist ganglia: natural history, results of surgical and arthroscopic treatment

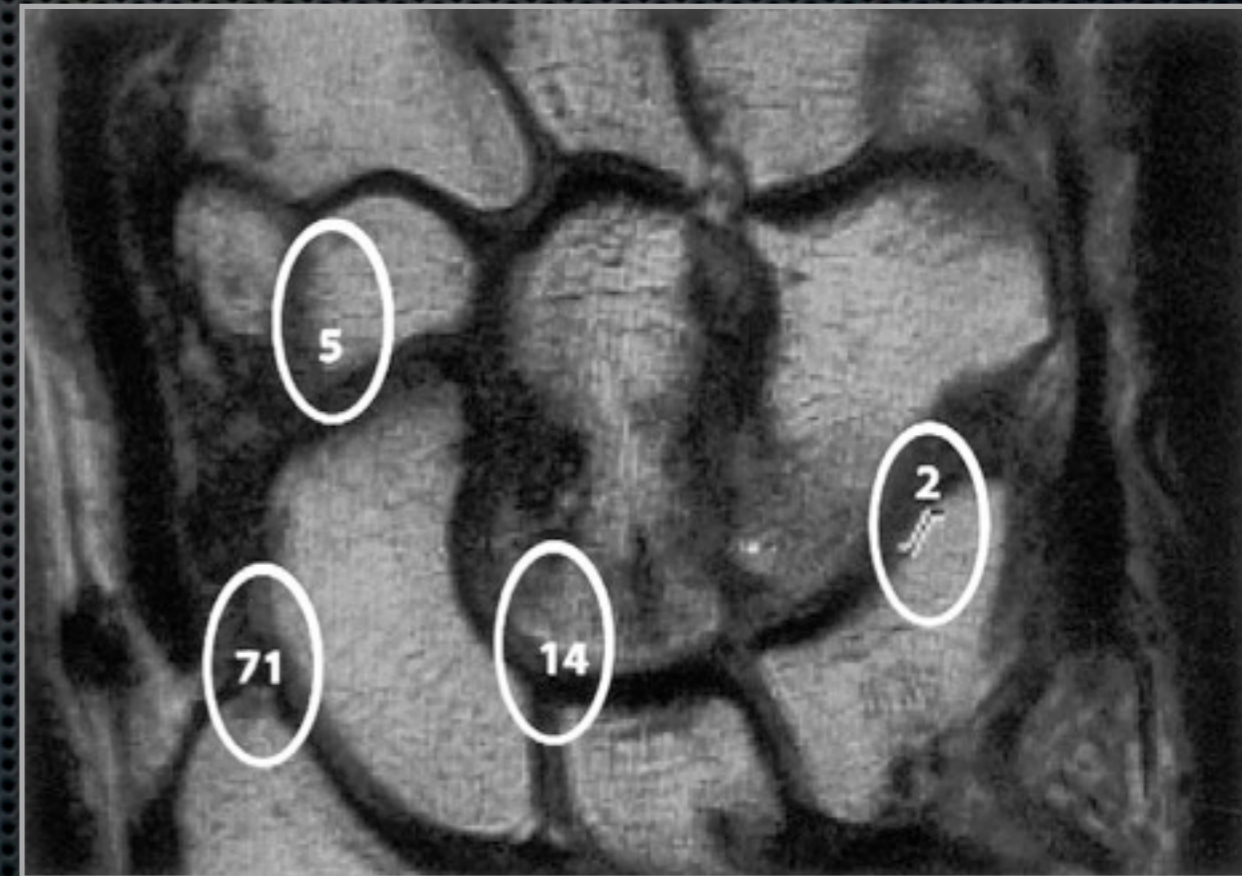


Christian Dumontier, MD, PhD

Institut de la Main & hôpital saint Antoine, Paris

Wrist ganglia: how frequent are they ?

- Lowden (JHS 2005): MRI study
 - 58% in females, 48% in males
 - 70% anterior, 14% dorsal
 - Variable localization



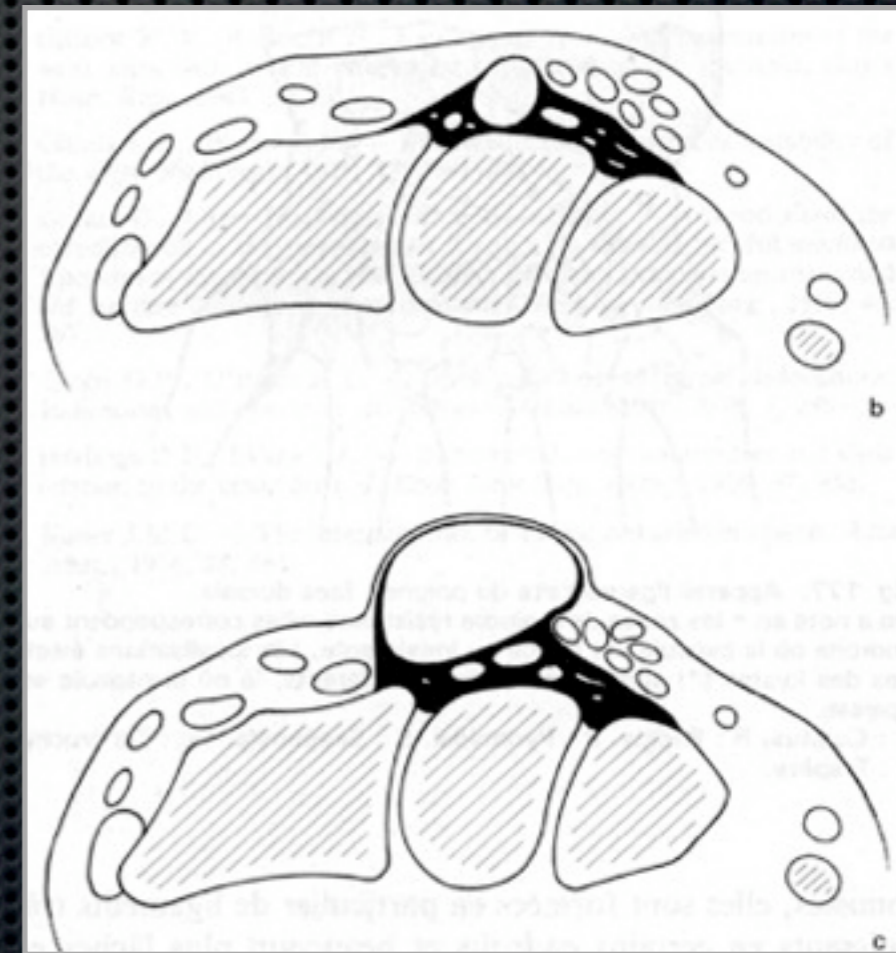
Wrist ganglia (clinical)

- Dorsal scapholunate : 2/3 of the ganglia
- Volar : 1/3
- Other localization: rarer (joint effusion)



