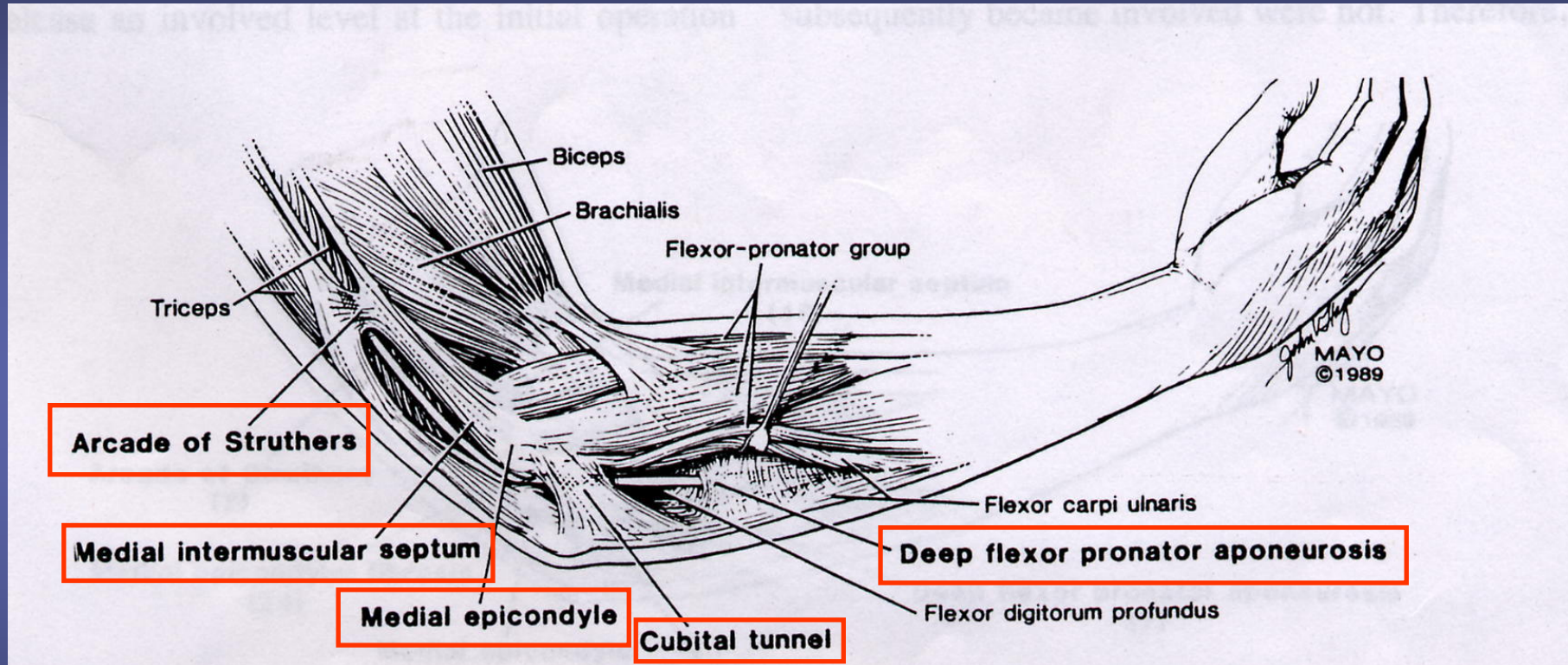


COMPRESSIONE NERVO ULNARE AL GOMITO



www.fisiokinesiterapia.biz

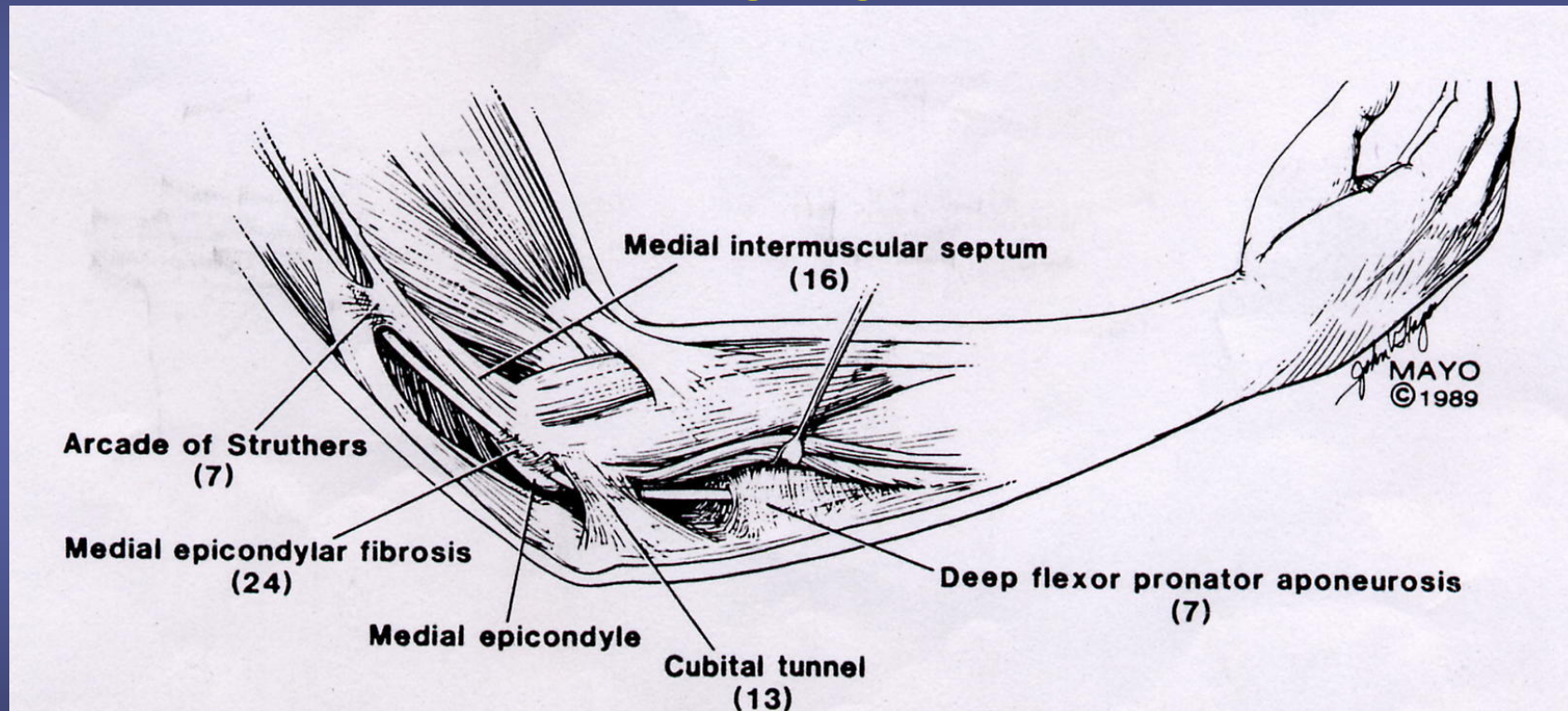
SEDI DI COMPRESSIONE



**Più frequenti le sedi 3 e 4, nuova scoperta la 5*,
più rare 1 e 2**

*** Amadio PC Beckenbaugh RD J Hand Surg 11A, 83-87,
1986**

Occorre conoscerle tutte altrimenti è
possibile un incompleto release del
nervo



**Sedi di reintervento per mancato release del nervo c/o Mayo
Clinic Gabel GT, Amadio PC J Bone Joint Surg
72A, 213-219, 1990**

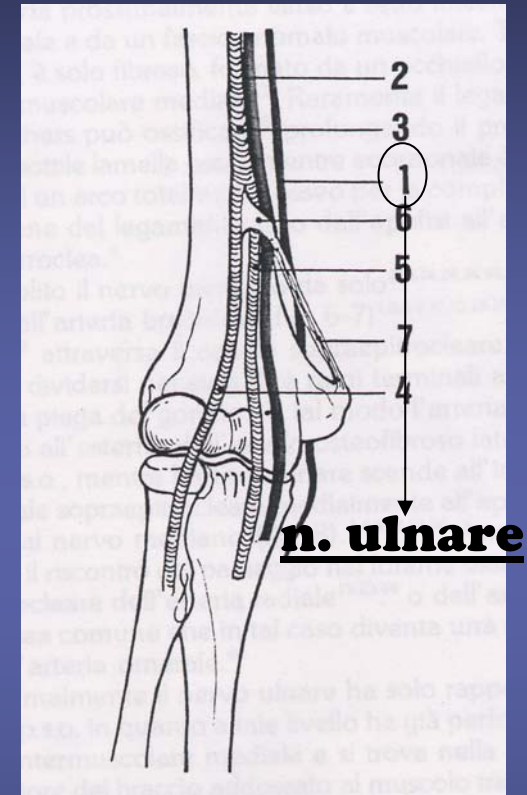
Compressione all'arcata di Struthers

Acta orthop. scand. 48, 391-393, 1977

PROCESSUS SUPRACONDYLOIDEA HUMERI WITH CONCOMITANT COMPRESSION OF THE MEDIAN NERVE AND THE ULNAR NERVE

PER B. THOMSEN

Department of Orthopaedic Surgery, Hjørring Hospital, Hjørring, Denmark.



**Si tratta comunque di casi molto rari, sporadicamente
segnalati in letteratura**

Compressione al canale cubitale

> fqz

Riduzione volume tunnel

Artrosi con calcificazioni

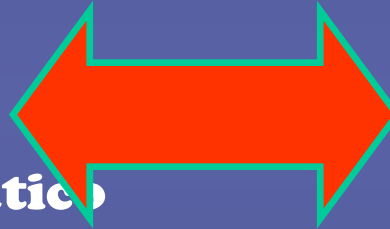
Sclerosi arcata fibrosa

Esiti fratt-luss. Gomito

Cubito valgo post-traumatico

Cubito valgo congenito

IDIOPATICO (?) NB Il più frequente



Aumento del contenuto

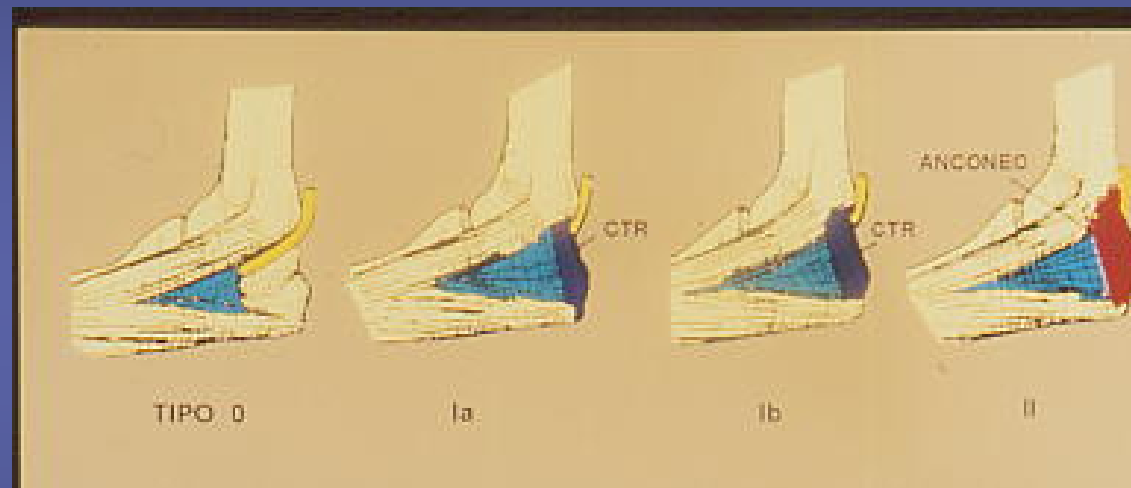
Cisti artrogene

Neoplasie

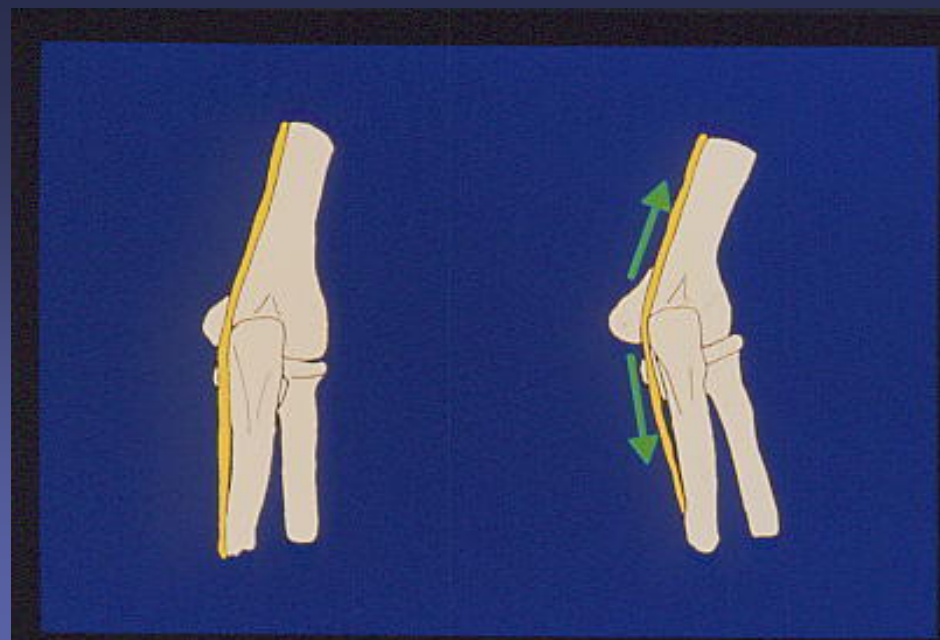


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Sclerosi del Legamento Arcuato e sue varianti anatomiche

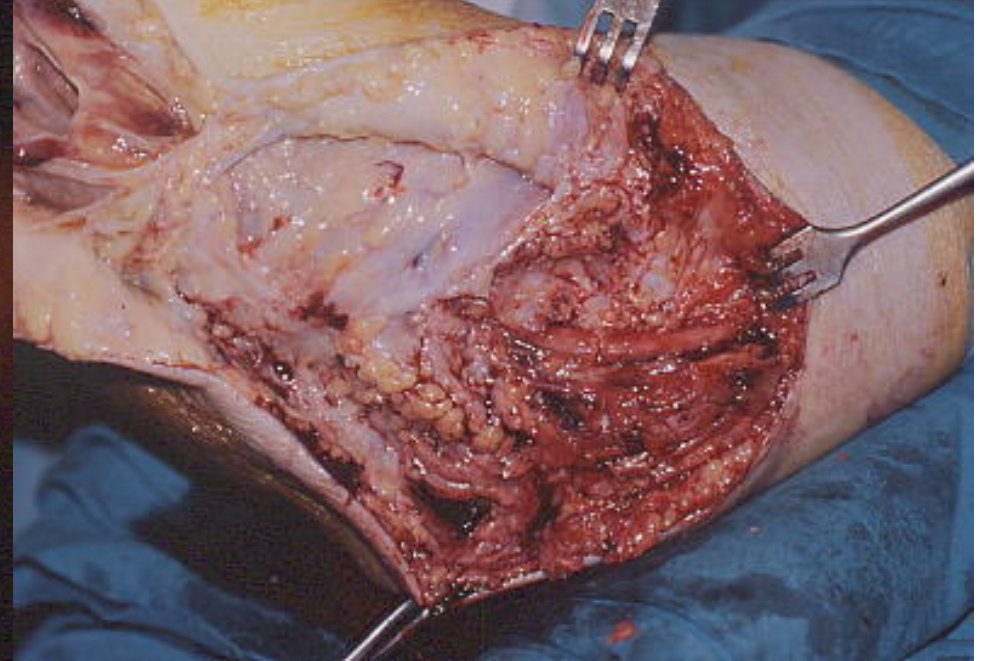


O' Driscoll SW, Carmichael SW Money BF
The cubital tunnel and ulnar nerve neuropathy
J Bone Joint Surg 73B, 613-617, 1991



