

# **SOFT TISSUE COVERAGE OF THE UPPER LIMB**

**PEDICLED MUSCLE and  
FASCIO-CUTANEOUS FLAPS**

**AC Masquelet Mars 2007**

**DIU chirurgie de la Main**

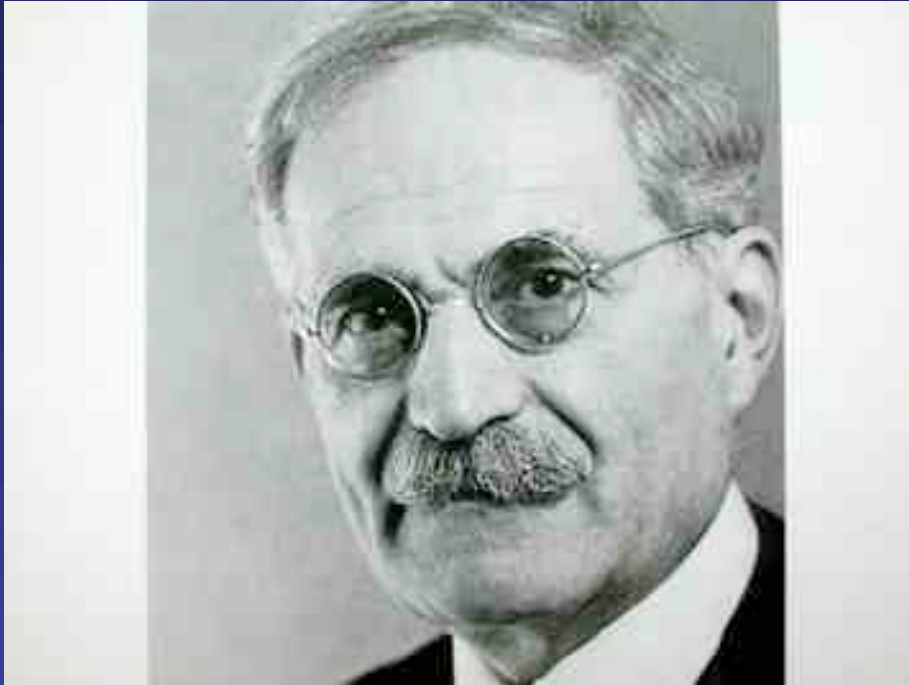
**Présenté par M. Beustes-Stefanelli**

# HISTORIC OF FLAPS

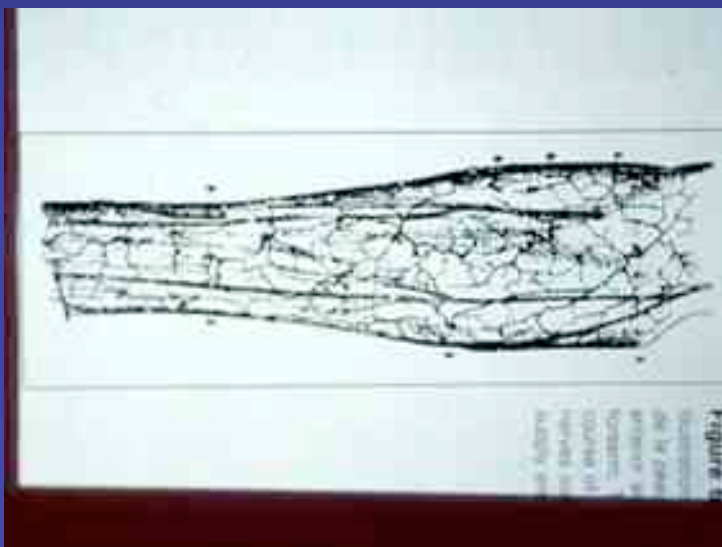


- WOOD (1863)
- TANSINI (1892)
- ESSER (1917)
  
- LITTLER (1953)
- Mc GREGOR (1972)
- OLIVARI (1976)