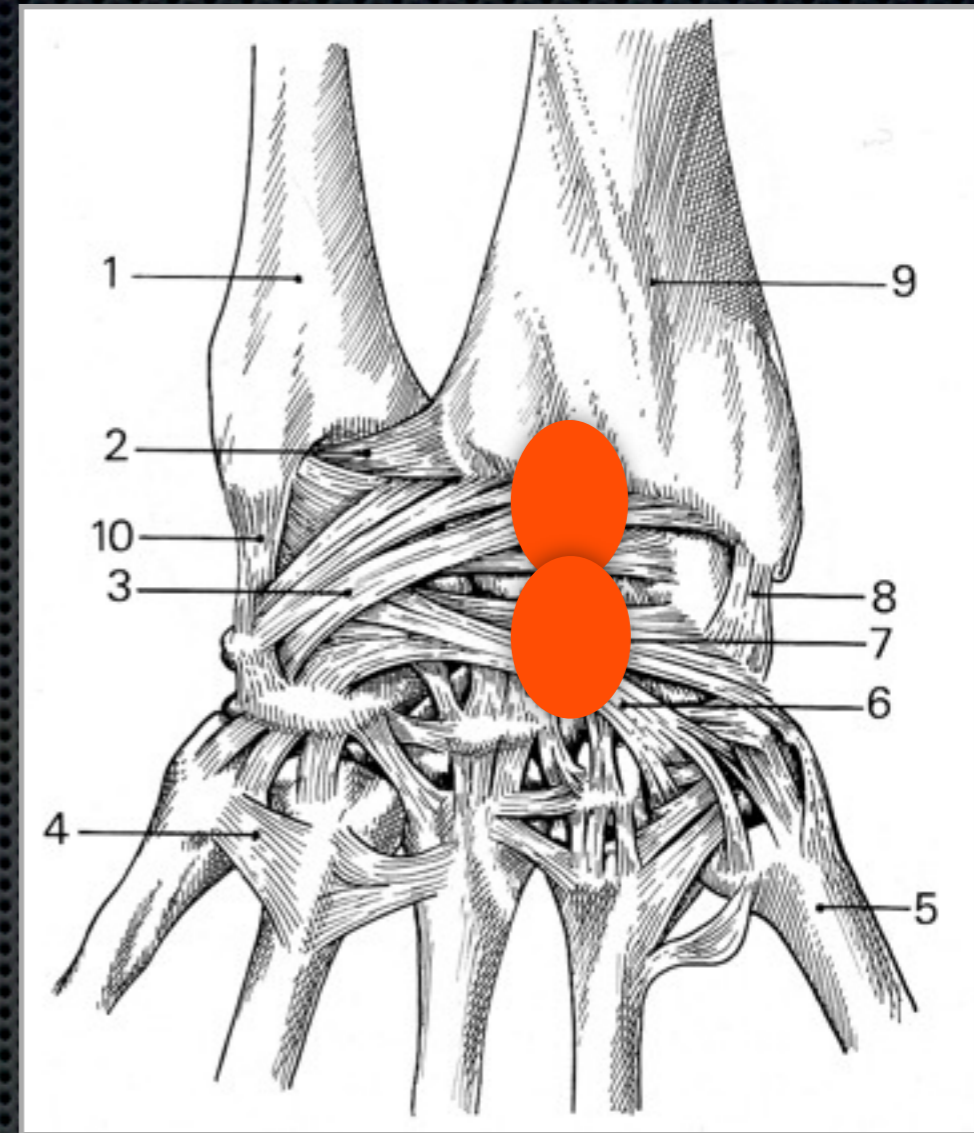
What is a dorsal wrist ganglion ?

- ✦ Mucoïd degeneration of the scapholunate ligament (Kuhlman 2003) due to differential tearing during wrist motion
 - ✦ More frequent in lax people (females)



Dorsal wrist ganglia

- Localization may vary according to the way the ganglion exits the wrist capsule and they look either radiocarpal or midcarpal



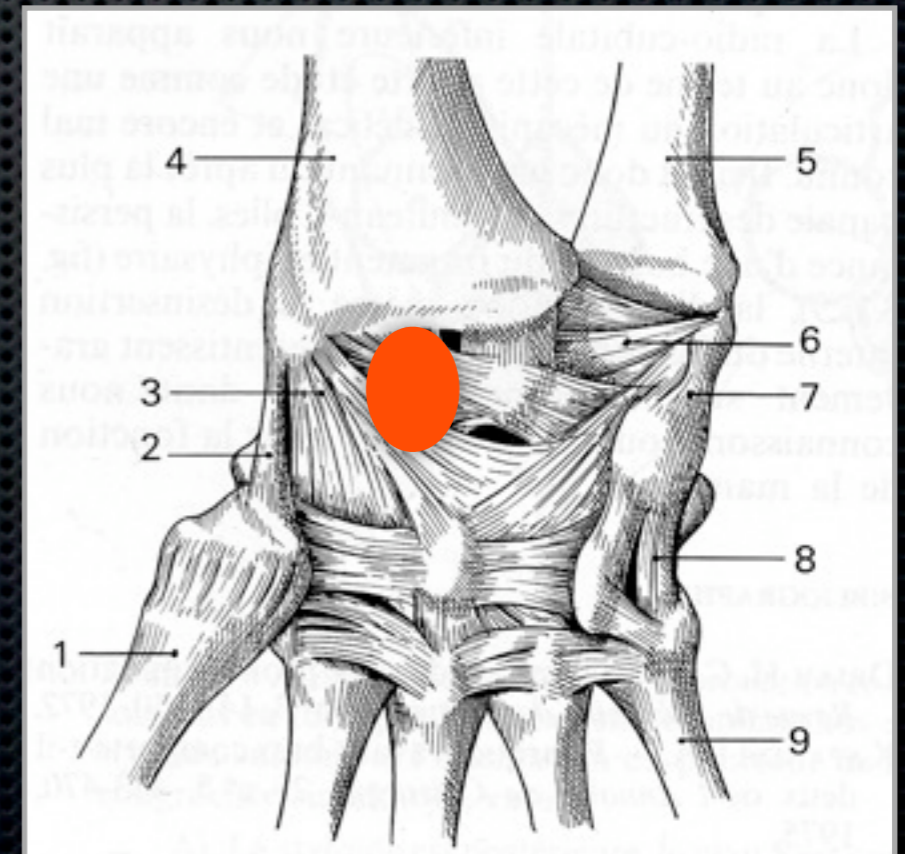
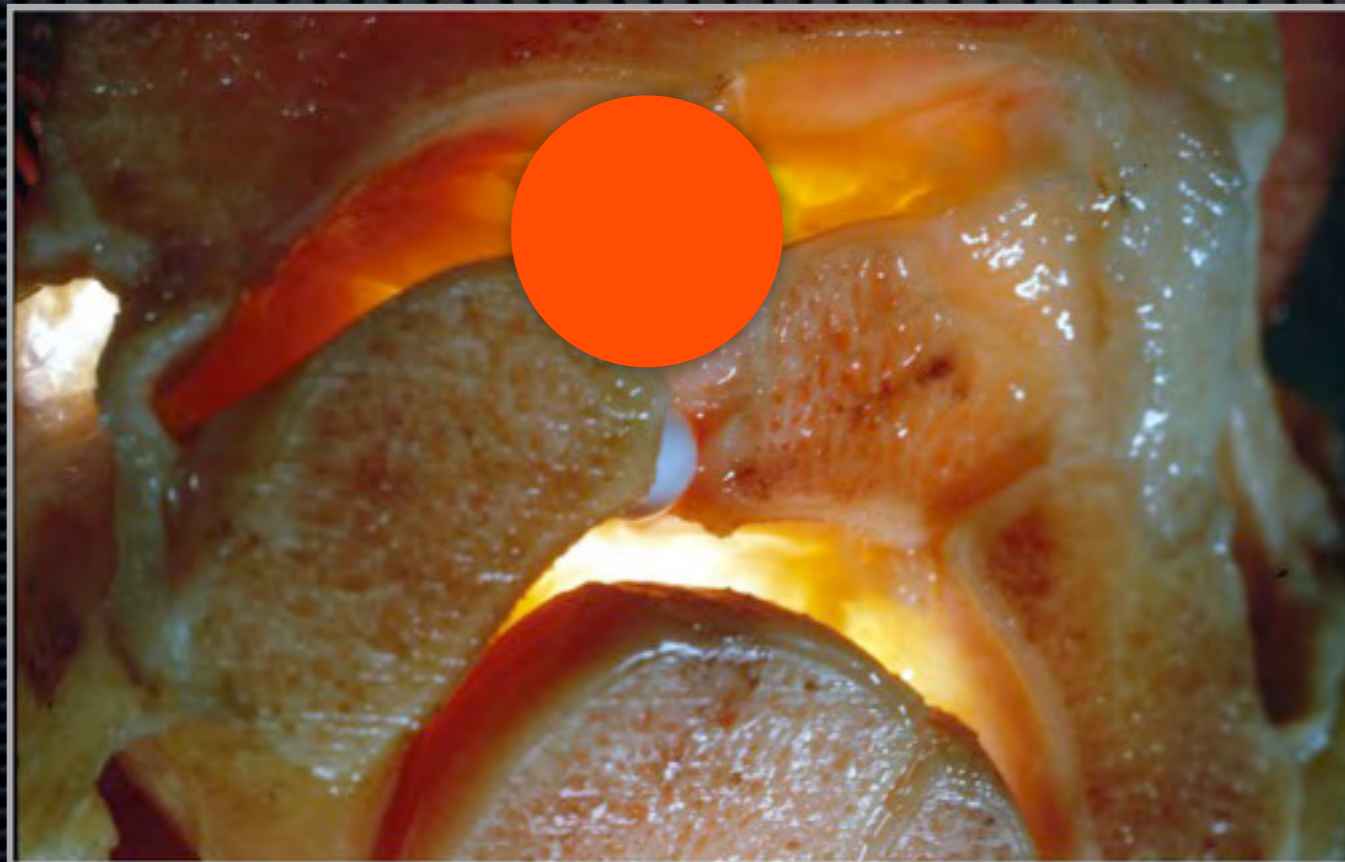
Methylen blue injection
of an ulnar-sided
ganglion