GOMITO VALGO
Idiopatico
Postrauumatico

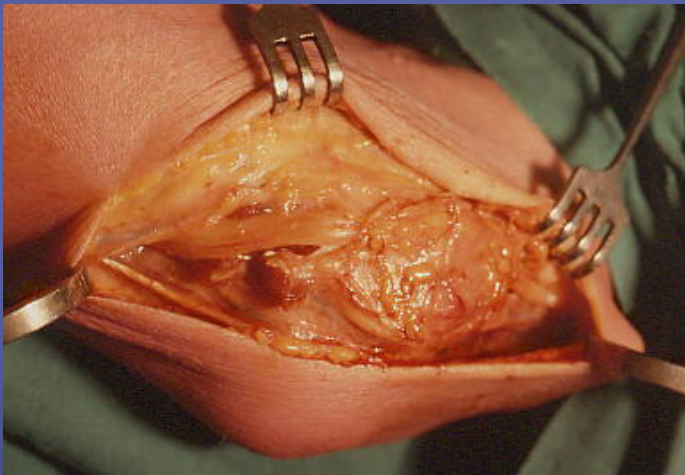




G.F. 72 aa Cisti artrogena in sinovite gomito

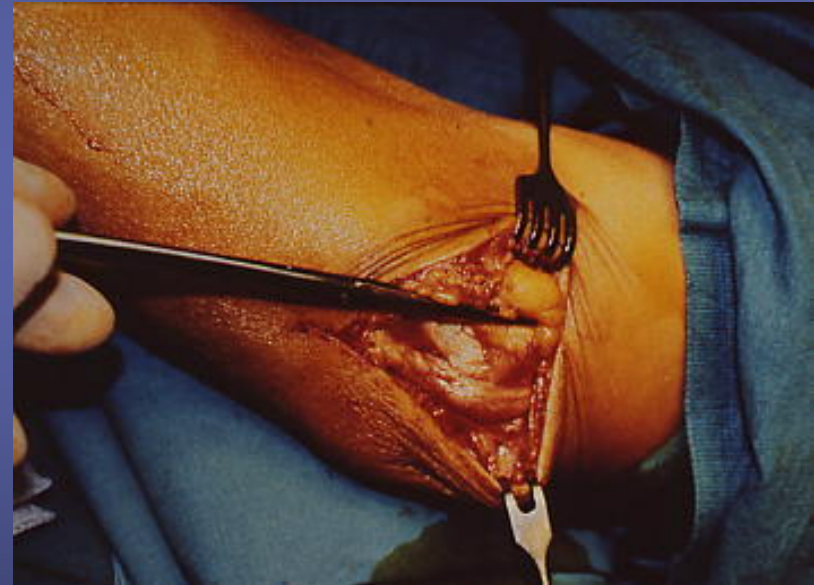
A B

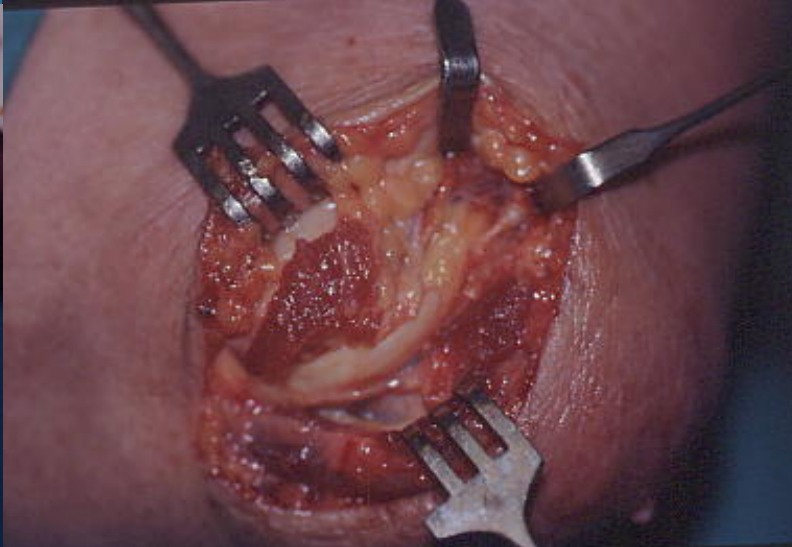
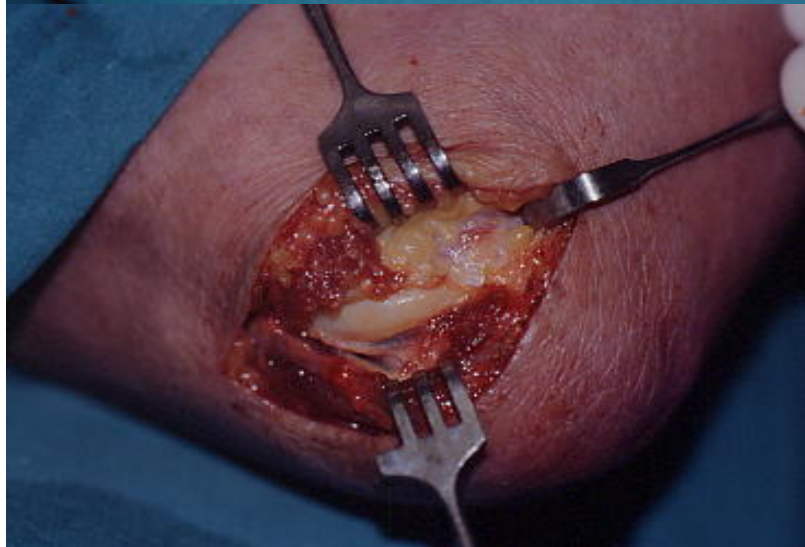
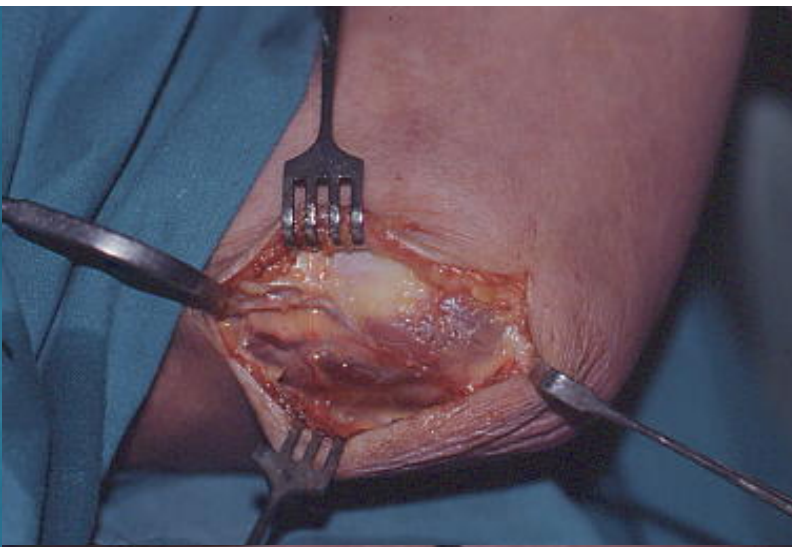
G.L. 55 anni
Compressione da cisti artrogena



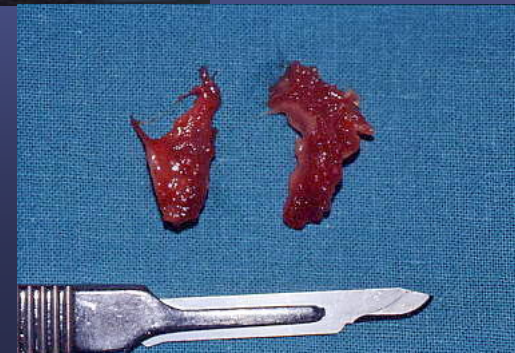


**G.F., maschio, 47
anni, compressione
ulnare al gomito da
lipoma**



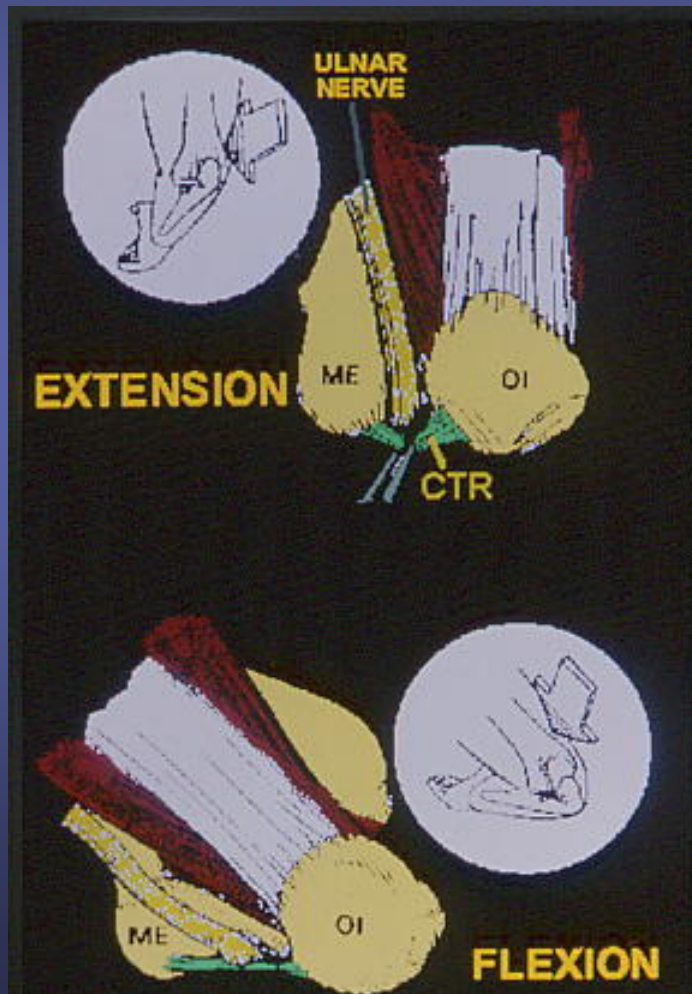


A.R. 28 anni M.Epitrocleo-anconeale di Gruber

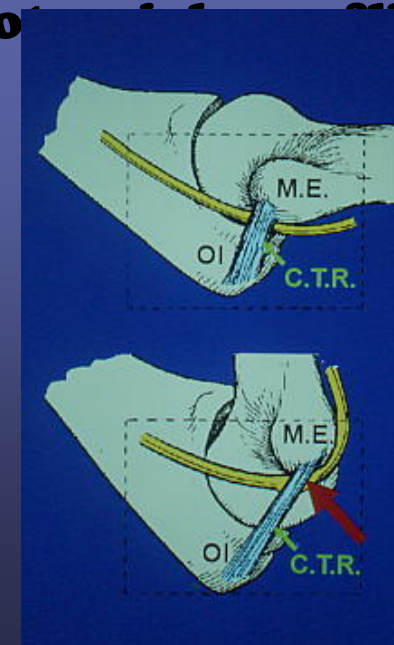


In realtà il tunnel cubitale non va visto come un recipiente statico in cui si trova immerso il nervo ulnare ma è più utile interpretarlo come una struttura che dinamicamente si modifica.....

Biomeccanica del tunnel cubitale



In flessione i punti di inserzione del ligamento arcuato si allontanano per cui il ligamento viene stirato e si avvicina al nervo ulnare, determinando un



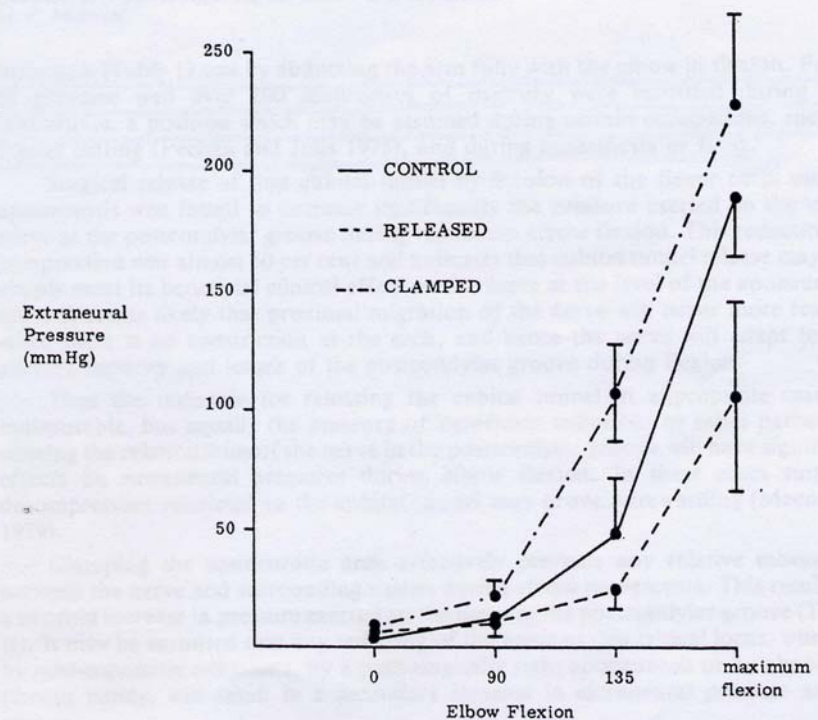
EXTRANEURAL PRESSURES AFFECTING THE ULNAR NERVE AT THE ELBOW

M. F. MACNICOL, Edinburgh

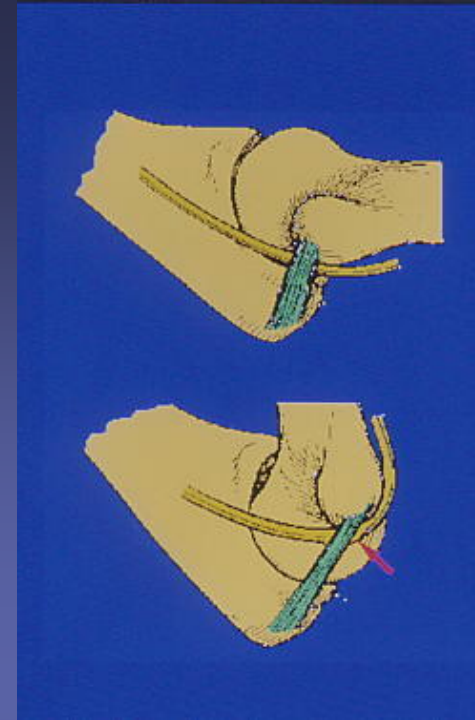
SUMMARY

Using fresh cadaveric arms, extraneural pressures were recorded along the path of the ulnar nerve at the elbow using a fine silastic cannula. Significant pressure increases occurred when the elbow was flexed beyond a right angle, and concomitant shoulder abduction further raised the pressures recorded at the cubital tunnel and postcondylar groove. Surgical release of the cubital tunnel decreased pressures in the post-condylar groove by approximately 50 per cent when the elbow was fully flexed, whereas clamping the flexor carpi aponeurotic arch significantly increased extraneural pressures in the groove, presumably by preventing accommodative changes in neural relationships.

**MacNicol nel 1982
dimostrava un
raddoppiamento della
pressione all'interno del
tunnel cubitale durante la
flessione del gomito**



**Apfelberg nel 1973
dimostrava che con la
flessione il diametro del
tunnel diminuisce del 55%
e che il nervo si
assottiglia ed allunga il
suo decorso di 5 mm per
ogni 45° di flessione del
gomito**



TREATMENT OF ULNAR NERVE PALSY AT THE ELBOW WITH A NIGHT SPLINT

P. SEROR

From the Laboratoire d'Electromyographie, Paris, France

Twenty-two patients with ulnar nerve palsy at the elbow, confirmed by electromyography, were treated by a night splint which prevented flexion of the elbow beyond 60°. The splint was worn all night regularly for at least six months. At a mean follow-up of 11.3 months, 17 patients had clinical and electromyographic assessment and five were contacted by telephone.

There was improvement in the symptoms in every patient, including three who had failed to respond to surgical decompression. There was electromyographic improvement in 16 of the 17 patients re-examined at follow-up. The mean improvement in motor nerve conduction velocity was 6.5 m/s and in sensory nerve conduction velocity 9.5 m/s. The efficacy of this treatment suggests that nocturnal elbow flexion is an important cause of ulnar nerve lesions at the elbow.

*J Bone Joint Surg [Br] 1993; 75-B: 322-7.
Received 5 February 1992; Accepted 16 June 1992*

lesions. My experience is that patients with ulnar neuropathy at the elbow regularly suffer from symptoms after sleeping with the elbow flexed (Seror 1992).

The results are now reported of the use of a night splint to limit elbow flexion in 22 patients with ulnar nerve palsy at the elbow.

PATIENTS AND METHODS

Twenty-two consecutive patients, 12 men and 10 women, were studied. They had presented with clinical symptoms and electromyography (EMG) had demonstrated ulnar nerve lesions at the elbow. Their mean age was 52 years (39 to 81). The symptoms were in the right arm in 15 and the left in seven, but EMG showed bilateral signs in 14. The mean duration of symptoms was 8.3 months (0.5 to 24).

Sixteen of the patients were classified as having idiopathic symptoms, and three of these had undergone

**La comparsa delle parestesie
notturne avviene per la
prolungata flessione del
gomito nel sonno ed in fasi
iniziali Seror proponeva nel
1993 l'utilizzo di splint
notturni in flessione a 40° con
discreti risultati, almeno per
un certo periodo di tempo**

MORPHOLOGY AND DYNAMICS OF THE ULNAR NERVE IN THE CUBITAL TUNNEL

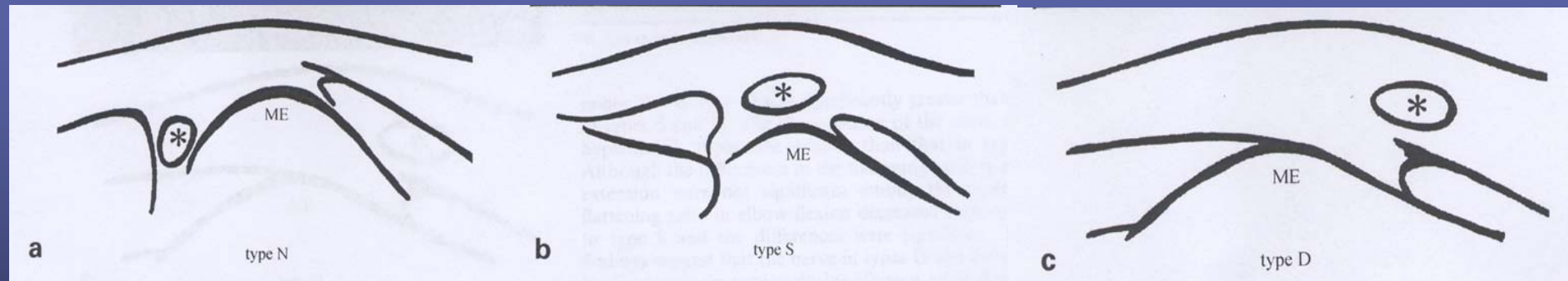
Observation by ultrasonography

M. OKAMOTO, M. ABE, H. SHIRAI and N. UEDA

From the Department of Orthopedic Surgery, Osaka Medical College, Osaka, Japan

We examined 200 normal elbows to assess the usefulness of ultrasonography in examining the ulnar nerve in the cubital tunnel. On longitudinal images in elbow extension, the nerve changed its course at the fibrous band region 11.5 (SD 2.8) mm distal to the medial epicondyle. On axial images, the diameter of the major axis of the nerve was 3.1 (0.5) mm and that of the minor axis was 1.9 (0.4) mm in men. The respective values were 2.7 (0.4) mm and 1.8 (0.4) mm in women. Dynamic studies showed that in 53 elbows (27%), the nerve moved on to the tip of the epicondyle with the elbow flexed and in 39 elbows (20%), the nerve dislocated anteriorly. The diameters of the hypermobile nerves were significantly larger than nerves that did not displace.