Volar wrist ganglia

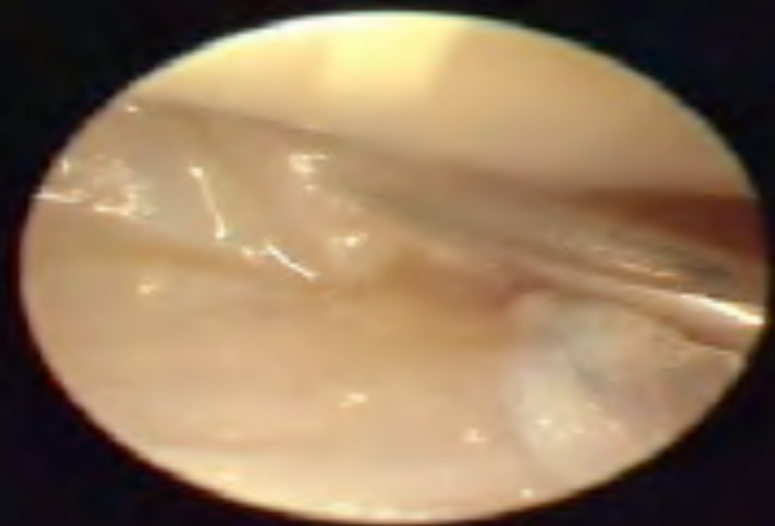
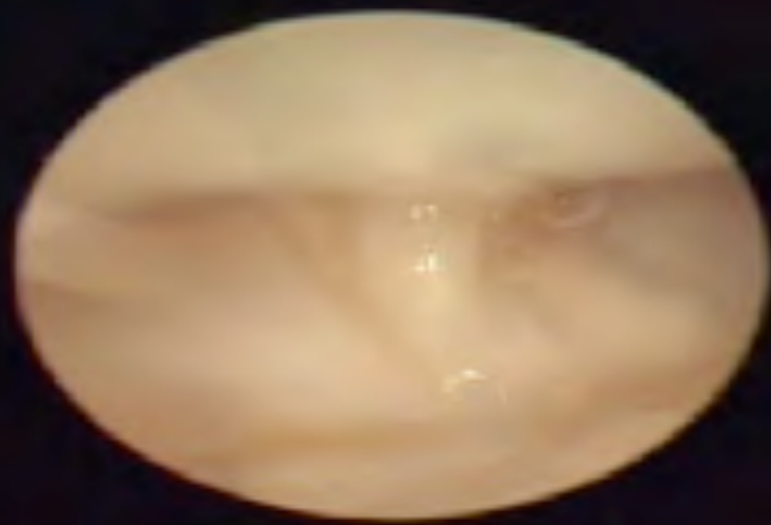


- Originate from the anterior part of the scapholunate ligament between radio-scapho-capitate and radiolunate ligaments



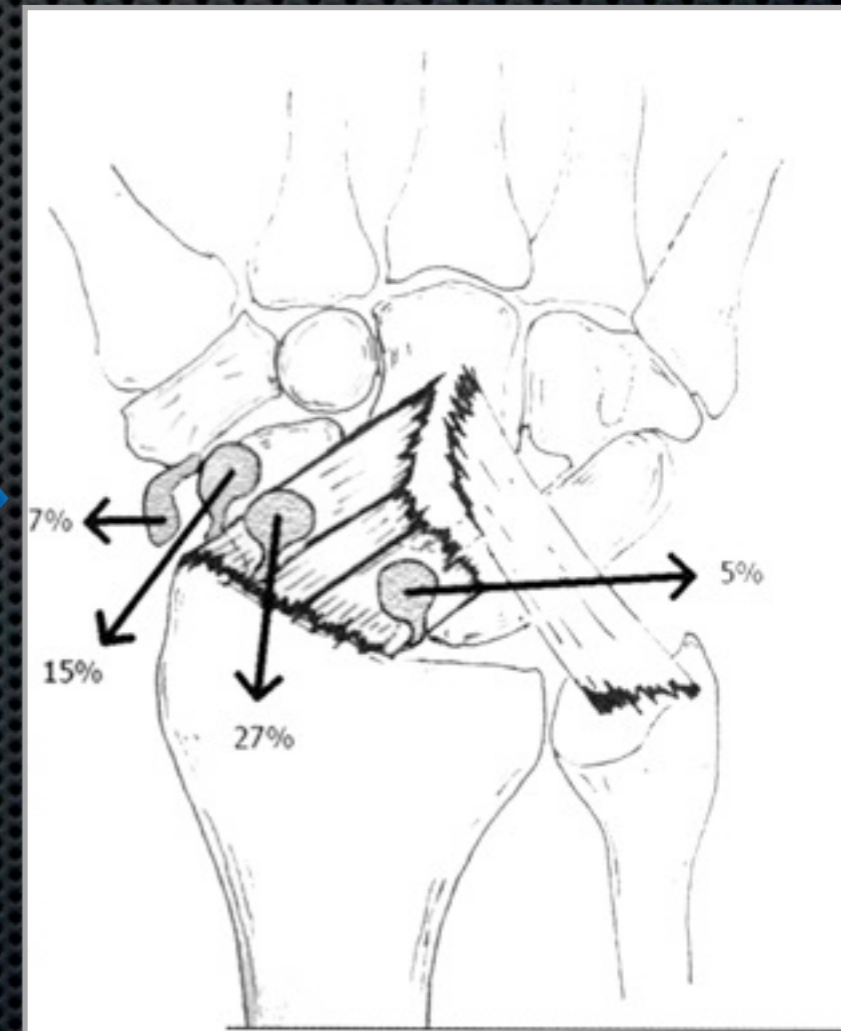
Example

- Volar ganglion arising between radiolunate and radioscapohocapitate ligament
- Needling (arthroscopy with air)



However !