Journal of Hand Surgery (British and European Volume, 2000) 25B: 1: 85–89



a. Normale

b. Sublussato

c. Lussato

MORPHOLOGY AND DYNAMICS OF THE ULNAR NERVE IN THE CUBITAL TUNNEL

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Journal of Hand Surgery (British and European Volume, 2000) 25B: 1: 85-89

**Veniva dimostrato un
aumento crescente di
diametro nel nervo
sublussato e lussato per la
sua irritazione**

**Veniva dimostrato un
appiattimento maggiore nel
tipo sublussato**

Table 2—The diameter of the major and minor axes of the ulnar nerve in elbow extension. Values are mean (SD)

	Major axis (mm)	Minor axis (mm)
Type N	2.7 (0.4)	1.8 (0.3)
Type S	3.1 (0.5)	1.9 (0.4)
Type D	3.3 (0.4)	2.0 (0.4)

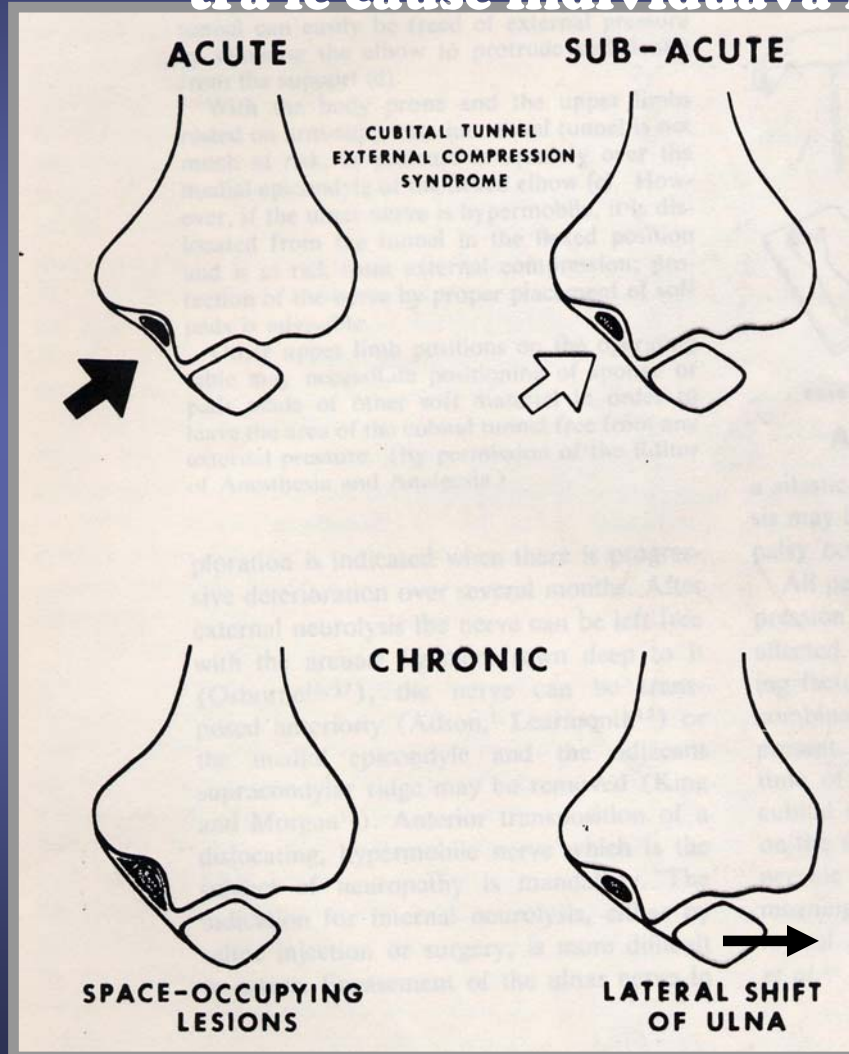
* $P < 0.05$; † $P < 0.01$ (ANOVA).

Table 3—Flattening ratio of the ulnar nerve in elbow extension and flexion. Values are mean (SD)

	Extension (%)	Flexion (%)
Type N	67 (14)	60 (20)
Type S	63 (14)	38 (12)
Type D	62 (11)	51 (19)

† $P < 0.01$ (paired *t*-test, ANOVA).

Wadsworth nel 1977 descriveva compressioni acute, subacute e croniche. Tra le croniche considerava tutte quelle lesioni occupanti spazio (cisti artrogene, neoplasie ecc), ma tra le cause individuava il “lateral shift dell’ulna”



Dava poi importanza a difetti di accrescimento del condilo e della troclea o ad esiti postraumatici che facessero diminuire la fisiologica cresta che divide il lato ulnare da quello radiale della epifisi distale dell'omero, permettendo uno scivolamento laterale dell'ulna con conseguente

tensione del ligamento arcuato sul nervo ulnare



Stadiazione clinica sec.

McGowan

Grado 1 : parestesie ed ipoestesie

Grado 2 : parestesie, ipoestesie, modesta ipovalidità, eventuali lievi ipotrofie

Grado 3 : parestesie, ipoestesie, marcato deficit muscolare, ipotrofie ed atrofie

**Corrisponden
ti alla italica
definizione di**

Fase Irritativa

Fase Deficitaria

Fase Paralitica

Fase Irritativa

Parestesie in territorio di ulnare

Tinel +

Test di flessione del gomito positivo

Fase Deficitaria

Parestesie, ipoestesia in territorio di ulnare

Anidrosi

**Ipovalidità F.U.C., Fp4-5,mm. ipotenari,
interossei**

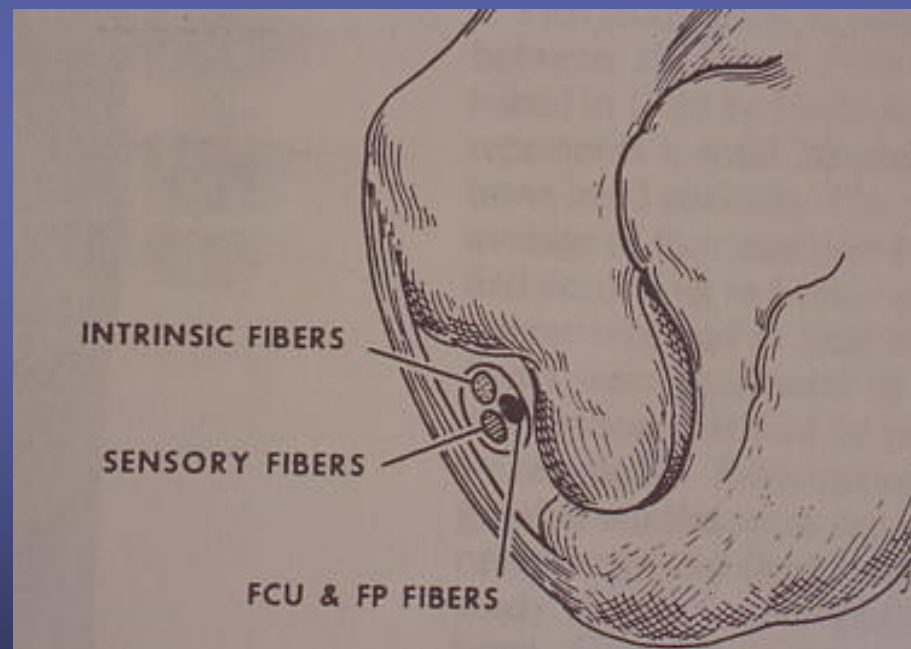
Griffe del 4° e 5° dito

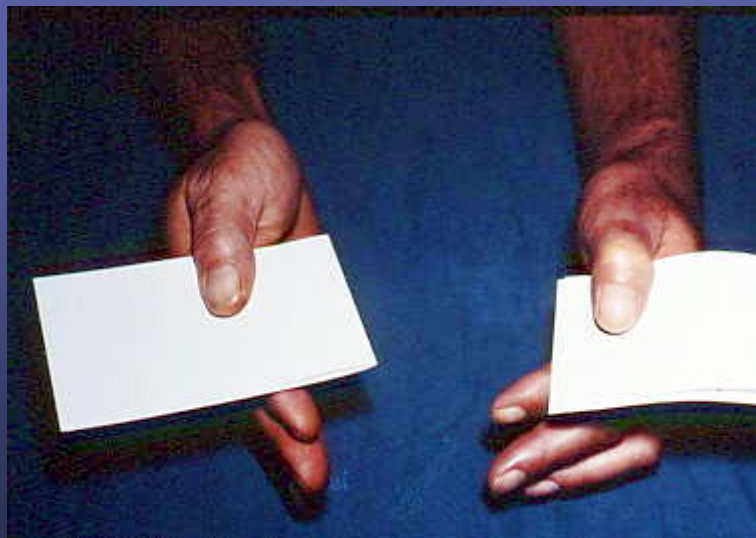
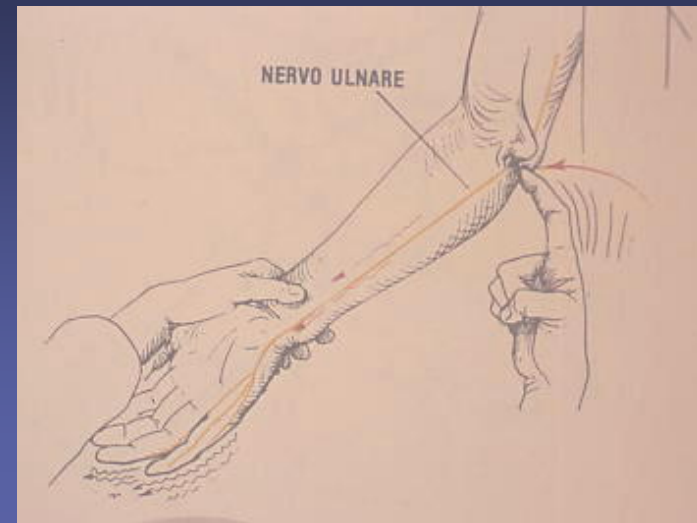
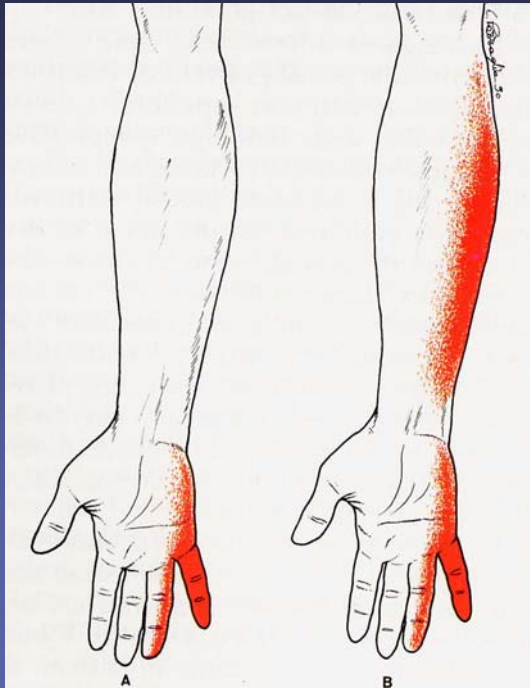
Test di Froment positivo

Fase Paralitica

**Atrofia del 1° spazio, griffe 4°5°, Anestesia
4°5°, Cross Finger Test impossibile**

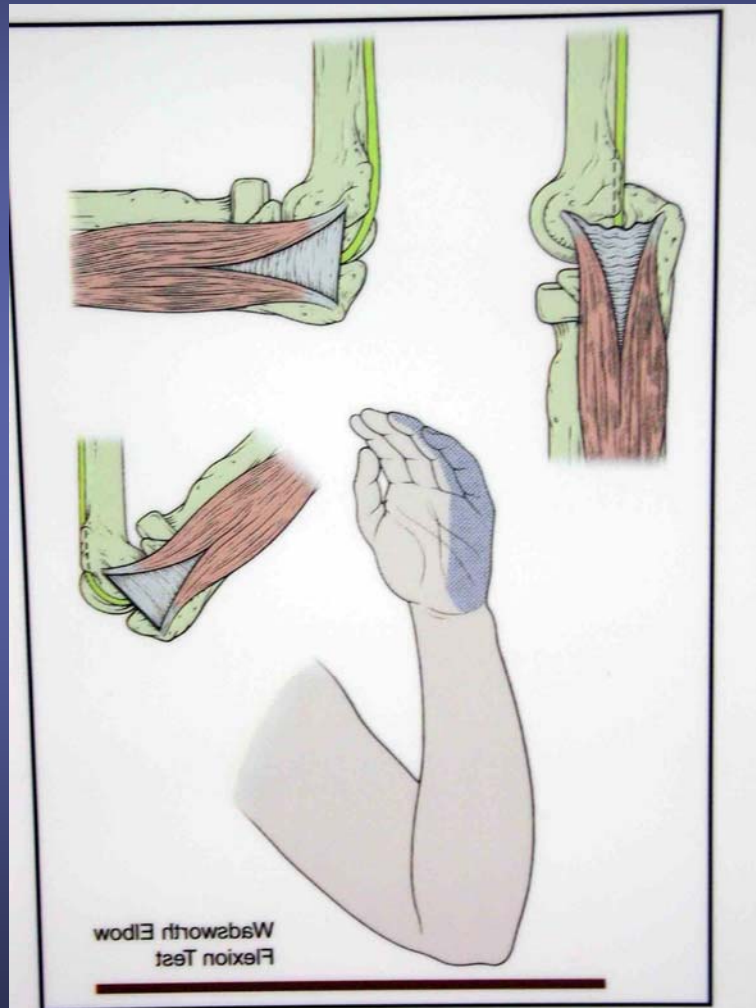
**Progressione da sintomatologia sensitiva a
sofferenza degli intrinseci e quindi del FUC e
FP4°5°**





Test di flessione del gomito di Wadsworth (5 MINUTI)

Wadsworth TG Clin Orthop 124, 189, 1977



Pro

Wadsworth 1977

Buehler 1988

Wadsworth 1998 (2 minuti)

CONTRO

Elbow flexion test in the normal population

The elbow flexion test was investigated in 204 elbows in 102 normal volunteers. The effects of various wrist and shoulder positions were also studied. In 20 elbows in 15 persons (10%) flexion tests were positive with the wrist and shoulder in neutral position. In 27 elbows in 20 persons (13%) tests were positive with wrist extension and shoulder abduction. (J HAND SURG 1992;17A:86-9.)

Ghazi M Rayan, MD, FACS, Christine Jensen, MS, OTR, and James Duke, PhD, Oklahoma City, Okla.

The elbow flexion test is often used as a sensitive test for diagnosing compression neuropathy of the ulnar nerve at the cubital tunnel. The test is

Materials and methods

Two hundred four ulnar nerves of 102 volunteers were used for this study. There were

CLINICAL VALIDITY OF THE ELBOW FLEXION TEST FOR THE DIAGNOSIS OF ULNAR NERVE COMPRESSION AT THE CUBITAL TUNNEL

M. ROSATI, R. MARTIGNONI, G. SPAGNOLLI, C. NESTI, M. LISANTI

We evaluated the elbow flexion test in 216 elbows without compression of the ulnar nerve at the cubital tunnel and without other neuropathies. We used Rayan's four positions as our test. The percentage of positive tests was only 3.6% at one minute, whereas

as a diagnostic one (2), on the other hand Rayan et al. see it as unreliable in view of the number of false positive results (8). The aim of our study was to evaluate the soundness of this test on a significant number of healthy subjects.

Acta Orthopaedica Belgica 64, 366-370, 1998



108 volontari per un totale di 216 gomiti in soggetti esenti da neuropatie periferiche, malattie del SNC, IRC e Diabete

20 soggetti affetti da compressione nervo ulnare al gomito dimostrata anche VdCS

Table I. — Elbow flexion tests and gradation of the responses

	elbow	shoulder	wrist	30"	60"	120"	180"
T1	90° flexion	neutral	neutral				
T2	90° flexion	neutral	full extension				
T3	90° flexion	90° abduction	neutral				
T4	90° flexion	90° abduction	full extension				

grade 0 = no paresthesias, no pain

grade 1 = mild paresthesias and/or pain in the ulnar innervated areas

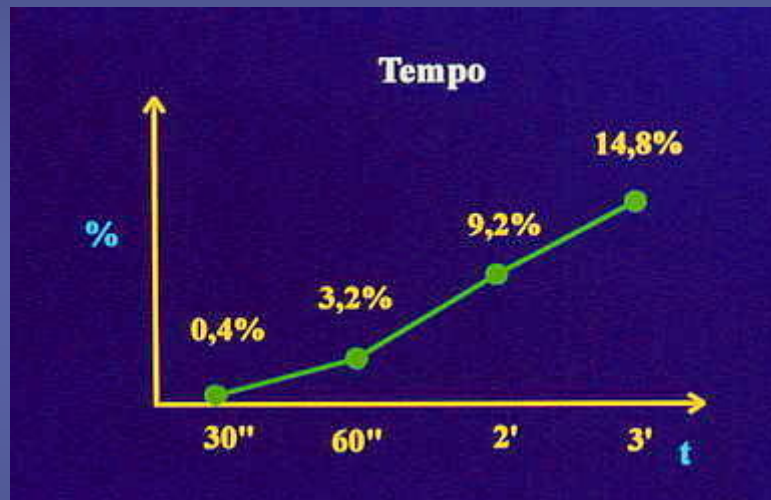
grade 2 = moderate paresthesias and/or pain in the ulnar innervated areas

grade 3 = severe paresthesias and/or pain in the ulnar innervated areas

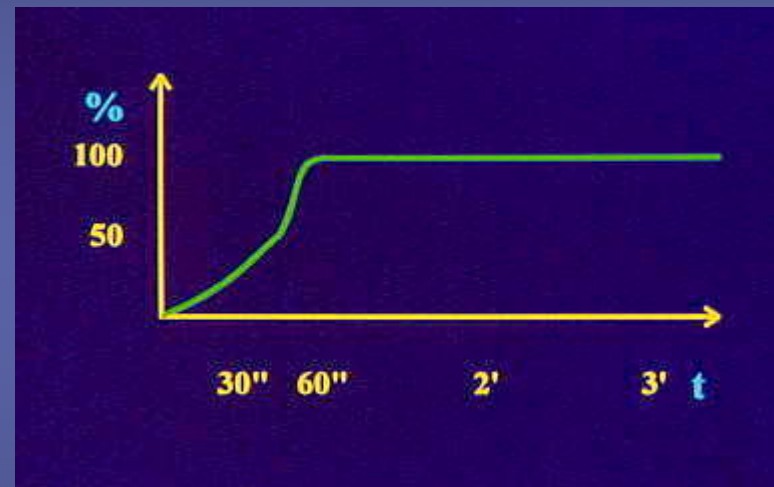
Table II. — Positive responses to elbow flexion test

Test	30"	60"	120"	180"
T1	—	—	1	3
T2	—	—	—	3
T3	—	2	3	5
T4	—	—	1	6
T1 + T2	—	—	2	1
T1 + T4	—	—	—	1
T2 + T4	—	—	—	1
T3 + T4	—	—	5	3
T1 + T2 + T3	—	2	1	—
T1 + T2 + T4	—	—	—	2
T1 + T3 + T4	—	—	1	—
T2 + T3 + T4	—	3	2	6
T1 + T2 + T3 + T4	—	—	8	4

**Soggetti normali
falsi + 7 su 216 ad 1'**



**Soggetti patologici
100% di positivi ad 1'**



il test va effettuato per un minuto pena falsi positivi !!!

Provocative Testing for Cubital Tunnel Syndrome

Christine B. Novak, MS, Gilbert W. Lee, MD, Susan E. Mackinnon, MD,
Laurel Lay, MD, St. Louis, MO

This prospective study evaluated the clinical usefulness of provocative testing in 32 subjects with electrodiagnostically proven cubital tunnel syndrome and 33 control subjects. Four provocative tests were included: Tinel's sign, elbow flexion, pressure provocation, and combined elbow flexion and pressure provocation. The mean age of the control group was 41 years and 46 years for the group with cubital tunnel syndrome. In the control group, provocative tests were rarely positive. In 44 extremities with cubital tunnel syndrome, 31 had a Tinel's sign, 33 had a positive elbow flexion test, 39 had symptoms with pressure only, and 41 had symptoms with a combination of pressure provocation and elbow flexion testing. The sensitivity of the Tinel sign was 0.70, and at 30 seconds, the sensitivities of the other provocative tests were: elbow flexion (0.32), pressure provocation (0.55), and pressure-flexion test (0.91). The most sensitive provocative test in the diagnosis of cubital tunnel syndrome was elbow flexion when combined with pressure on the ulnar nerve. (J Hand Surg 1994; 19A:817-820.)