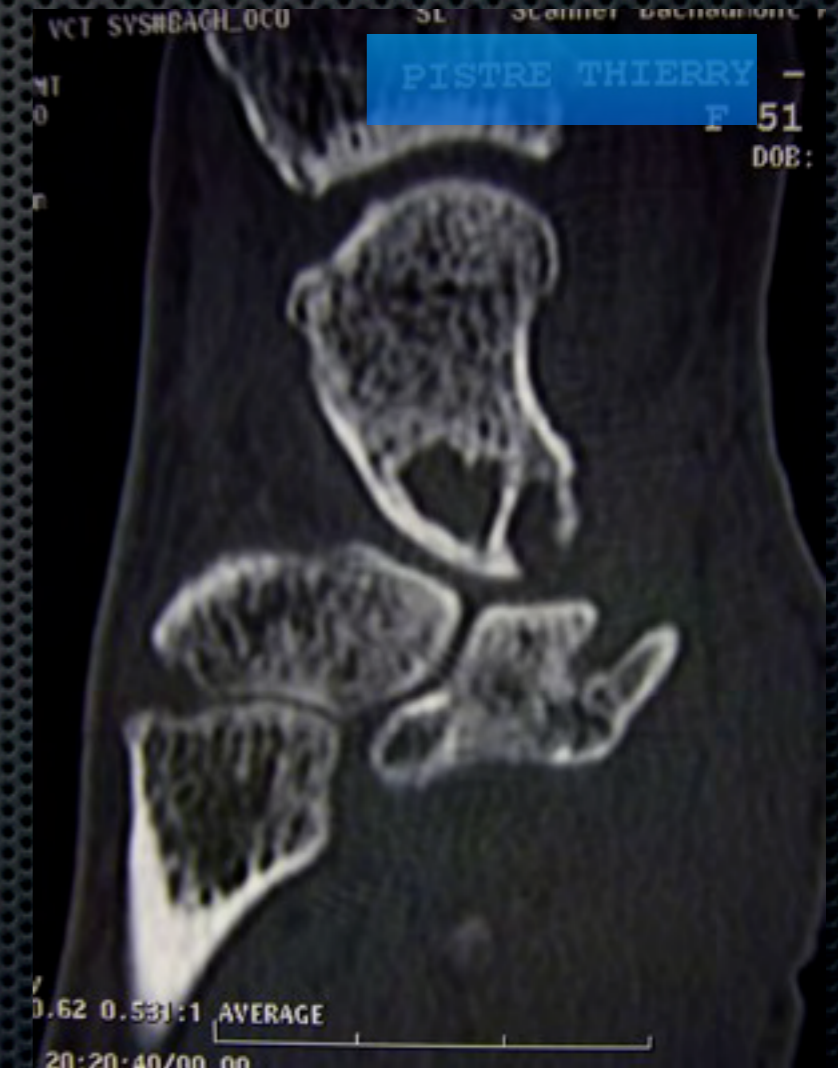
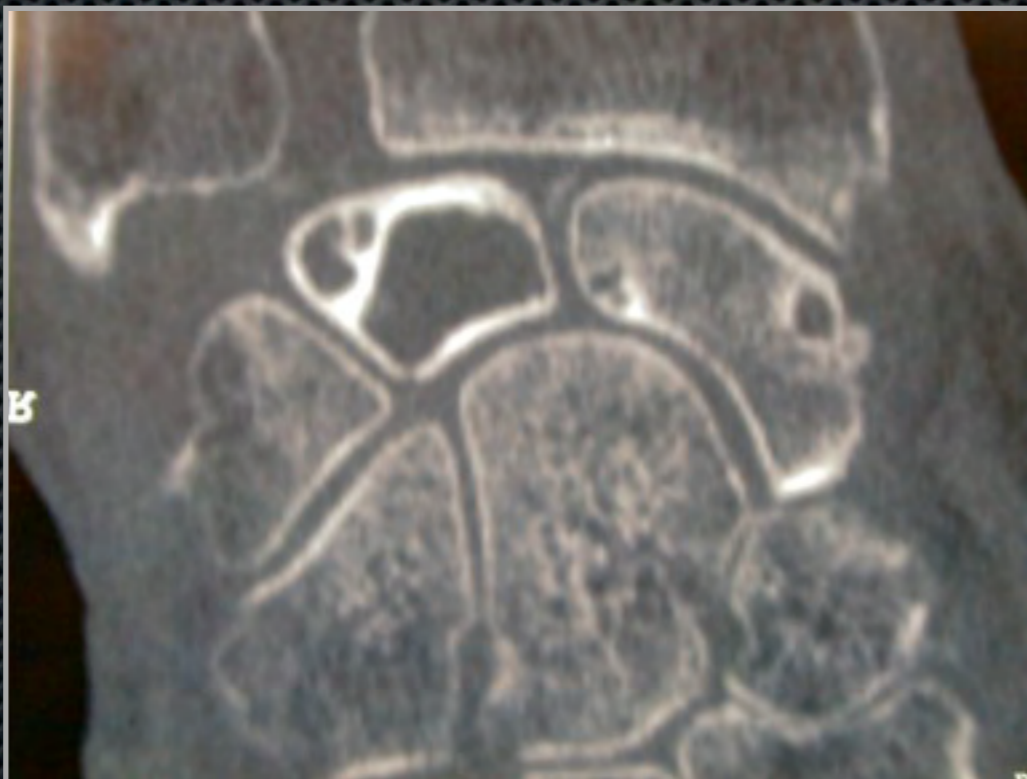
- According to Angelides, 50% of volar wrist ganglia originate from the STT
- Argentin authors reported variable radiocarpal origin
- 1/3 of volar ganglia did not originate from the radiocarpal joint (Rocchi)



A precise radiological examination is needed to know where does the ganglion originate

Imaging modalities

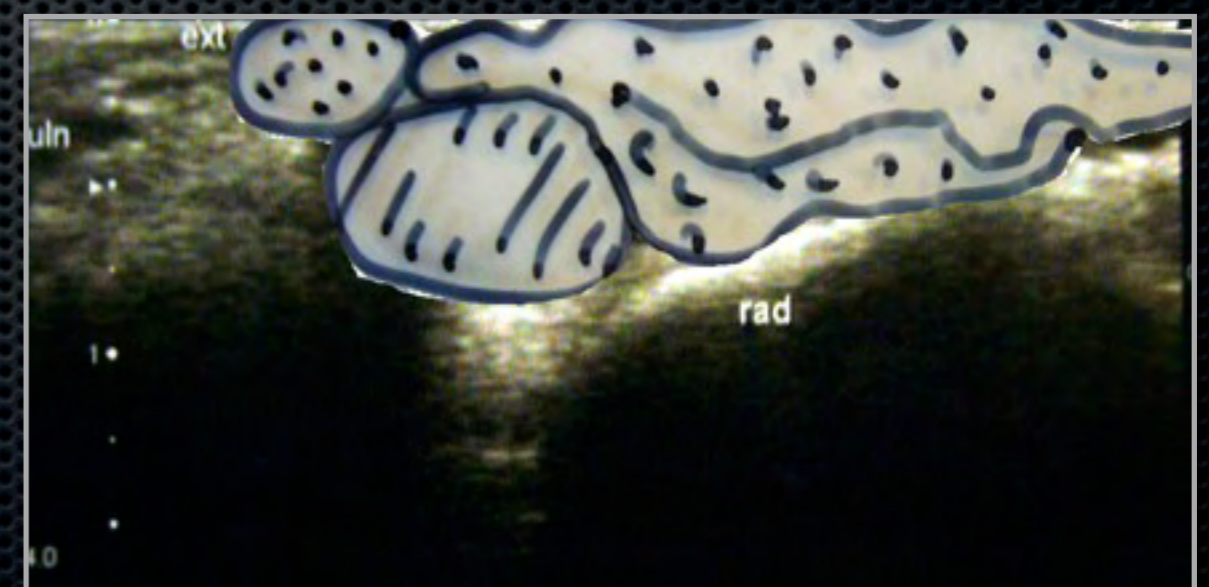
- Plain X-rays are needed to eliminate another pathology



Imaging modalities



- ✦ MRI or sonography may be useful to make the diagnosis in atypical localization
- ✦ I use sonography to know where does the ganglion come from



Natural History ?



- 40% of 101 ganglia disappeared by 6 years (Zachariae, 1973)
- 9/19 disappeared by 10 years (McEvedy, 1955)

Natural History ?

- 28/39 (72%) volar ganglia disappeared by 5 years (Dias 2003)
- 45% of volar ganglia will disappear within 6 years (Trent audit - Burke 2003)
- 63% of volar ganglia disappeared at 10 years (Derby audit - Burke 2003)
- 23/55 (42%) dorsal ganglia disappeared by 6 years (Dias 2007)
- 33% of dorsal ganglia will disappear within 6 years (Trent audit - Burke 2003)
- 51% of dorsal ganglia disappeared at 10 years (Derby audit - Burke 2003)

Volar

Dorsal

Non-surgical treatment ?

- ✦ No !
- ✦ Press the ganglion with the corner of a Holy book / a coin,..
- ✦ Fluid aspiration +/- steroid injections
- ✦ Place suture into the ganglion and leave it in place for 3 weeks
- ✦

Why can we treat a ganglion under arthroscopy ?

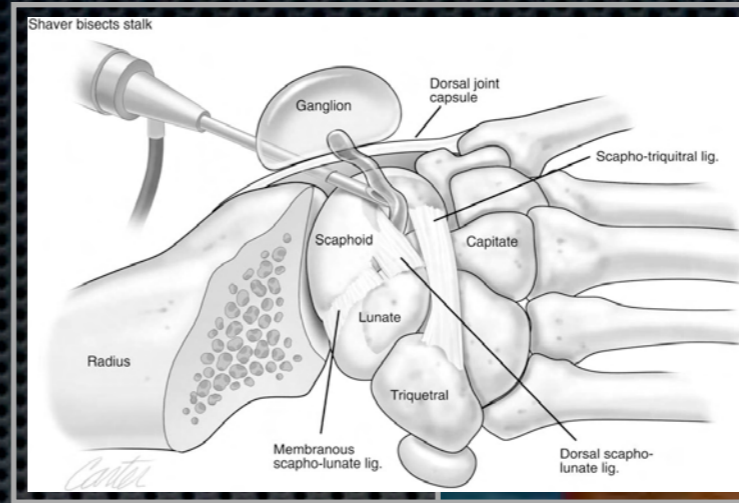
- ✦ Surgical treatment should debride the base, not remove the pocket
- ✦ 1971, Fowler:
 - ✦ Propose to only resect the capsule in dorsal ganglia.
- ✦ 1987, Osterman:
 - ✦ Cure incidently a patient of her dorsal wrist ganglion during a wrist arthroscopy
 - ✦ Starts a prospective study of 18 cases published in 1995

How do we do ?

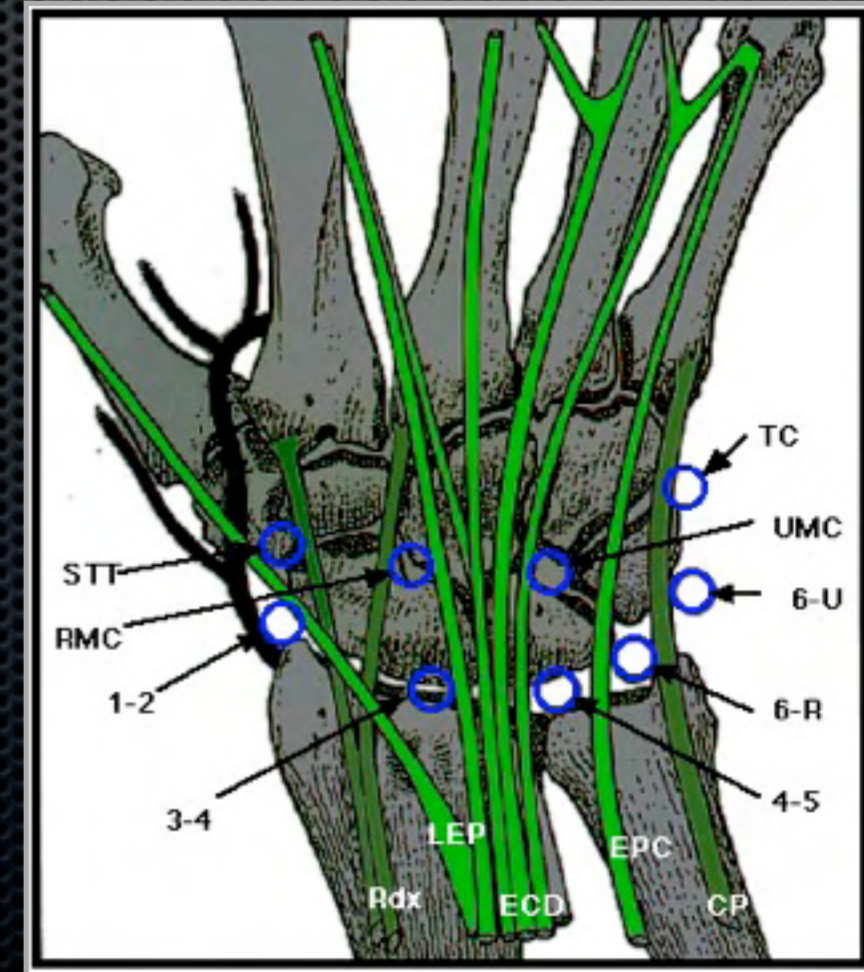
- ✦ Wrist arthroscopy
 - ✦ Scope 2,7 mm / Shaver +/- RF probe
 - ✦ Arthroscopic approaches
- ✦ Débridement of the pathological capsule
 - ✦ Where is it ?
 - ✦ Enough, not too much resection !