La sensibilità del Tinel è

0.70

A 30" della flessione del gomito

0.32

A 30" della compressione diretta del nervo

0.55

A 30" flessione+compressione del nervo

0.91

Crossed fingers and other tests of ulnar nerve motor function

All tests for ulnar nerve motor function require demonstration and explanation if they are to be carried out reliably. The tests used most commonly may be difficult to elicit, particularly in children or in the presence of an acute injury. The authors have found that the ability to cross the middle over the index finger is a reliable test of ulnar nerve function. This maneuver of "crossing the fingers" is in common usage from childhood on as a good luck sign and is elicited easily in the presence of an intact ulnar nerve. An annotated table is included of other tests that may be useful in evaluating ulnar nerve integrity.

A. Scott Earle, M.D., and Catherine Vlastou, M.D., Cleveland, Ohio

DIAGNOSI

Quadro clinico

Rx, ecografia

EMG, VdCS

Similar to other entrapment neuropathies, the use of conduction velocities as sole indication for surgery is insufficient unless the patient has accompanying clinical findings.

Diagnosi Differenziale

- **Thoracic Outlet Syndrome**
- **S. di Pancoast-Ciuffini, S. di Claude-Bernard-Horner**
- **S.L.A.**
- **Sclerosi Multipla**
- **Cervicobrachialgia C7-C8, C8-D1**
- **Compressione n. ulnare al polso**
- **Compressioni a più livelli**
- **Nevrite tossica**

TRATTAMENTO CHIRURGICO

Anteponizione del nervo ulnare

Learmonth 1943

Epicondilectomia mediale

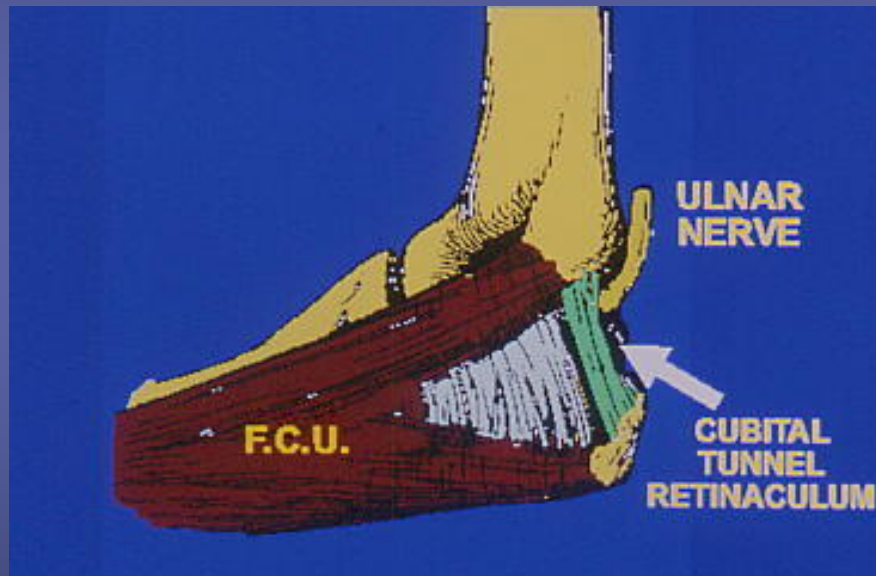
King e Morgan 1950

Neurolisi semplice

Osborne 1957

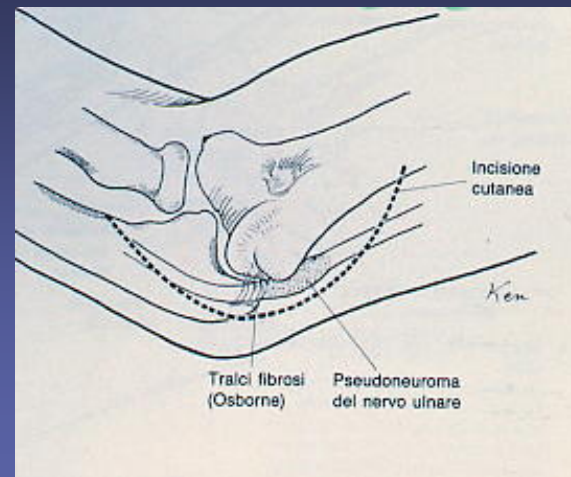
Neurolisi semplice

Osborne 1957

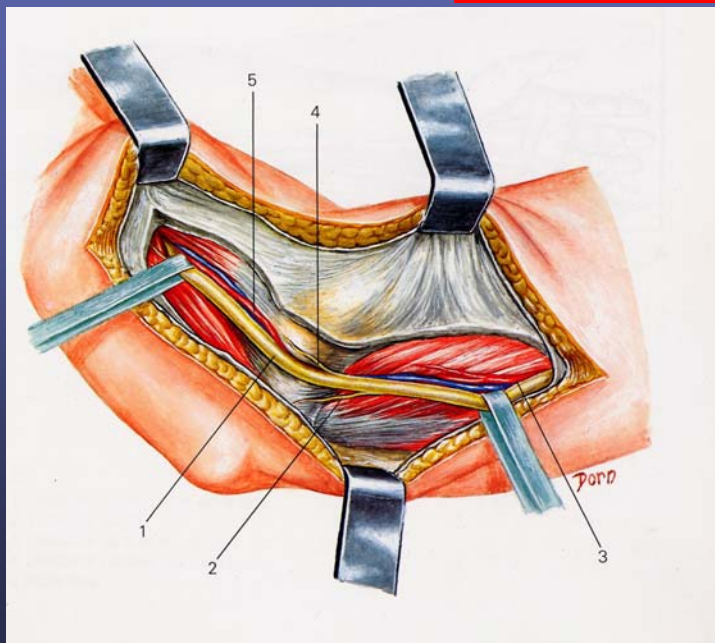


L' intervento più semplice, ed al tempo stesso punto di partenza di qualsiasi strategia si voglia seguire

1. Incisione



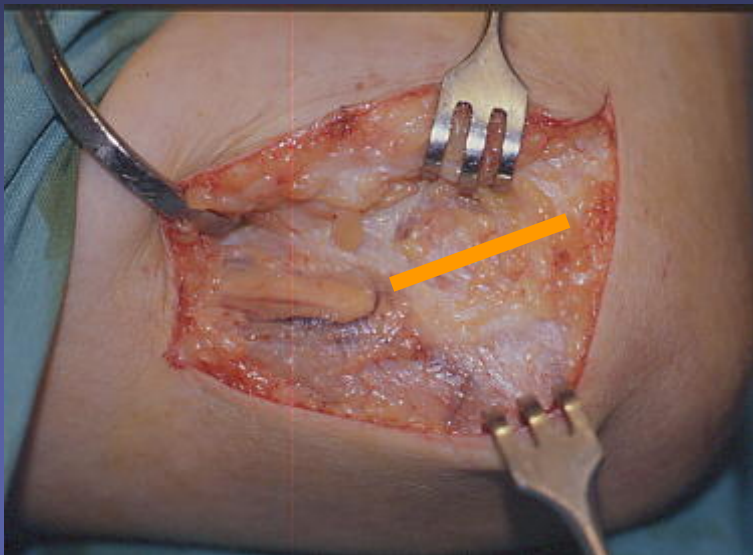
2. Isolamento del nervo



**Prossimalment
e
all'articolazione,
e, scorrendo
lungo il
tricipite**



3. Sezione del ligamento

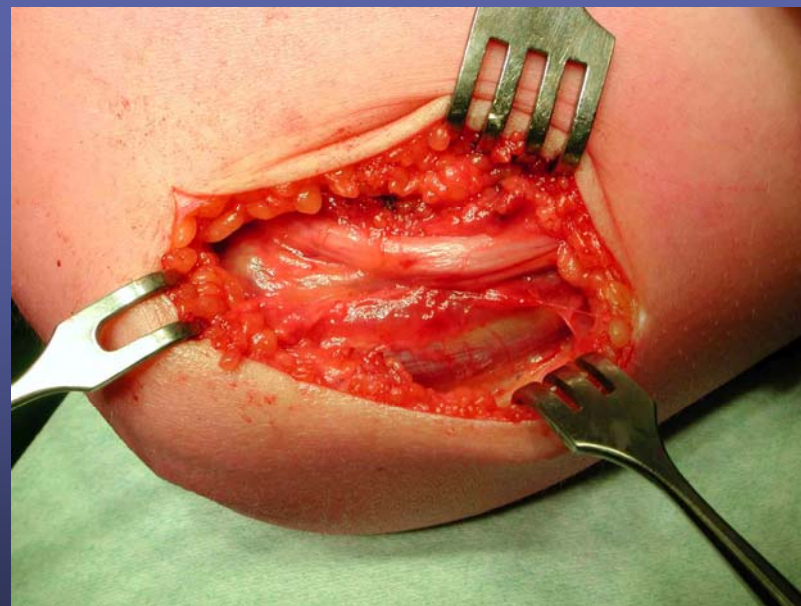
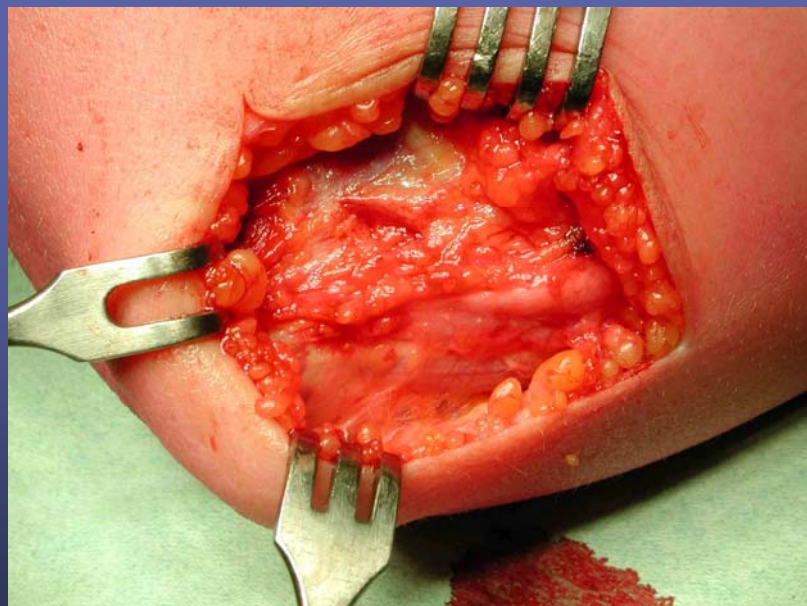
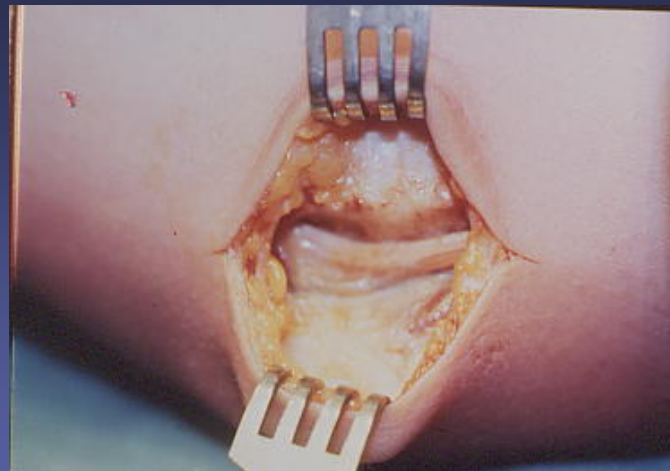
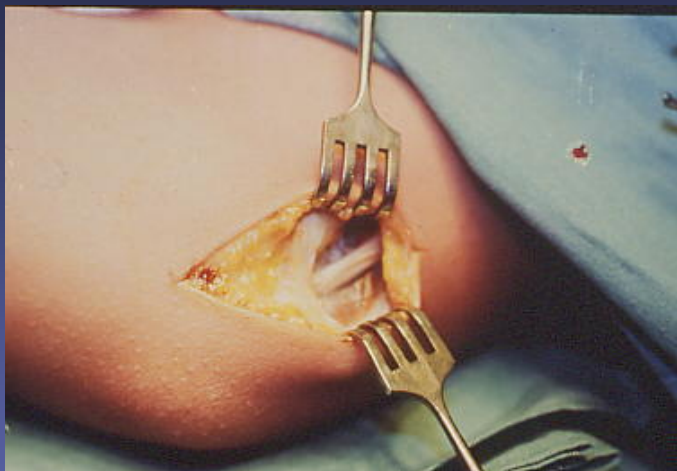


4. Valutazione del conflitto epitrocleare in flessione

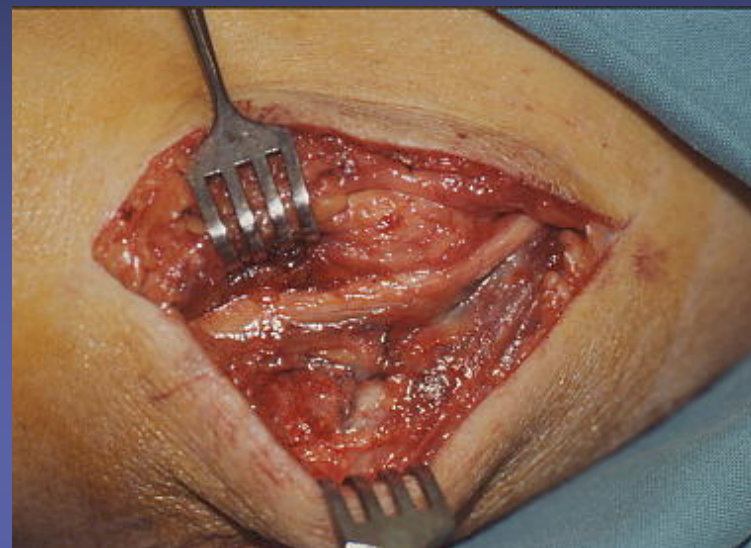


**Epicondilectomia mediale
sec. King**

1



2

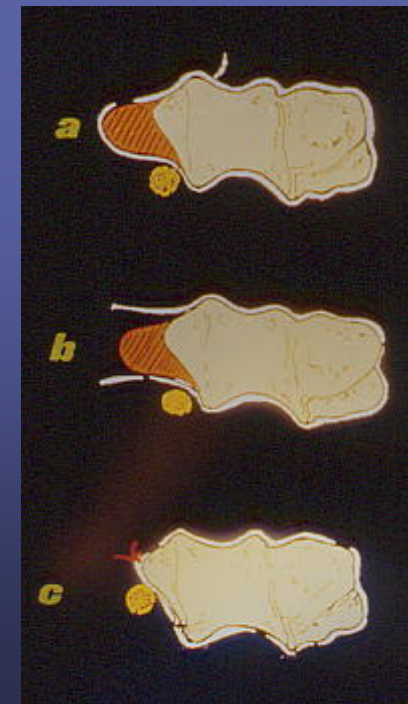
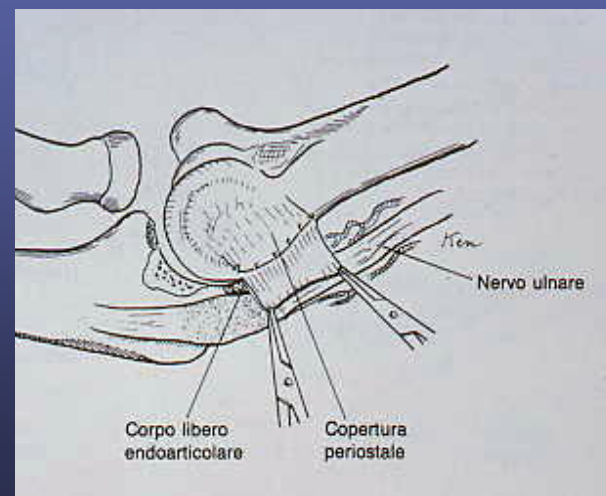
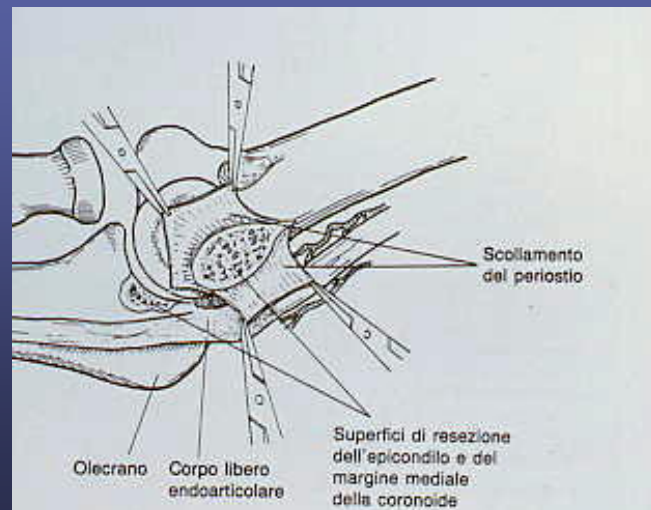
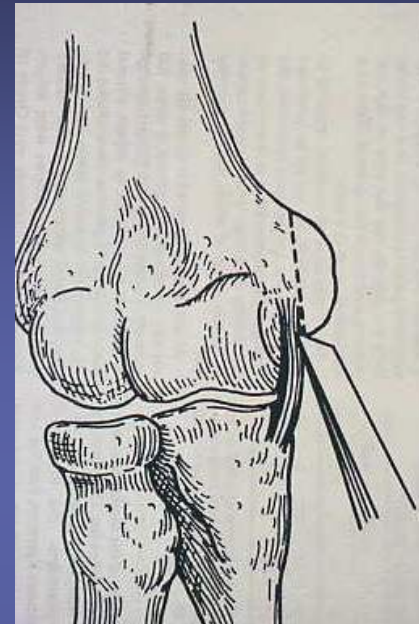
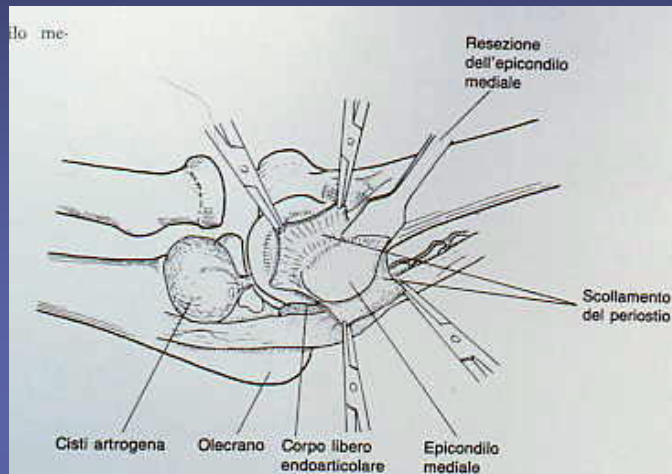


G.F. 31 anni
Compressione Nervo Ulnare al
gomito in M.Epitrocleo-anconeo
di Gruber **Sufficiente la**
neurolisi dopo aver effettuato
l'asportazione del ventre
muscolare anomalo



Epicondilectomia mediale

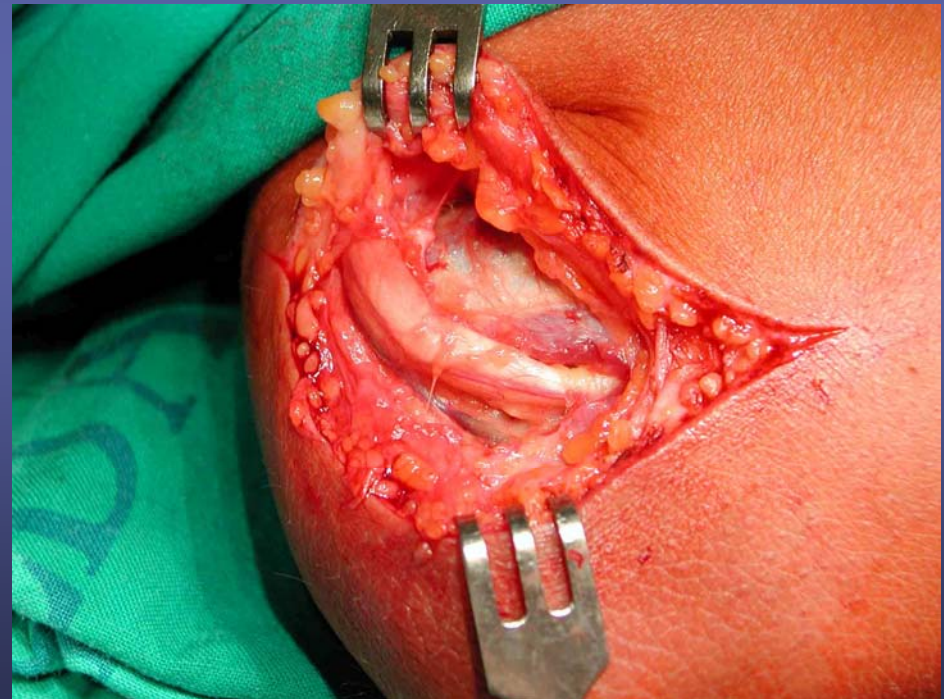
King & Morgan 1950



Epicondilectomia mediale

King & Morgan 1950

Con l'epicondilectomia il nervo risulta anche trasposto anteriormente, con riduzione del suo percorso, con sua minor tensione ed al tempo stesso con rispetto del circolo contenuto nel perinevrio come un vero e proprio meso

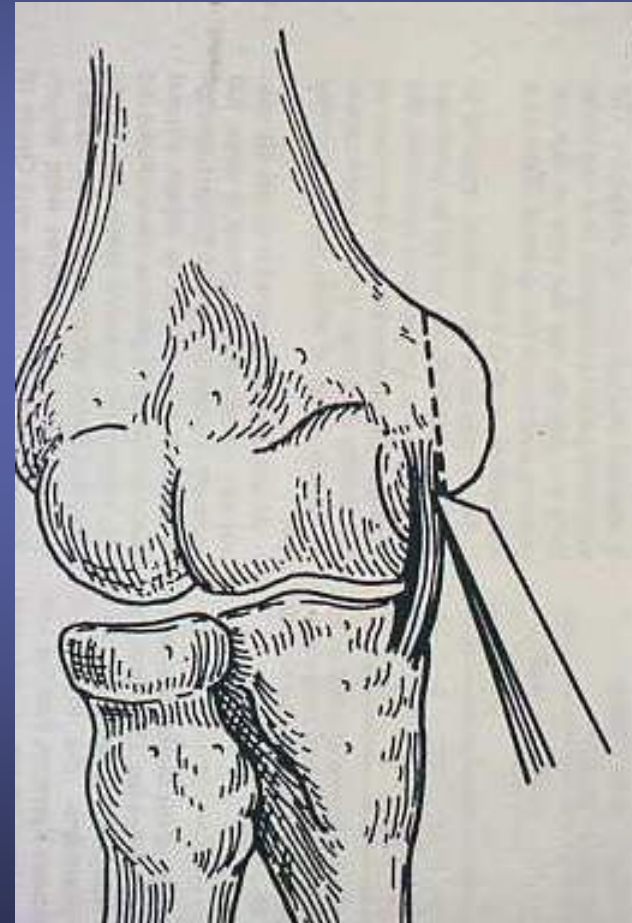


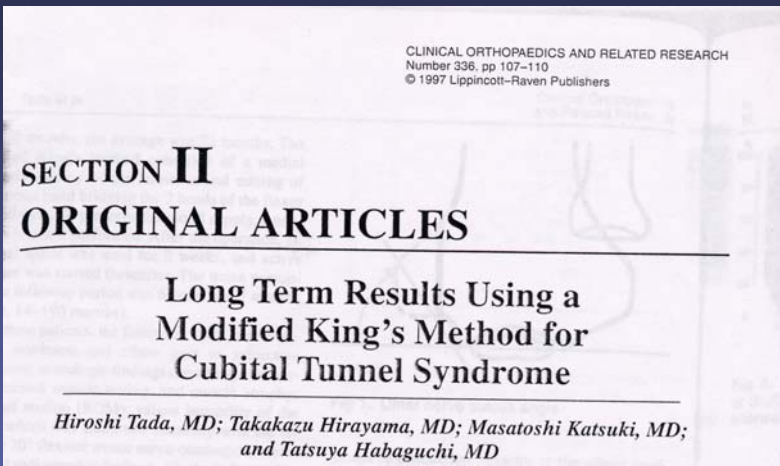
Epicondilectomia mediale

King & Morgan 1950

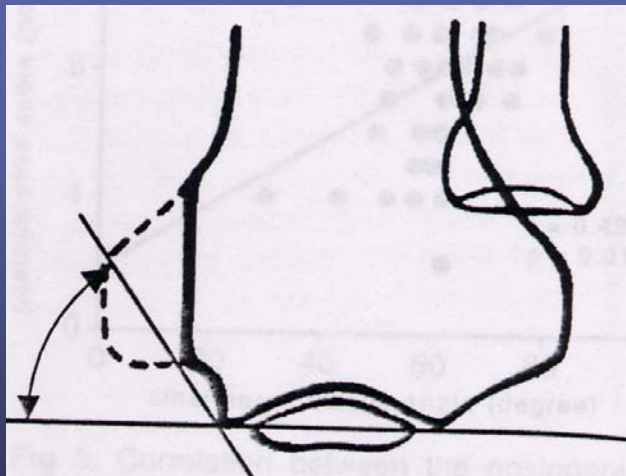
D. Quanto epicondilo va asportato ? R. Q.B.

I detrattori di questo intervento riferiscono di un indebolimento del ligamento collaterale ulnare con instabilità in valgo. Se la resezione non è completa il ligamento viene rispettato. Noi non abbiamo mai osservato instabilità ligamentosa postoperatoria, ma in caso di resezioni molto ampie è un fenomeno che può “iniziare” a

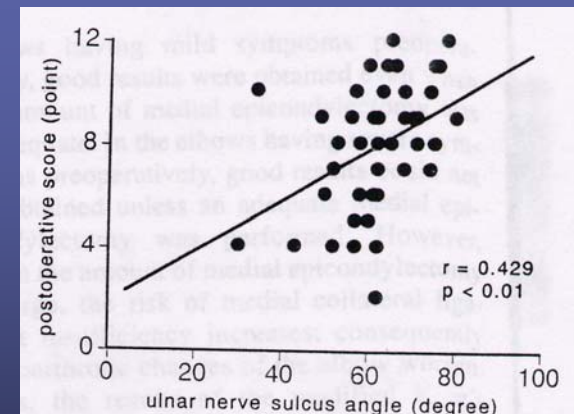




**Intervento di King più
ritensione lig.collaterale
ulnare (???)**



**Ulnar nerve sulcus
angle**

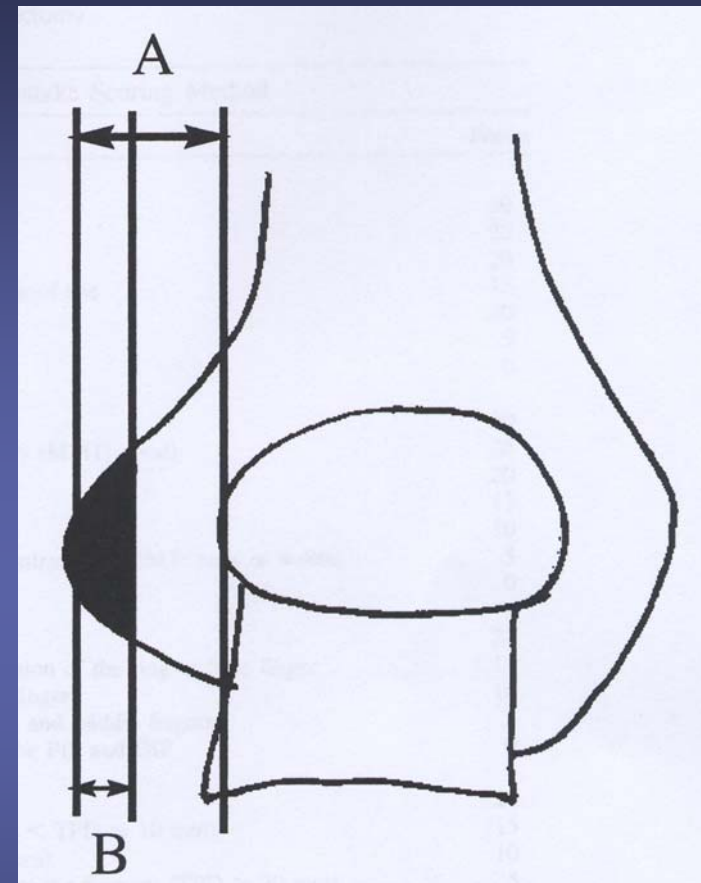


Comparison Between Partial and Minimal Medial Epicondylectomy Combined With Decompression for the Treatment of Cubital Tunnel Syndrome

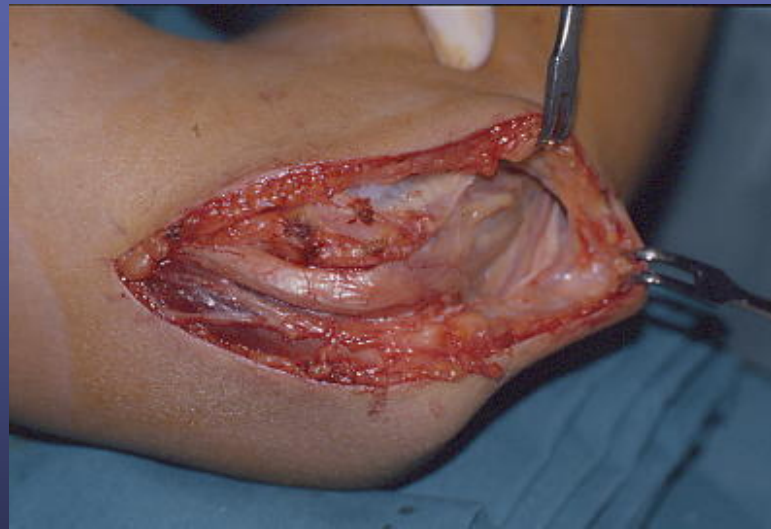
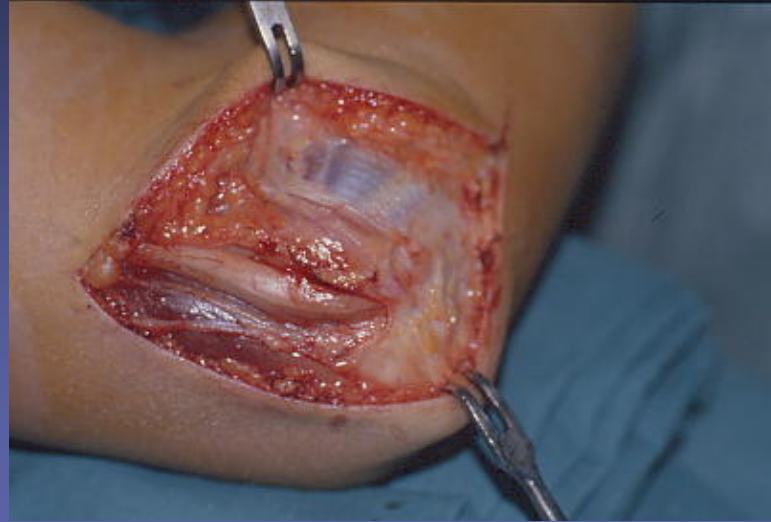
Masatoshi Amako, MD, Koichi Nemoto, MD, Masahisa Kawaguchi, MD,
Naoki Kato, MD, Hiroshi Arino, MD, Kyosuke Fujikawa, MD,
Saitama, Japan

We have performed minimal medial epicondylectomy for cubital tunnel syndrome since 1990 to preserve the anterior medial collateral ligament. In this study we compared surgical outcomes between partial medial epicondylectomy (14 patients) and minimal medial epicondylectomy (18 patients) combined with ulnar nerve decompression for the treatment of cubital tunnel syndrome. Mean preoperative Yasutake scores were 57 ± 17 points ($\pm$ SD) in the partial epicondylectomy group and 60 ± 15 points in the minimal medial epicondylectomy group. The postoperative scores were 79 ± 19 points and 87 ± 10 points, respectively. Both groups had significant improvement in their Yasutake scores following medial epicondylectomy. Similar improvements in motor conduction velocity were observed. There was no significant difference in improvement of either the Yasutake scores or the motor conduction velocity between the 2 groups. Valgus instability of the elbow was significantly greater in the partial epicondylectomy group. We therefore conclude that minimal medial epicondylectomy combined with ulnar nerve decompression is an effective treatment for cubital tunnel syndrome and that a larger excision of the medial epicondyle should be avoided. (*J Hand Surg* 2000; 25A:1043-1050. Copyright © 2000 by the American Society for Surgery of the Hand.)

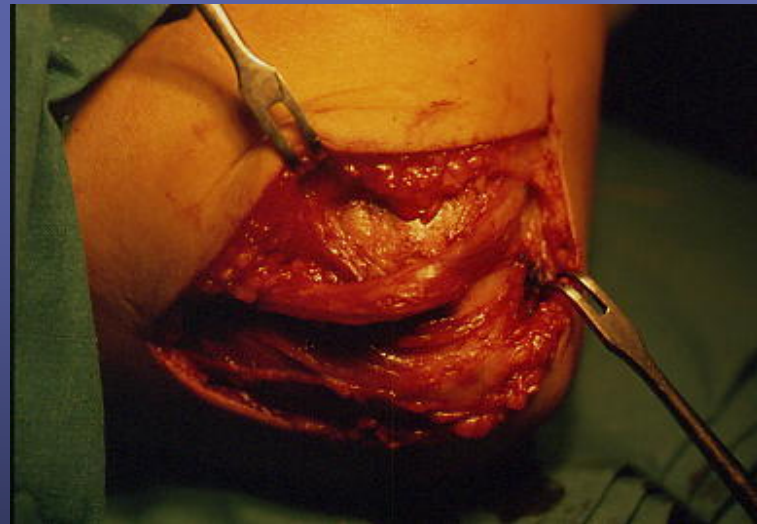
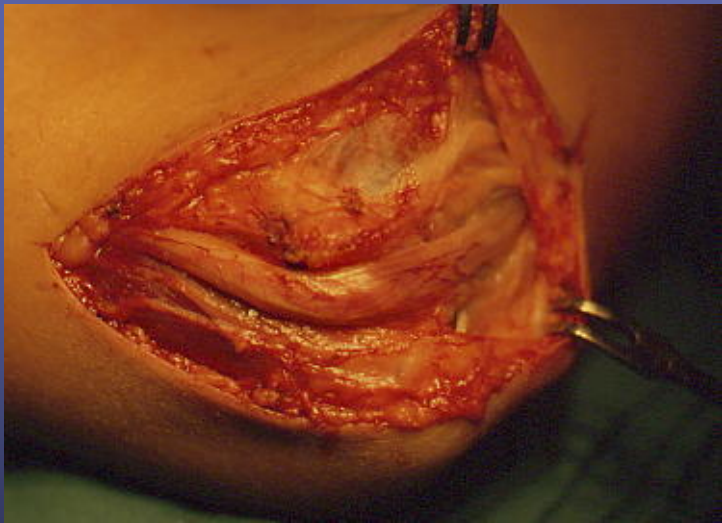
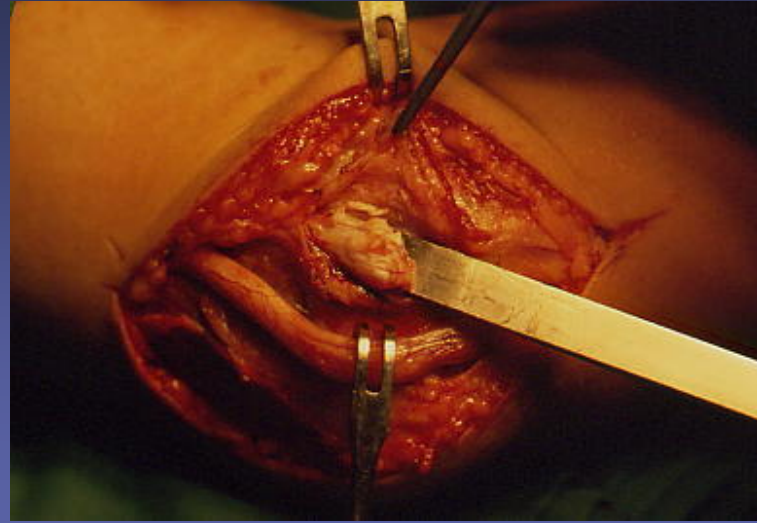
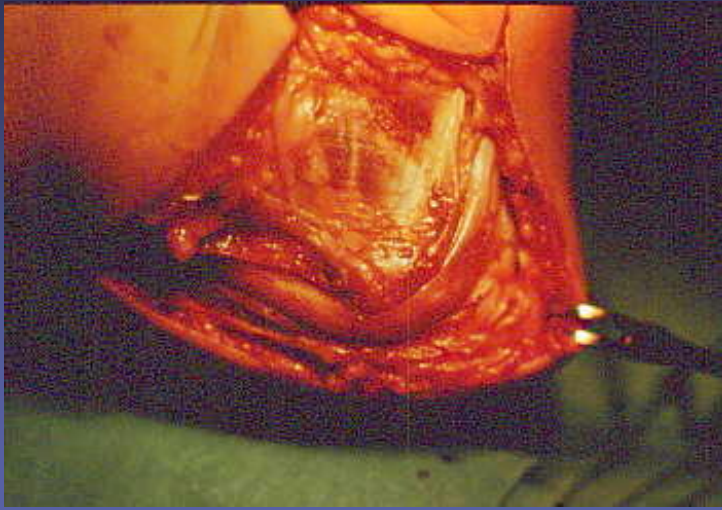
Key words: Cubital tunnel syndrome, medial epicondylectomy, valgus instability.