Dorsal ganglia



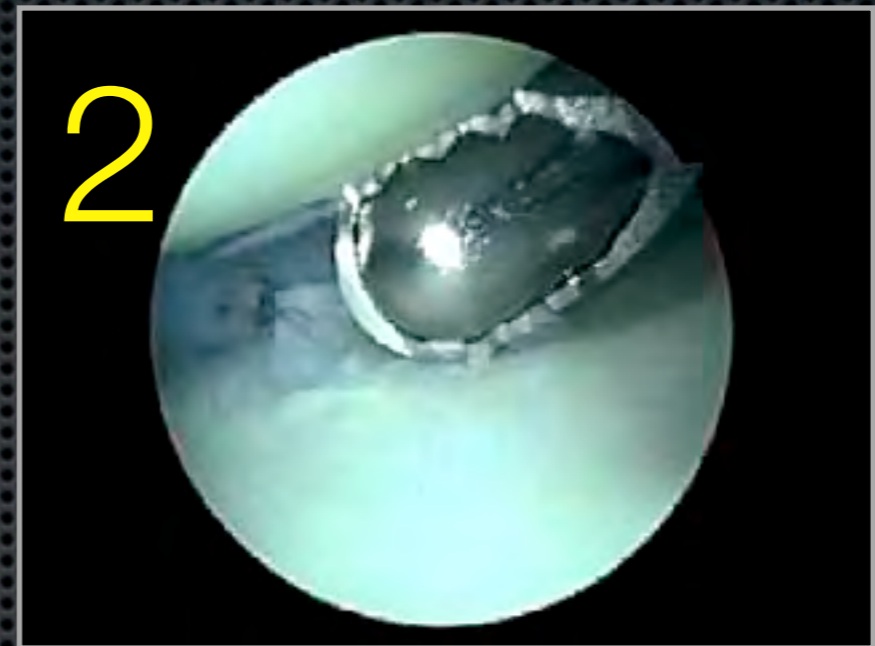
- ✦ As the ganglion is dorsal, like the portals
- ✦ Very tangential, work “a retro”
- ✦ Scope 6R portal
- ✦ Shaver in the 3/4 (1/2) portal
- ✦ Start arthroscopy with air to find its base of implantation