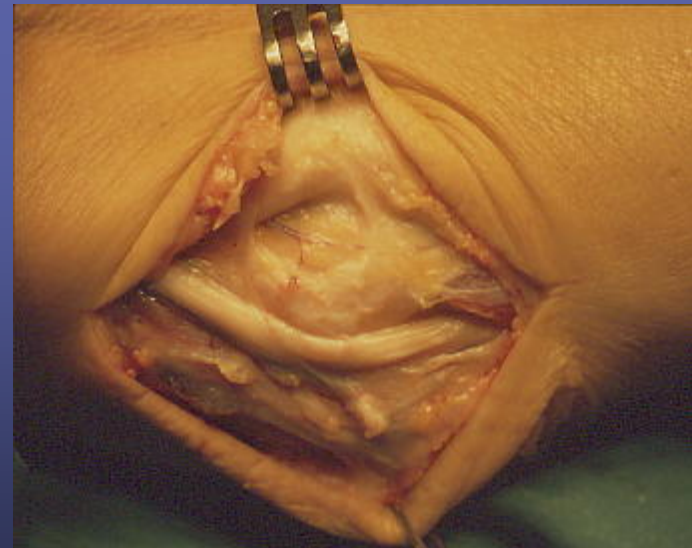
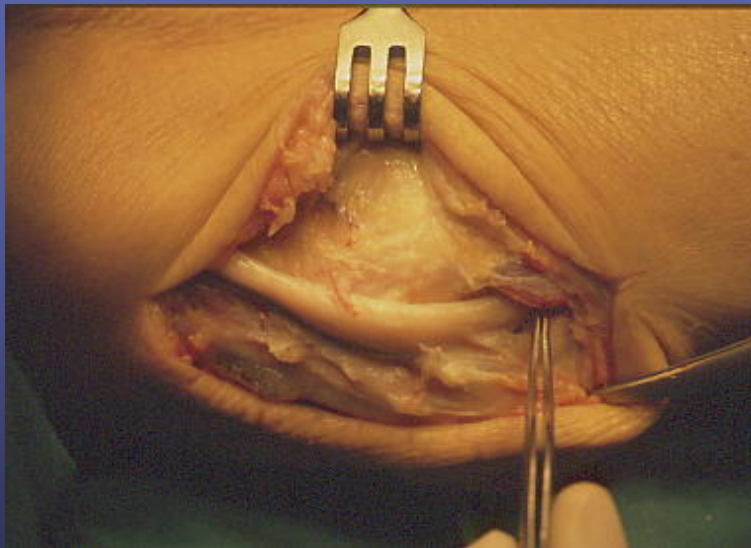
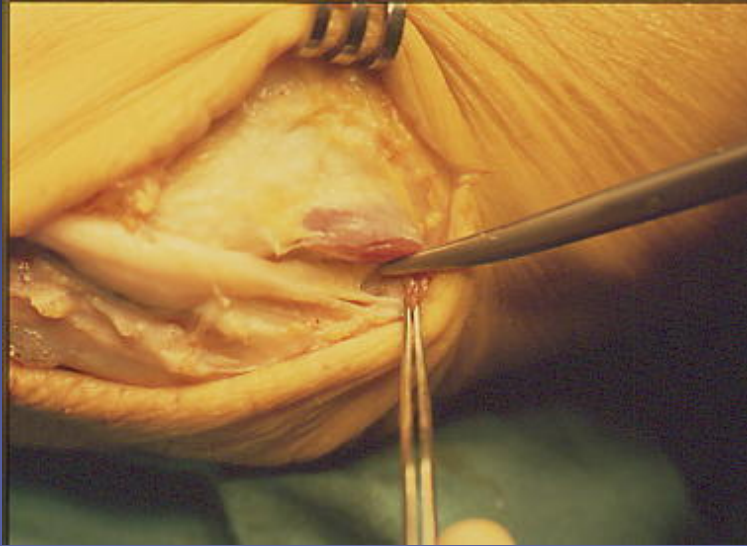
**La resezione parziale da i migliori risultati per stabilità
ligamentosa e risultati funzionali postoperatori**



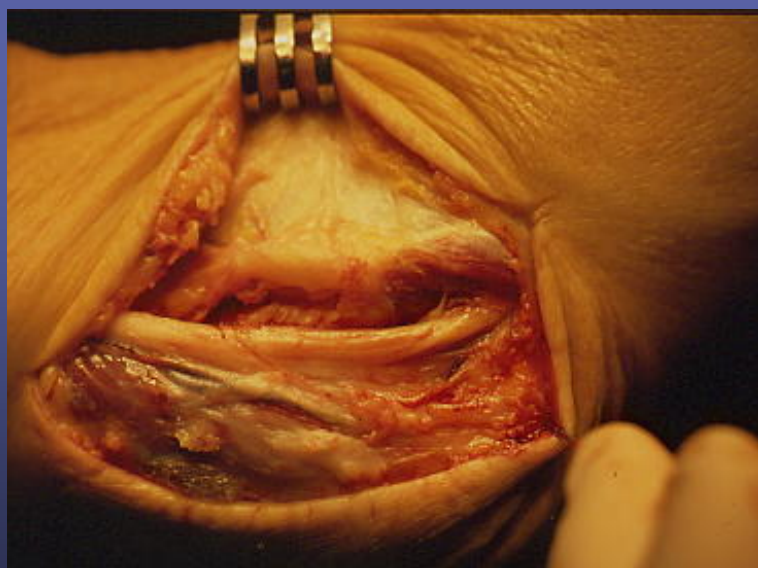
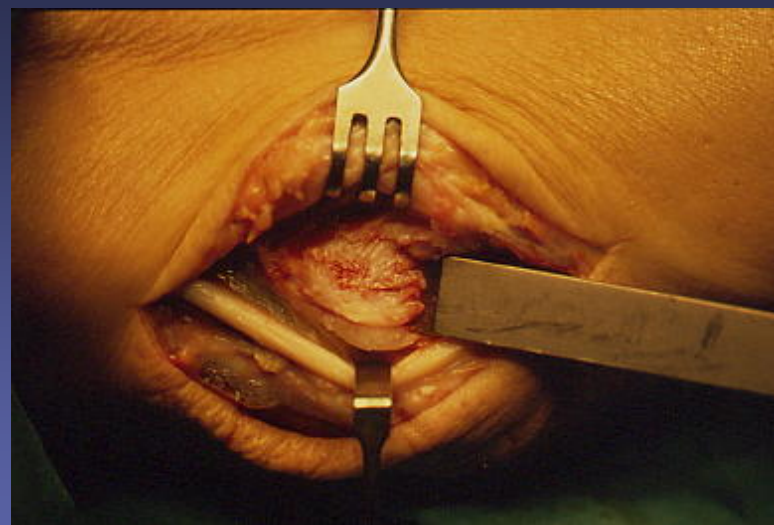
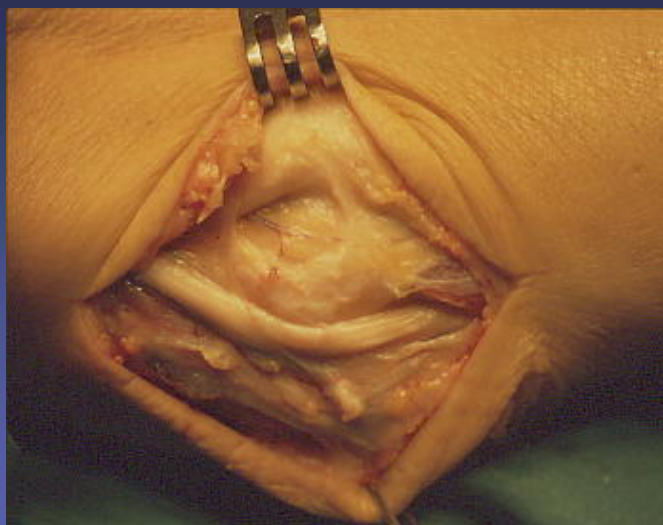
a



b

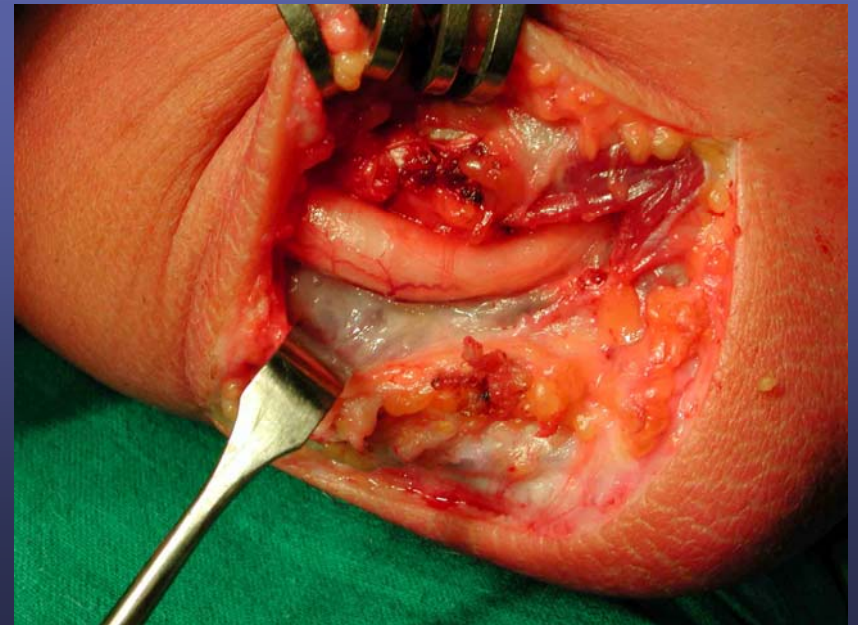
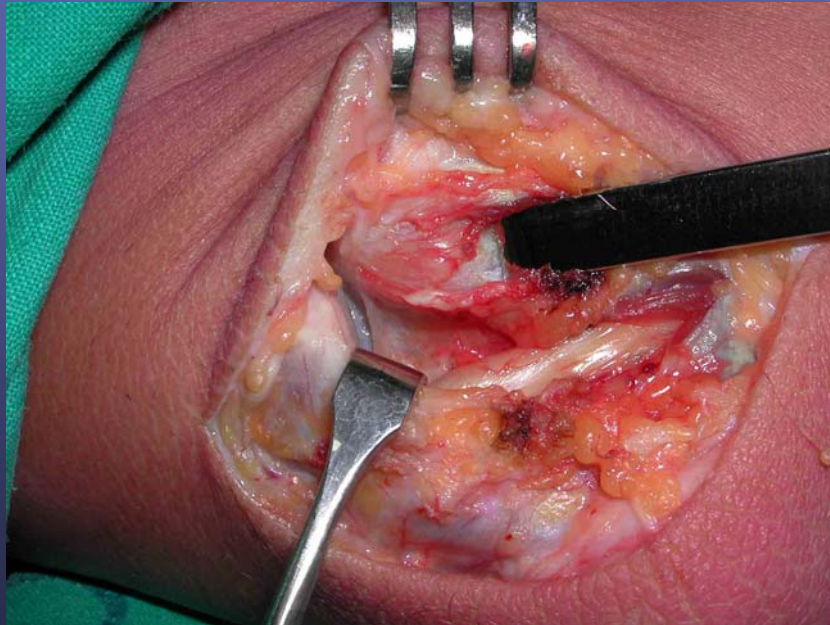
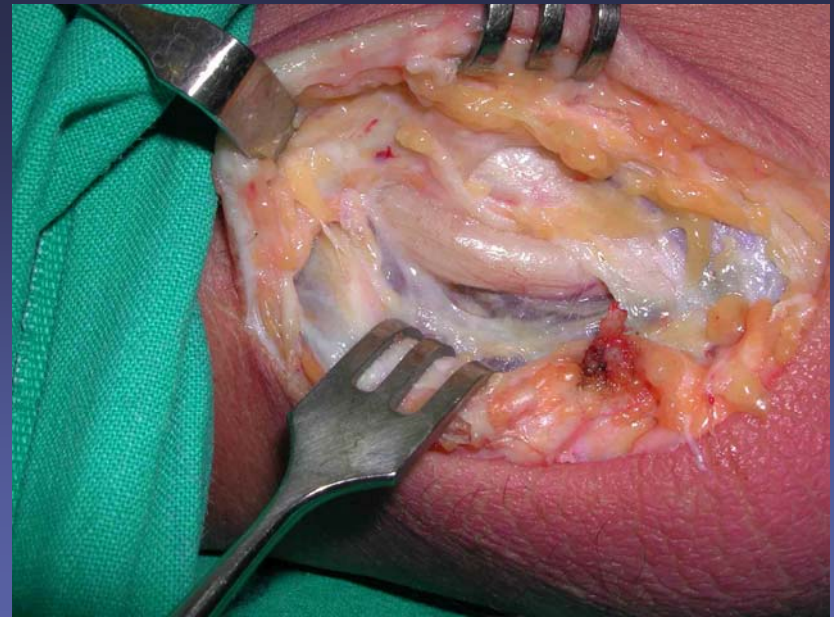
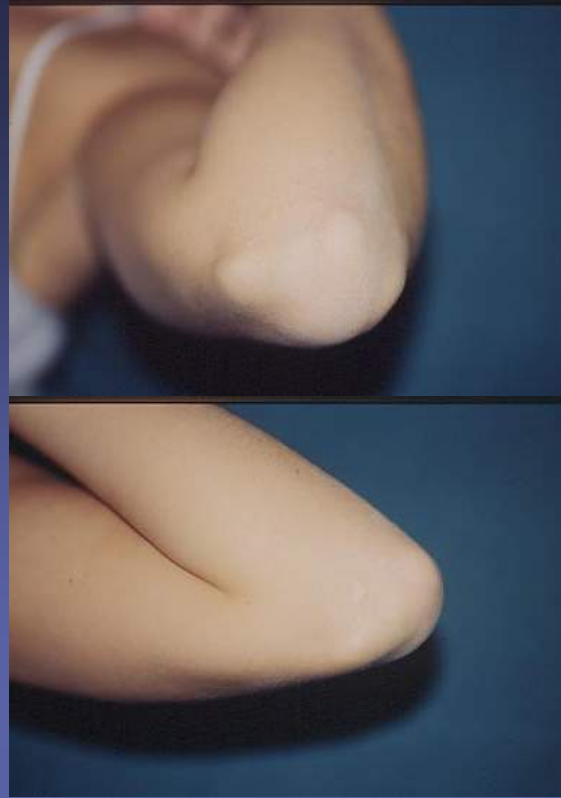


a

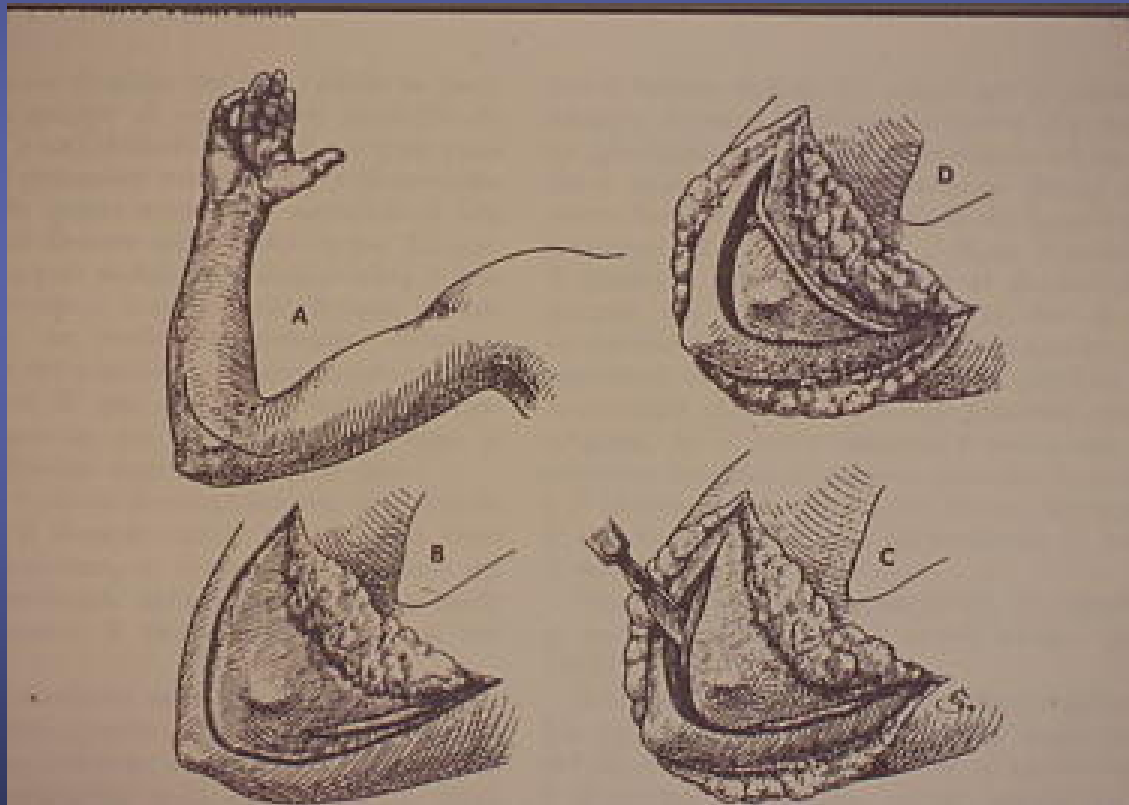


b

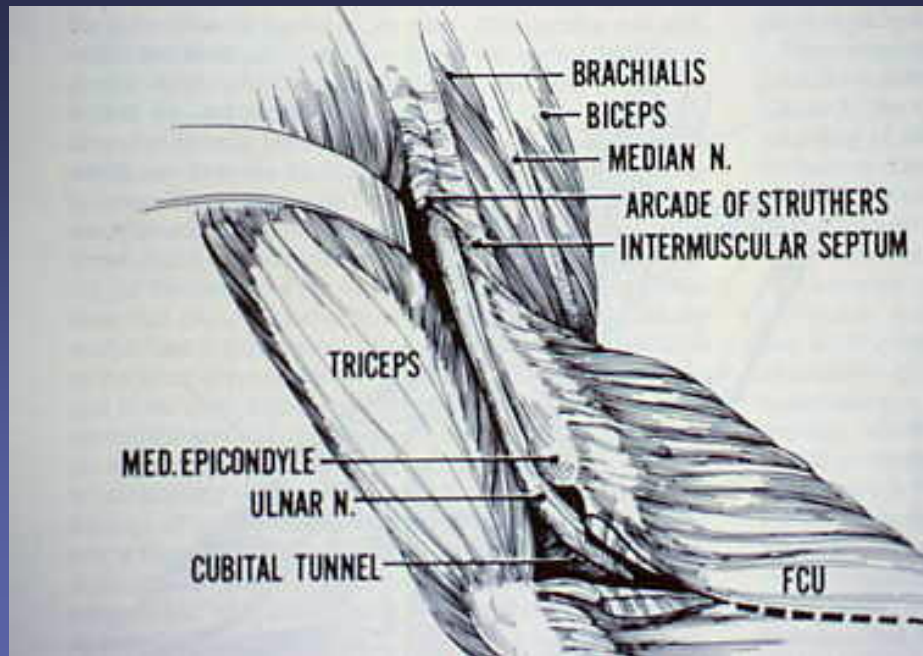
**Intervento
di elezione
nella
lussazione
abituale del
nervo
ulnare**