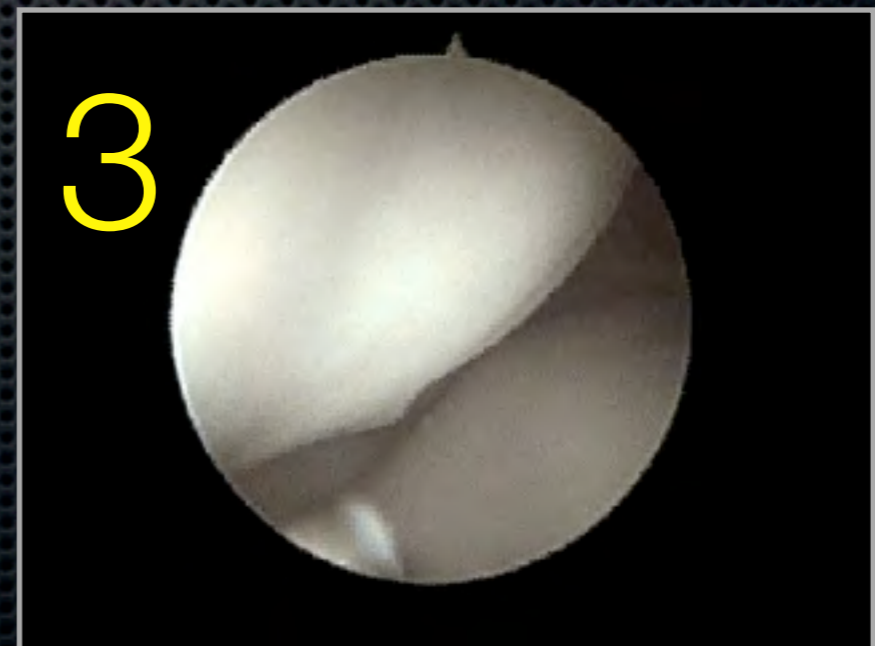
Find the
scapholunate
space



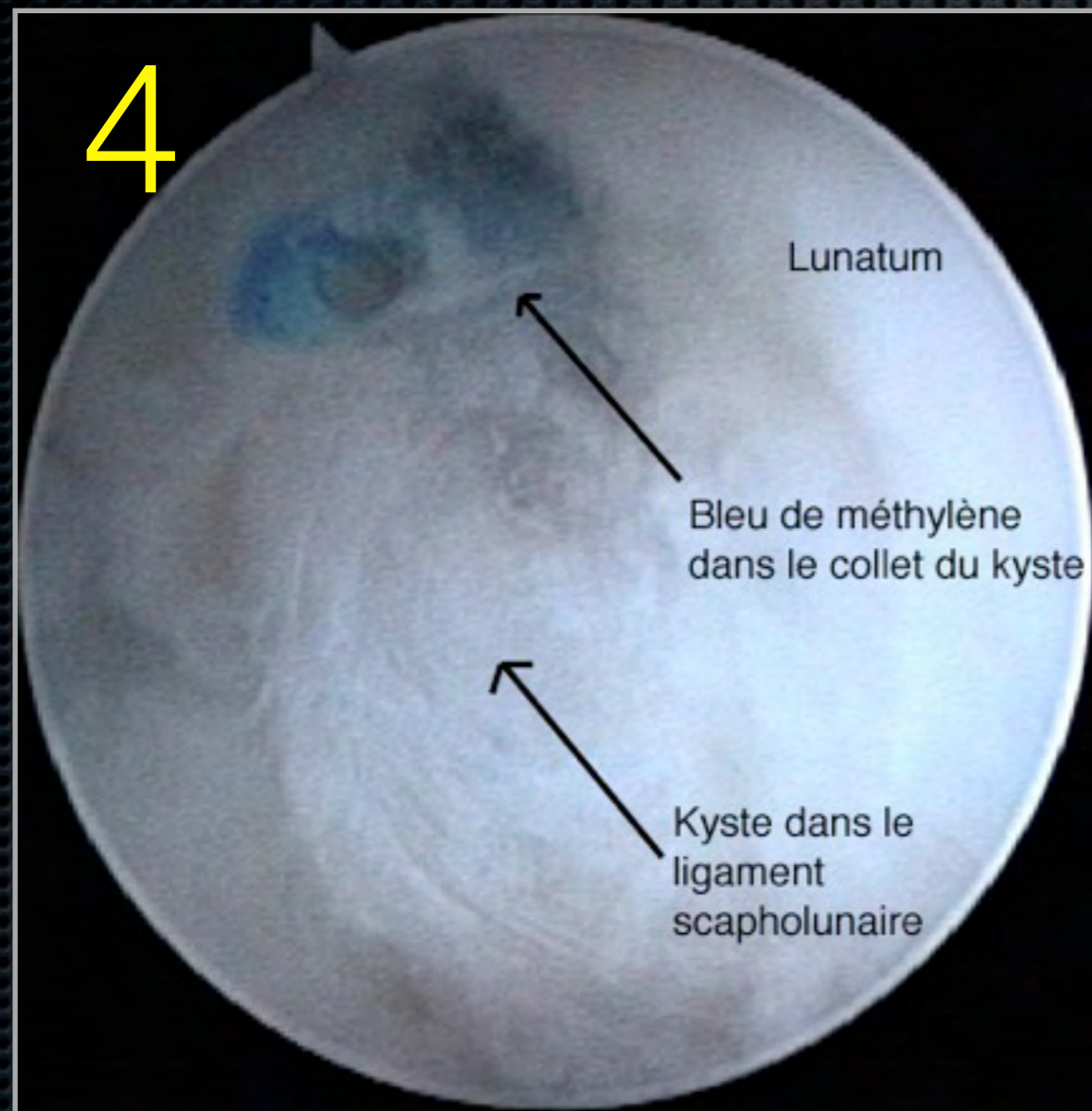
Remove synovial
fringes



Follow the SL ligament
down to the capsule



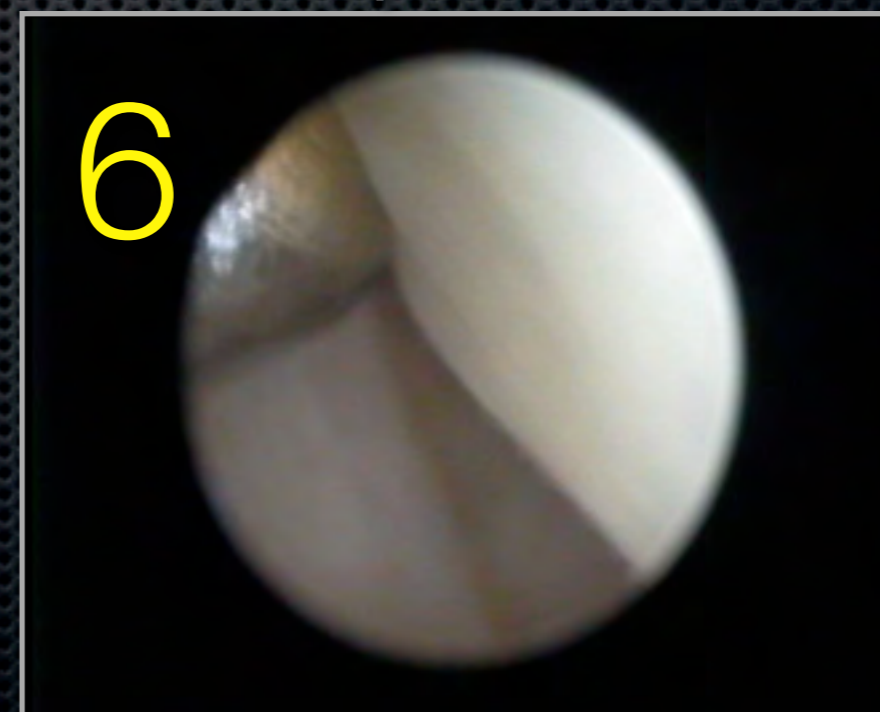
Look for a ganglion in the
SL ligament
(visible in 30-60% of
cases)



Excise it
(with moderation)



Then resect the
capsule



A trick

6bis



- I use methylene blue (few droplets) injected in the ganglion before starting to better find its implantation base



Excise the capsule to empty the ganglia

7

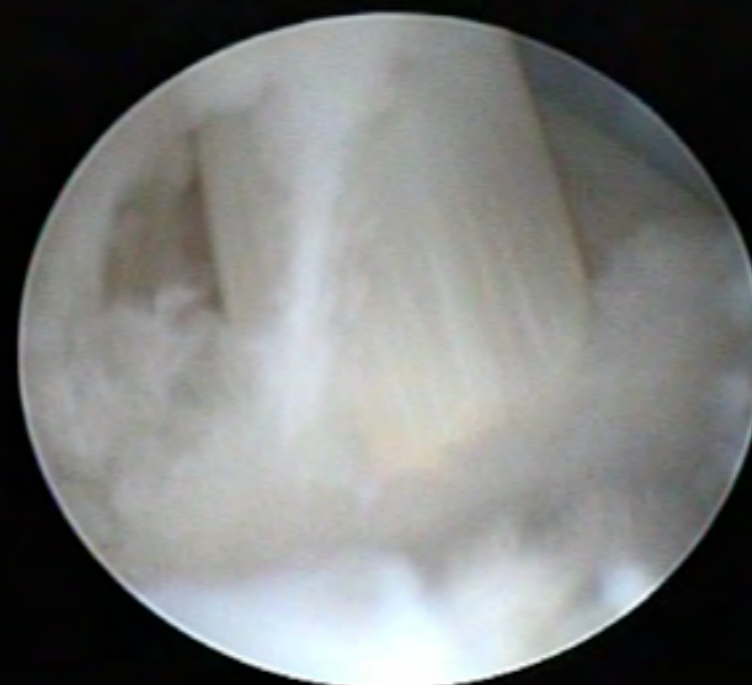


8



Up to the tendons

8



Difficulties

- ✦ During capsular excision, fluid flows in the subcutaneous tissues
 - ✦ Loss of pressure = loss of visibility
- ✦ Sometimes difficult to differentiate between the capsule and the tendons ! Beware

Associated lesions ?

- Not in my experience
- 50% in Osterman's series
- 100% in Polvsen's series

No patient had an associated surgery,
none had instability

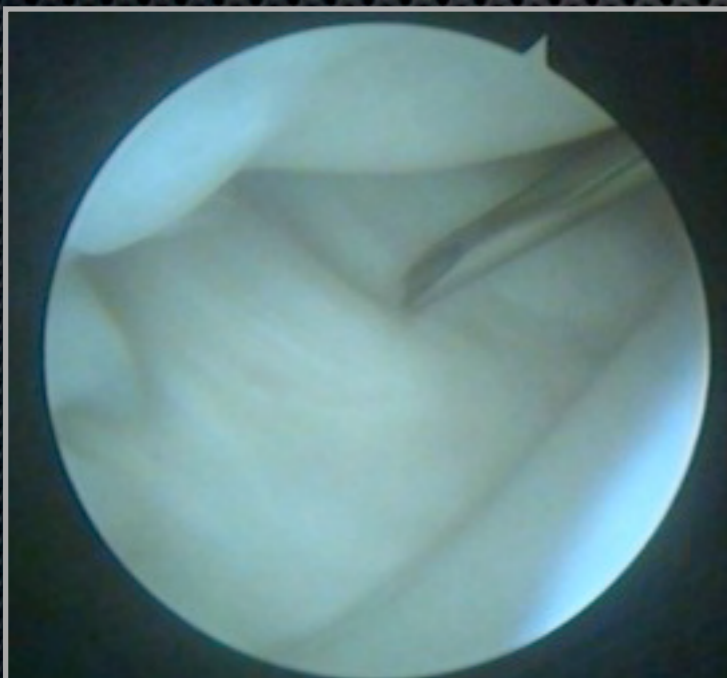
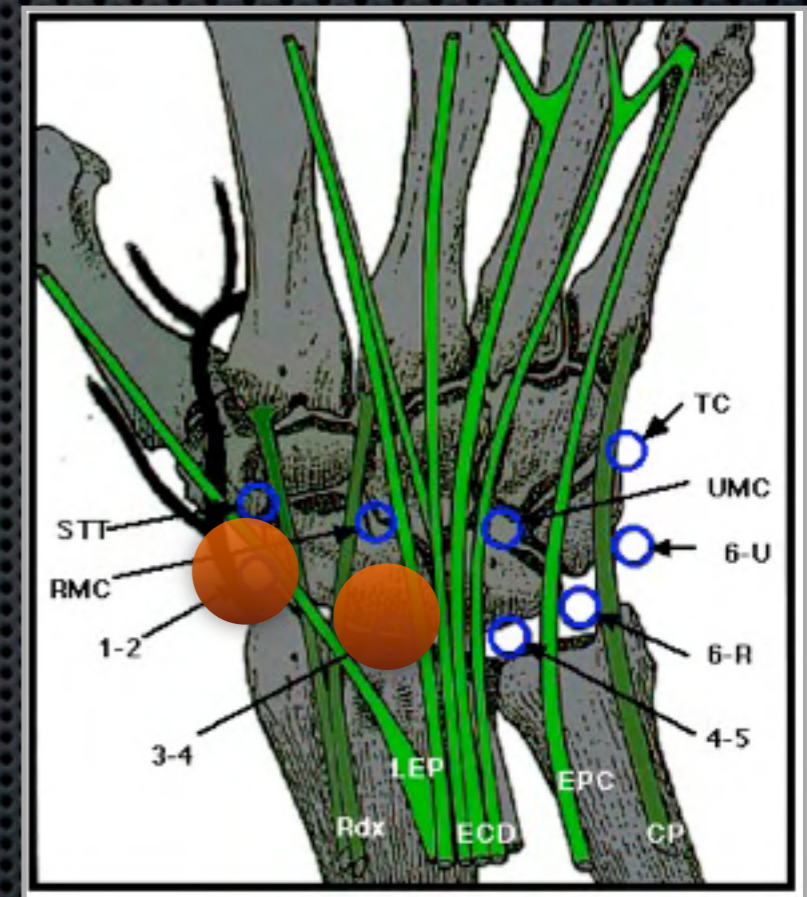
No relation ganglion and instability