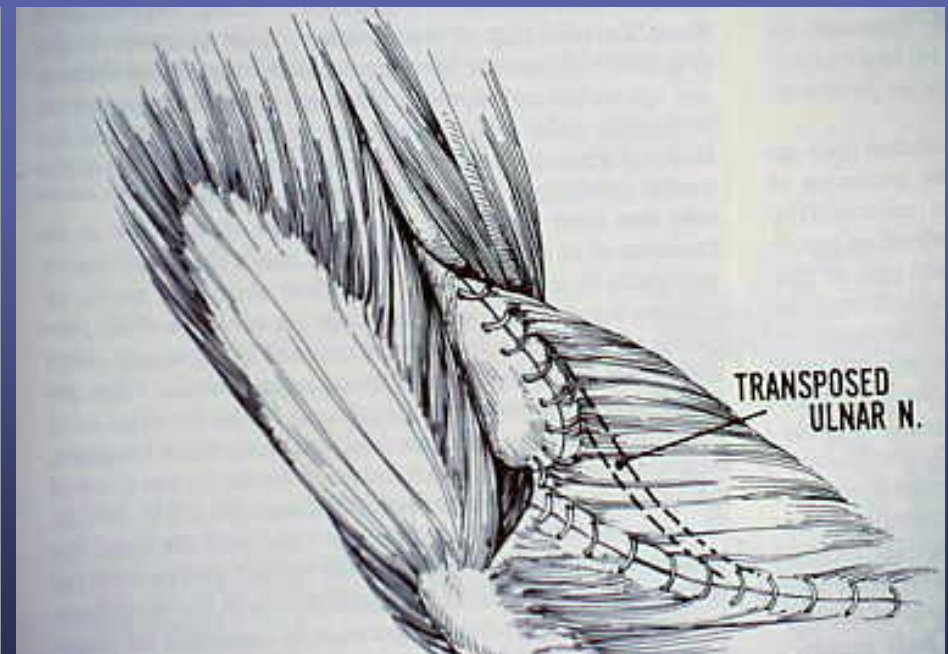
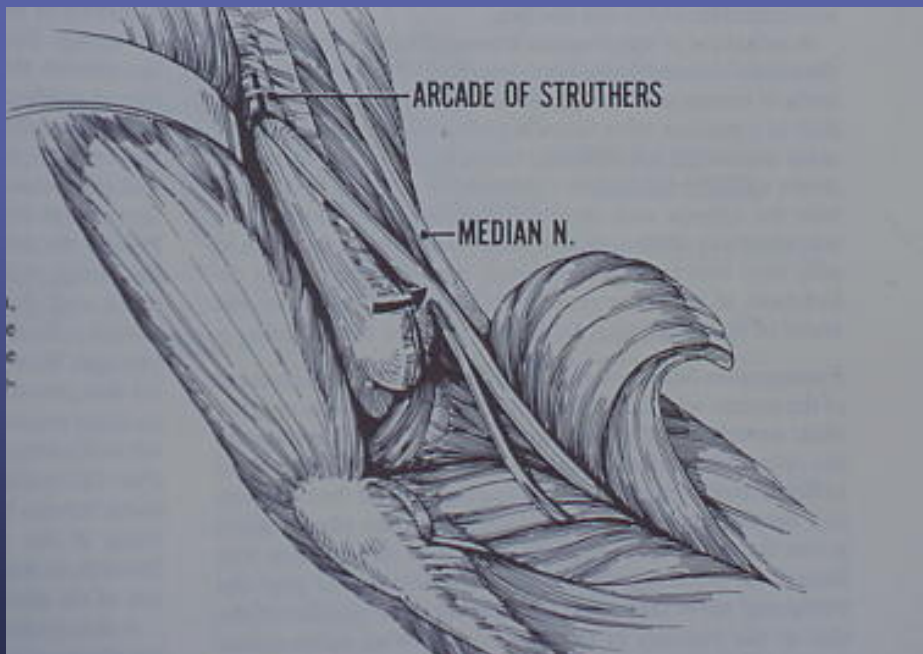
Anteposizione del nervo ulnare Learmonth 1943

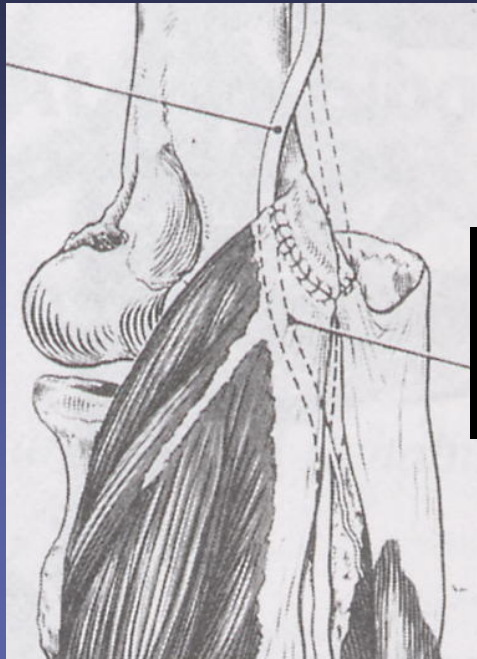


**sottocutan
ea**



Trasposizione sottomuscolare

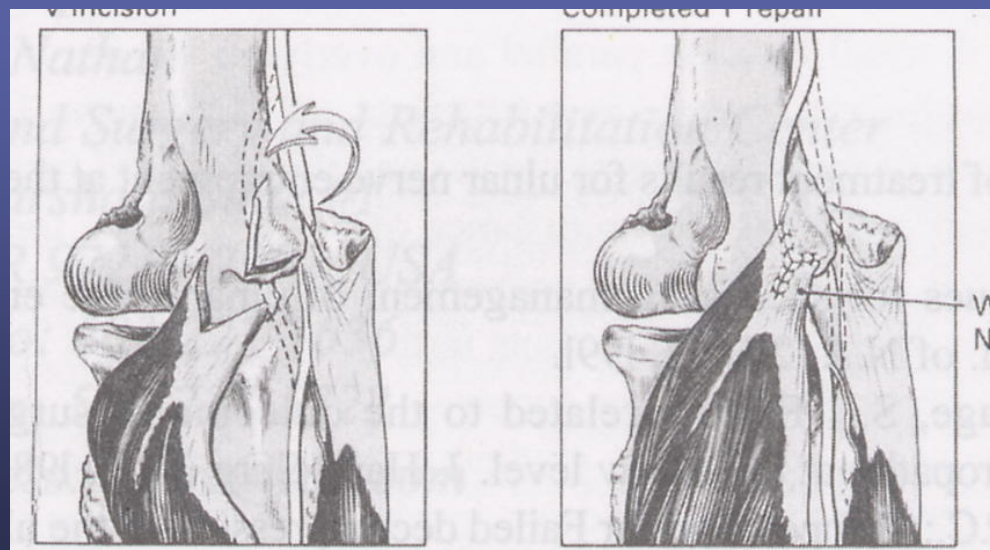




**Trasposizione
sottomuscola
re classica**



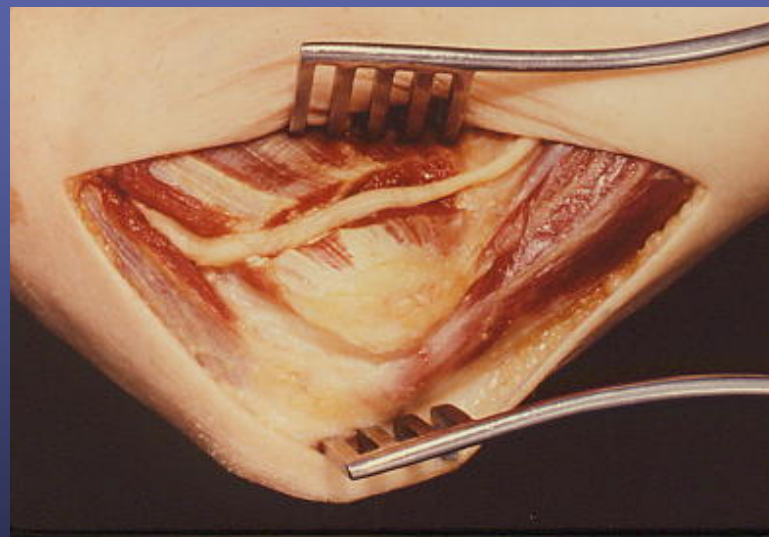
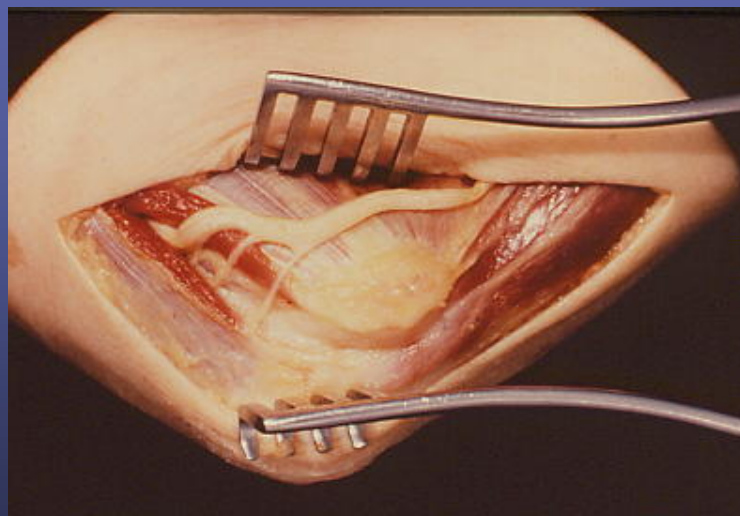
Recidive fino al 50%
Dellon 1989
Gabel 1990
Dellon 1991



**Trasposizione
sottomuscolare
secondo
Sakellarides (IFSSH
2001) *allungamento a
V-Y del tendine di
inserzione dei flessori***



Trasposizione intramuscolare



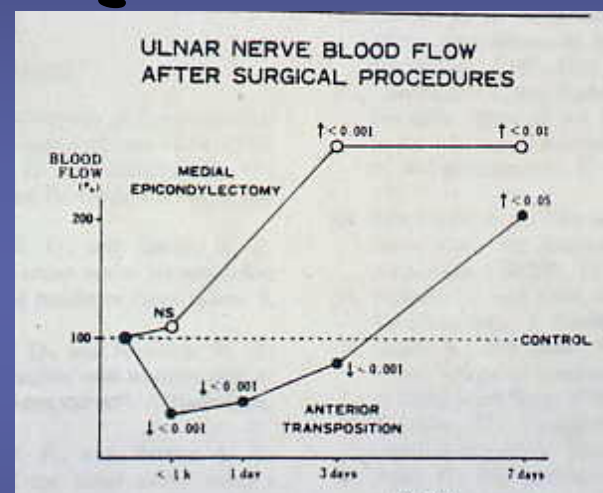
Intervento che determina una estesa devascolarizzazione del nervo, con più difficoltoso recupero nel tempo

The Effect of Surgical Dissection on Regional Blood Flow to the Ulnar Nerve in the Cubital Tunnel

KOSUKE OGATA, M.D.,* PAUL R. MANSKE, M.D.,** AND PEGGY A. LESKER, B.S.**

Regional blood flow to the ulnar nerve within the cubital tunnel of nonhuman primates was determined before and after surgical dissection by use of the hydrogen washout technique. The results indicate that anterior transposition is associated with a significant decrease in regional blood flow to the ulnar nerve.

transposition of the nerve to a subcutaneous^{1,2,3,12,18,22} or a submuscular^{11,14,15,16,2} position. Following the description by Platt in 1926,²² anterior transposition became the standard procedure and is still widely practiced.



Inoltre possibilità di

* Stiramento intraoperatorio rami FUC e FP 4°5°

* fibrosi perineurale postoperatoria con gravissime difficoltà nei reinterventi

**Anche i suoi difensori
percepiscono questo problema e
cercano nuove strade al fine di
tutelare al meglio la circolazione
perineurale**

La trasposizione microchirurgica del nervo ulnare
e del suo peduncolo vascolare nella sindrome
compressivo-paretica canalicolare del gomito

Microsurgical transposition of the ulnar nerve and its
vascular bundle in the treatment of entrapment syndrome
at the elbow

MESSINA A.

Centro di Chirurgia della Mano, Centro Traumatologico Ortopedico, Torino, primario: A. Messina

Comunicazione al XIV Congresso della Società Italiana di Microchirurgia, Torino, 7 novembre 1991

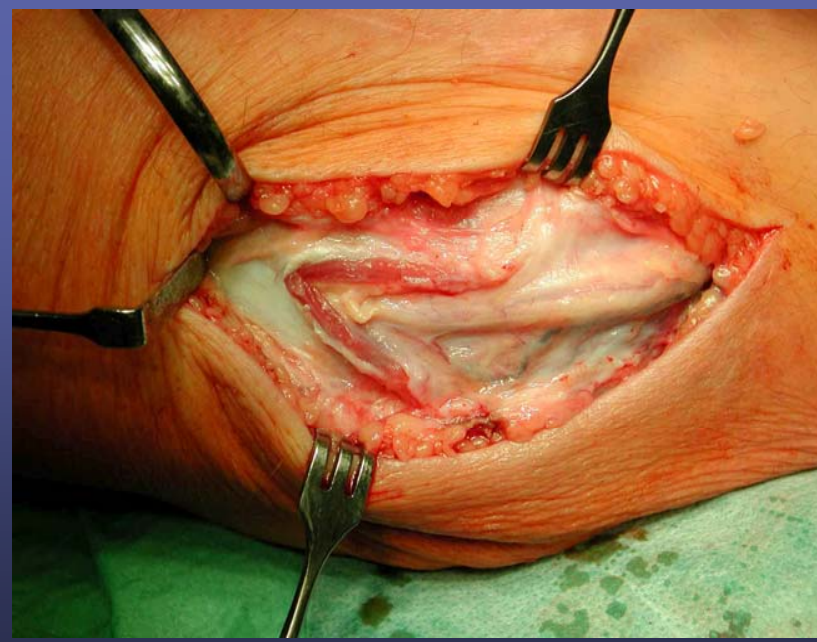
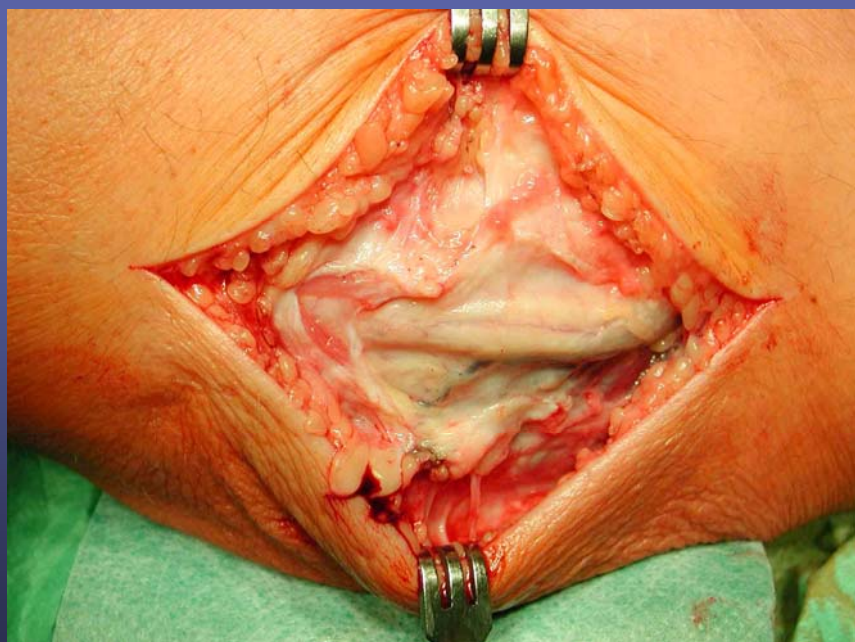
Parole chiave: trasposizione sottomuscolare e intramuscolare microchirurgica del nervo ulnare e del suo
peduncolo vascolo-nervoso nella sindrome compressiva canalicolare al gomito - tecnica microchirurgica della
trasposizione del nervo ulnare e del suo peduncolo vascolare nella sindrome di entrapment del gomito.