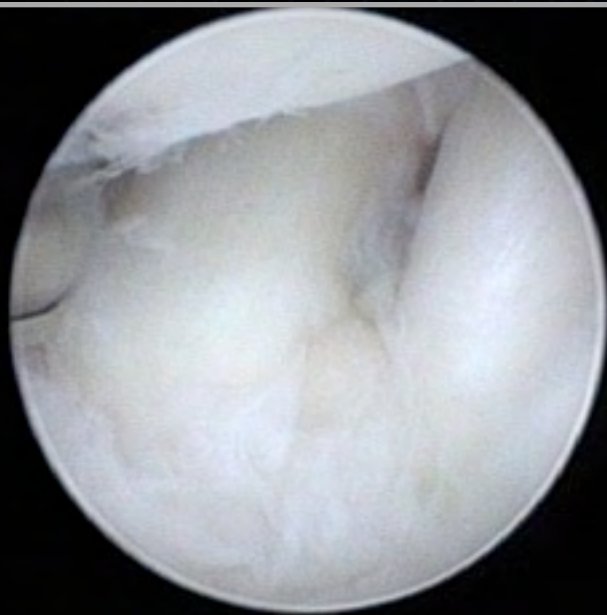


Volar ganglia

- ✦ Arthroscopic treatment is much more easier
- ✦ Scope in 3/4 portal
- ✦ Shaver in 1/2 portal
- ✦ Find its origin with air



1



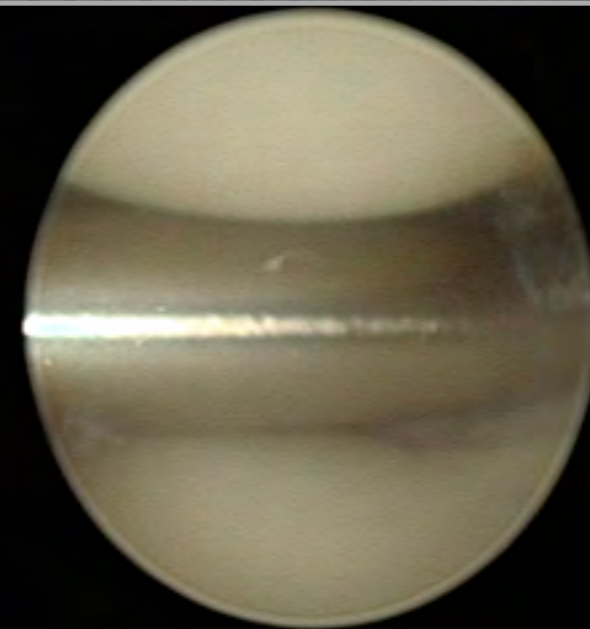
See the space
between
ligaments



2

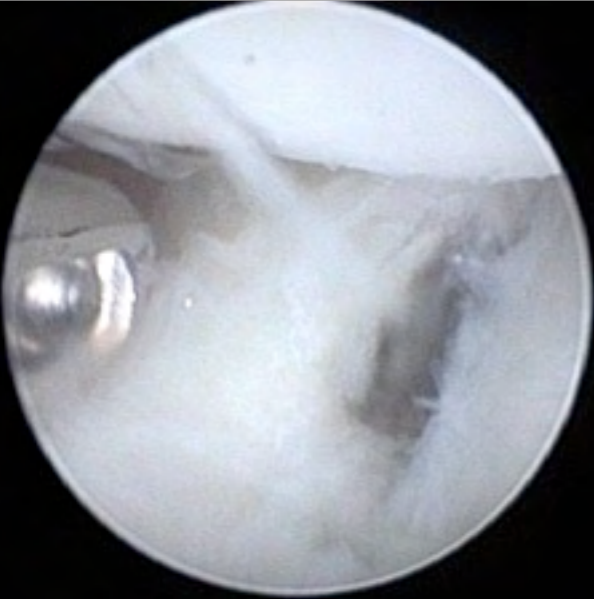


Excise, with the
shaver up, the
capsular
insertion on the
SL ligament





3



Size of needed excision
is unknown



What are the results ?

- No scar surgery



Results: wrist mobility

- ✦ No stiffness
 - ✦ 1% to 25% of patients had some stiffness after open surgery
- ✦ Mobility: 96% of controlateral side after A°



Results: grip strength

- ✦ No loss of strength
 - ✦ 2% - 45% of pts lost 10-20% of their grip strength after open treatment
 - ✦ Symmetrical grip strength in 96% of endoscopically treated patients

Results: return to work

- Earlier return to work
- 15 - 42 D after surgical treatment
- 8 - 21 D after endoscopic treatment

Results: pain relief

- ✦ Most patients experienced some persisting pain for 2-3 months after endoscopic treatment. 85% were painfree at follow-up (11% in Osterman's series)
- ✦ After open treatment
 - ✦ 15% scar tenderness or sensitivity (Dias)
 - ✦ 28% pain, dysesthesiae (Jacobs)

Recurrence rate ?

- ✦ 0% Guiboux
- ✦ 0% Shih (32 cases, 26 months FU)
- ✦ 1/150 (Osterman), 1/14 (Pederzini, 1995), 1/21 (Viegas, 2003), 1/32 (Fontes, 1997), Nishikawa, 2001
- ✦ 2/34 (Luchetti, 2000);

Recurrence rate ?

- 10,7 % at 1 year (Kang, 2004)
- 25% (Ho, 2001)
- 30% (personal series), 50% occurring after 2 years of FU



Results of surgical treatment ?

- 1% recurrence rate (Angelides, 1976)
- 3% (Clay, 1988) - 4% Barnes (1964)
- 14% (Faithful, 2000)
- 15% Le Viet (1991), Amadio (1993)
- 27% (out of 370 dorsal ganglia) and 40% (out of 230 volar ganglia) - Dias 2003, 2007
- 28% (262 dorsal); 25% (166 volar) - Derby audit
- 28% volar (Jacobs)

Prospective study ?

- ✦ 1 year follow-up, prospective randomized study (Kang 2004) on dorsal wrist ganglia
 - ✦ No difference between groups
 - ✦ 10-15% still complain of symptoms
 - ✦ 10,7% recurrence (A°) vs 8,7% (open)

Prospective study ?

- ✦ Rocchi (2008): compared 30 open vs 30 A° volar ganglia
 - ✦ Recovery (15 days vs 6), RTW (23 days vs 10)
 - ✦ 2/3 excellent results in both groups
 - ✦ More complications in the open group

Does arthroscopic treatment improve the results ?



	Open	Arthroscopic
Pain	=	=
Scar	-	+
Mobility	-	+
Strength	-	+
Return to W	-	+

Remember



- ✦ A benign lesion whose natural history is to disappear in about 40% of cases
- ✦ Surgical treatment carries a (low) risk of complications while arthroscopic treatment had little complications
- ✦ Patients are more satisfied after surgical removal of their ganglion even if they had recurrence

Temporary conclusion

- ✦ Natural history is still poorly known
- ✦ Functionally disabling ganglia should be surgically treated
- ✦ Patients treated arthroscopically and whom ganglion had not reccured are very satisfied !
- ✦ Those whose their ganglion had reccured still have some persisting symptoms
- ✦ Complications of arthroscopic treatment are very rare