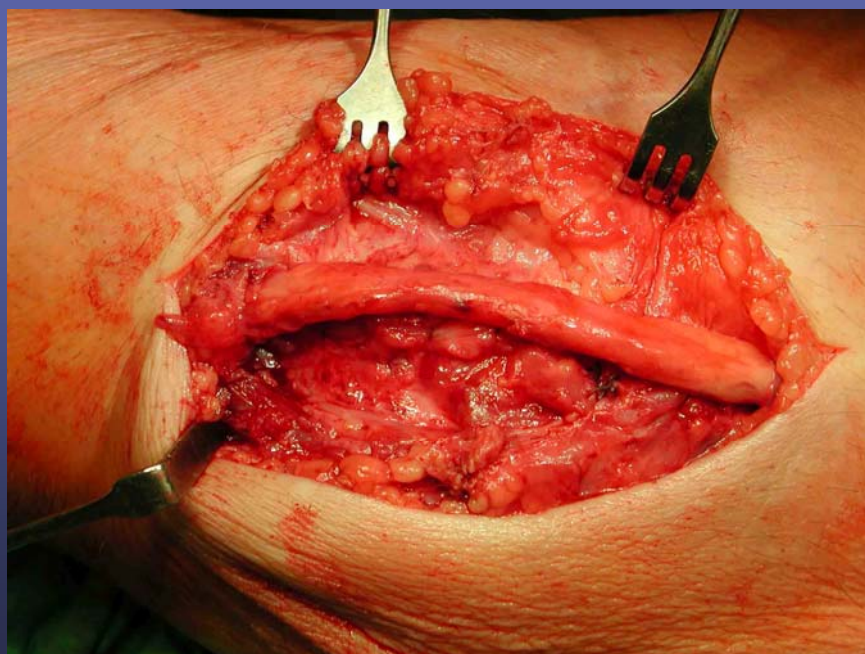
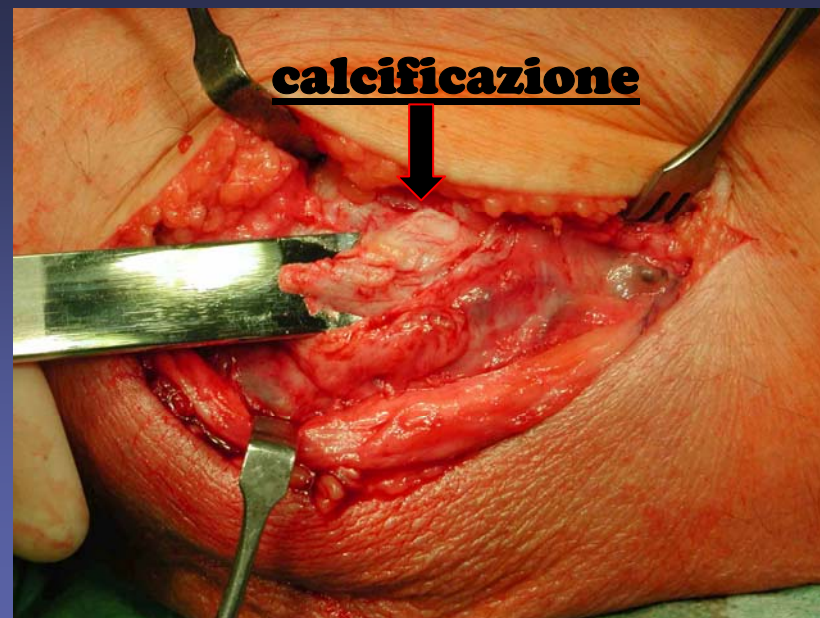
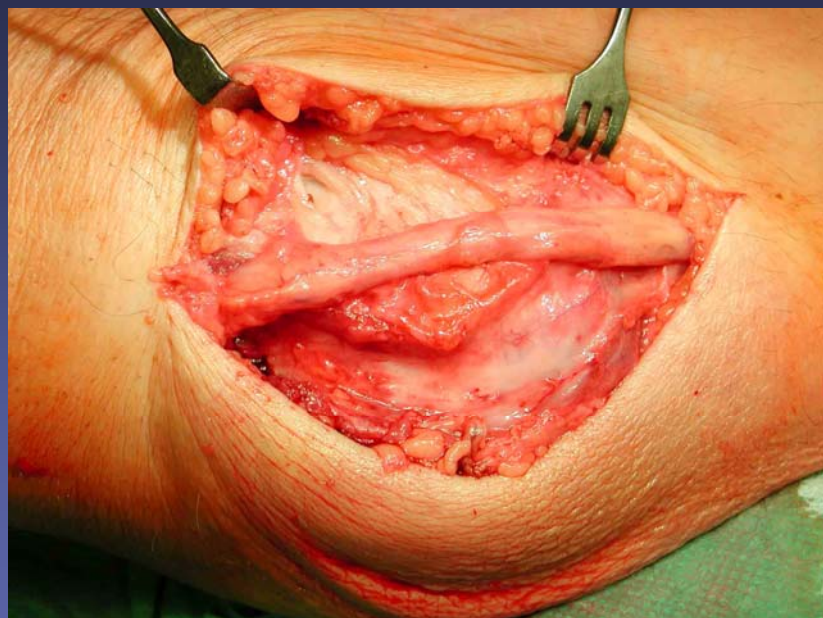
Intervento da abbandonare?

Intervento a nostro avviso da utilizzare solo in casi selezionati come

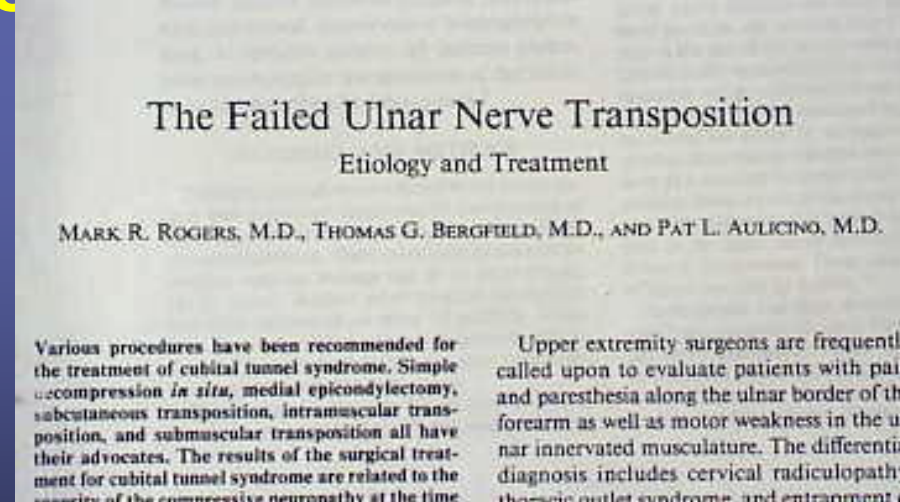
- 1. Grave artrosi ed incarcerationamento del nervo**
- 2. Nelle rigidità di gomito**
- 3. Nei reinterventi**



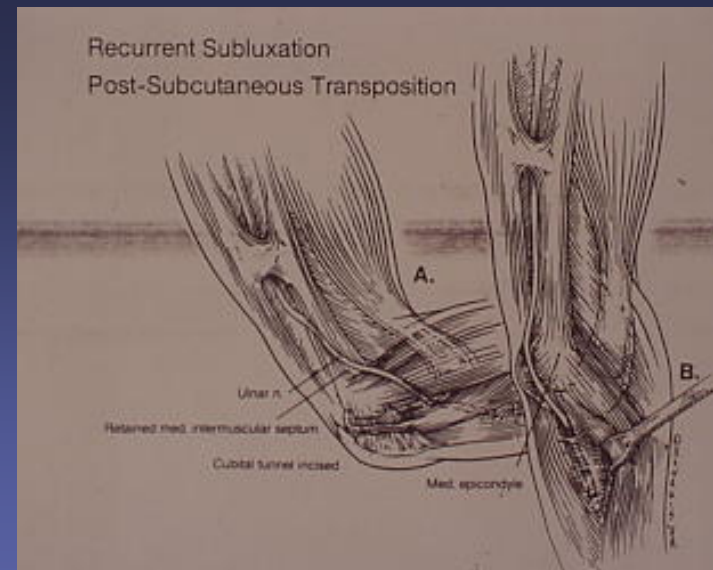
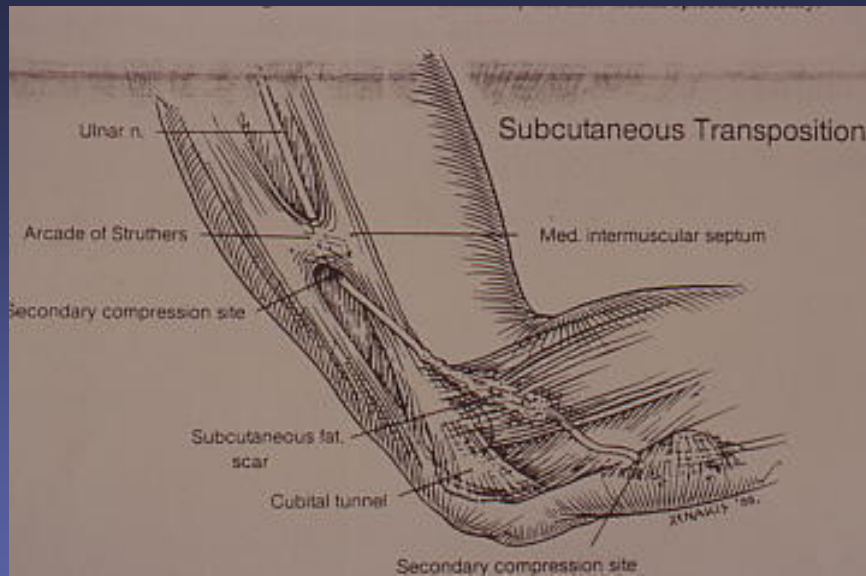




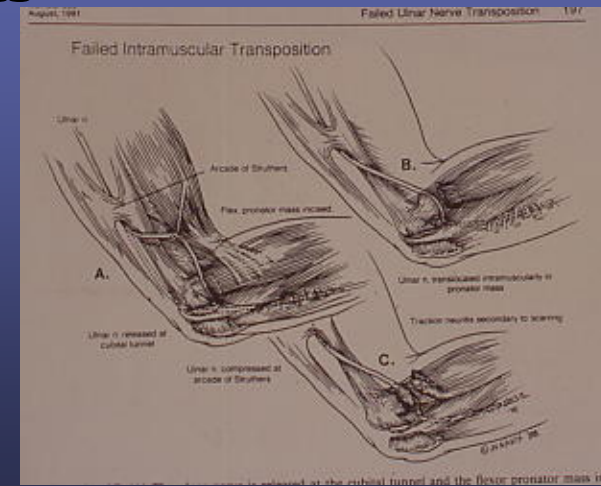
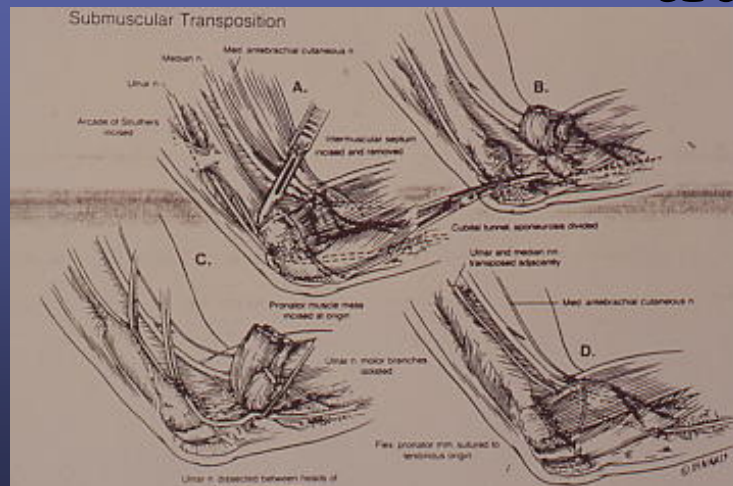
**Tutti gli interventi sono esposti
all'insuccesso, non esiste
l'intervento perfetto e che si adatti
ad ogni caso !
L'intervento va adeguato al paziente
e non il paziente all'intervento**



**Clin Orthop 269, 193-200,
1991**

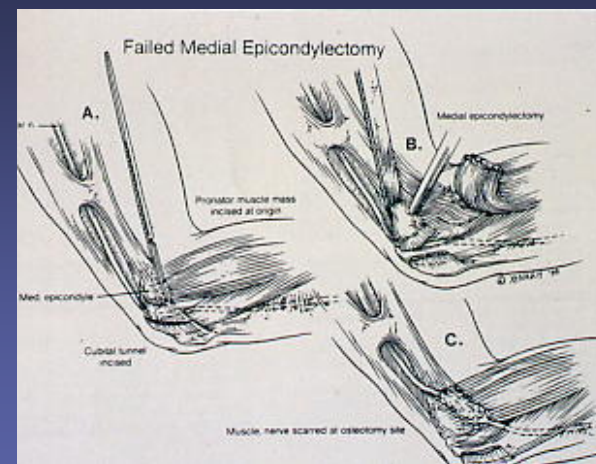


Motivi di insuccesso nelle trasposizioni



Motivi di insuccesso nell' epicondilectomia

- a. Aderenze epitroclea**
- b. Lussazione e fibrosi del
nervo**



Motivi di insuccesso nella neurolisi semplice

- a. Errore di indicazione**
- b. Mancata apertura del tunnel**

**Per tutti gli interventi attenzione alla fibrosi postoperatoria e quindi
accurata emostasi**

2° clinica Ortopedica Università di Pisa

1984-1996

60 casi operati

Revisionati 50 casi (27 sin 23 dx) (33 M 17 F)

Età media 49.7 anni (16-85 aa)

Follow-up medio 73.6 mesi (10-140 mesi)

ETIOPATOGENESI

	casi	%
Idiopatica	20	40 %
Fratture,lussazioni	13	26 %
Artrosi, calcificazioni	8	16 %
Post-traumatica	6	12 %
Tumori, cisti, M. Gruber	3	6 %

**Tempo medio intercorso tra
comparsa dei sintomi e diagnosi**

=

21,6 mesi

(range 3 – 84 mesi)

**20% dei pazienti con Diabete e/o
Insufficienza renale**

Durata della sintomatologia

Grado 1

11,8 mesi

**Grado 2
mesi**

19,1

**Grado 3
mesi**

29,2

Mc Gowan's grading scale

	N° casi	%
Grado 1	10	20%
Grado 2	22	44%
Grado 3	18	36%

VALUTAZIONE

- **Clinica soggettiva ed oggettiva**
- **Elettrofisiologica con EMG e VdC pre- e post-operatoria**

Criteri di valutazione del risultato

Ottimo : normale sensibilità, validità, trofismo

Buono : saltuari disturbi parestesici

Mediocre : ipomiotrofia, forza 4-5, ipo-
parestesie, miglioramento di un
solo grado sec. McGowan

Scarso : sintomatologia invariata o
peggiorata

RISULTATI

- **Ottimo** **60%**
- **Buono** **14%**
- **Mediocre** **16%**
- **Cattivo** **10%**

Prevalenza nella casistica di gradi 2 e 3 (80% dei casi)

Prevalenza di casi inveterati, con insorgenza superiore a 9 mesi

20% di Diabetici e Dializzati per IRC

Ottimi e Buoni

King

83,3%

(33% pz di grado 3)

Osborne

60%

(45% pz grado 3)

Difficile un confronto tra i due interventi per difformità della popolazione

Epicondilectomia mediale di King

Salutario dolore

20%

Instabilità leg. Coll. Ulnare

0%

Neurolisi semplice di Osborne

Salutario dolore

23,3%

**Durata e gravità della sintomatologia
proporzionali allo scadimento del
risultato**

	<u>Ottimi e buoni sintomi</u>	<u>Durata dei</u>
Grado 1	90,9 %	11,7 mesi
Grado 2	86,3 %	19,2 mesi
Grado 3	55,5%	28,3 mesi

30 casi con EMG e VdC pre e post-operatoria

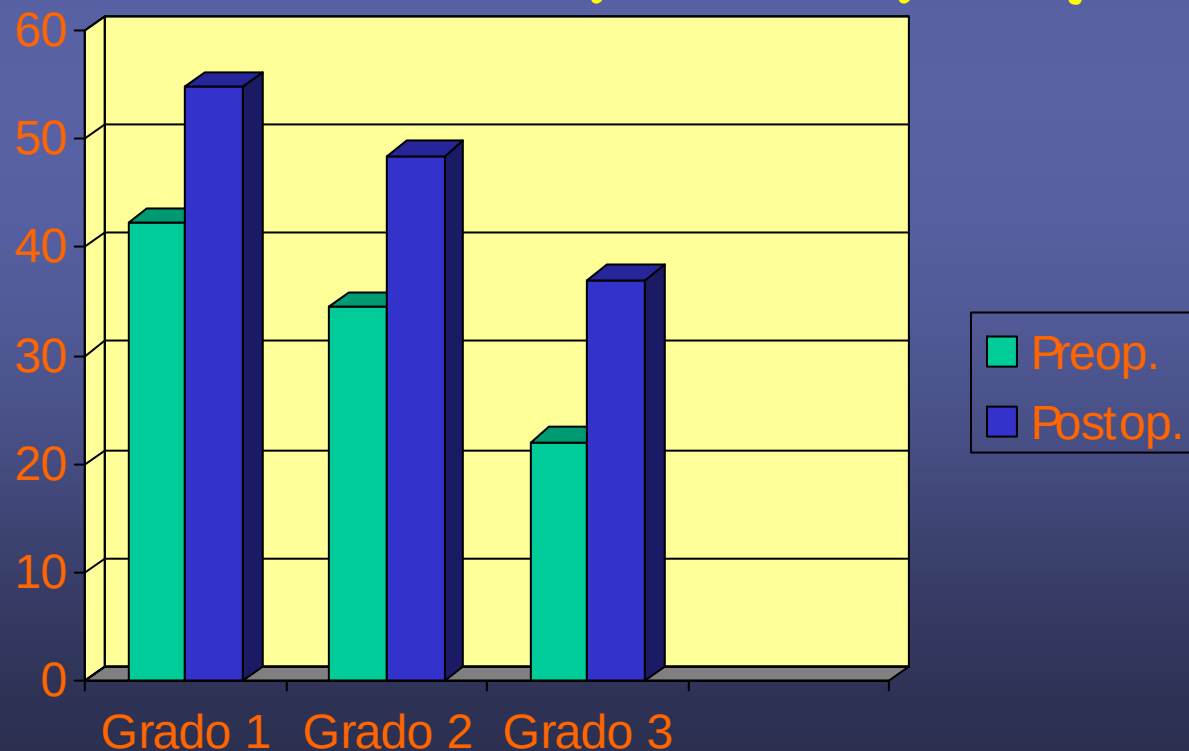
Incremento medio postoperatorio

Ottimi	17,25 m / sec
Buoni	11,92 m / sec
Mediocri	15,34 m / sec
Cattivi	-

V.d.C. PRE e POST-OPERATORIO(v.n. 50

Pre **Postop.**(medio)
m/sec)

Grado 1	42,3	54,8 m/sec
Grado 2	34,5	48,4 m/sec
Grado 3	22,1	37,0 m/sec



In conclusione riteniamo che non esista un solo intervento ma che la strategia chirurgica vada adattata al quadro anatomo-patologico che incontriamo, in accordo con diversi autori

Childress 1975	Adelaar 1984
Le Roux 1990	Alnot 1992

Quale che sia l'intervento che si debba adottare esso deve soddisfare questi requisiti :

Decomprimere il nervo

Ampliare il canale

Rispettare la vascolarizzazione del nervo ed evitare fibrosi

Accorciare il percorso del nervo e detenderlo

Rispettare l'inserzione LLI e mm. epitrocleari