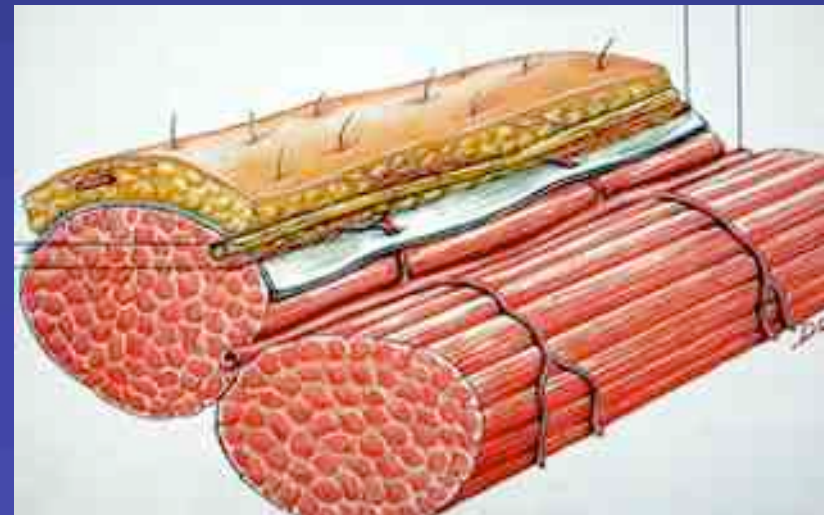
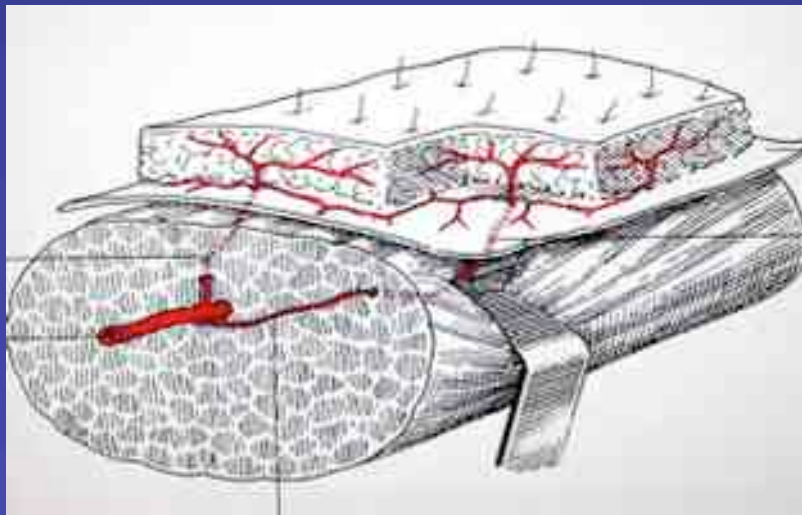
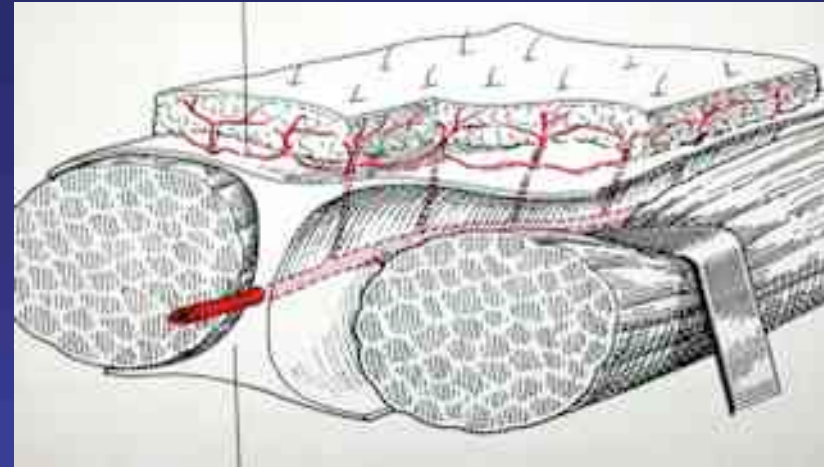
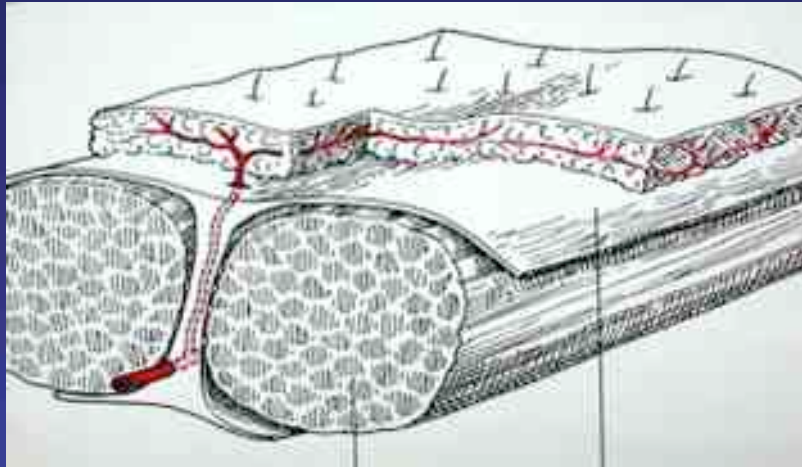
# SKIN VASCULARISATION



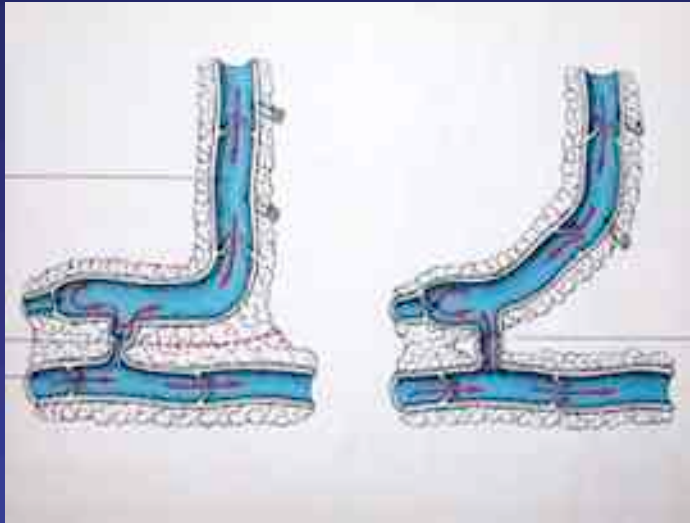
- MICHEL SALMON  
- « Les Arteres de la Peau » (1936)



# SKIN AND FLAP VASCULARISATION

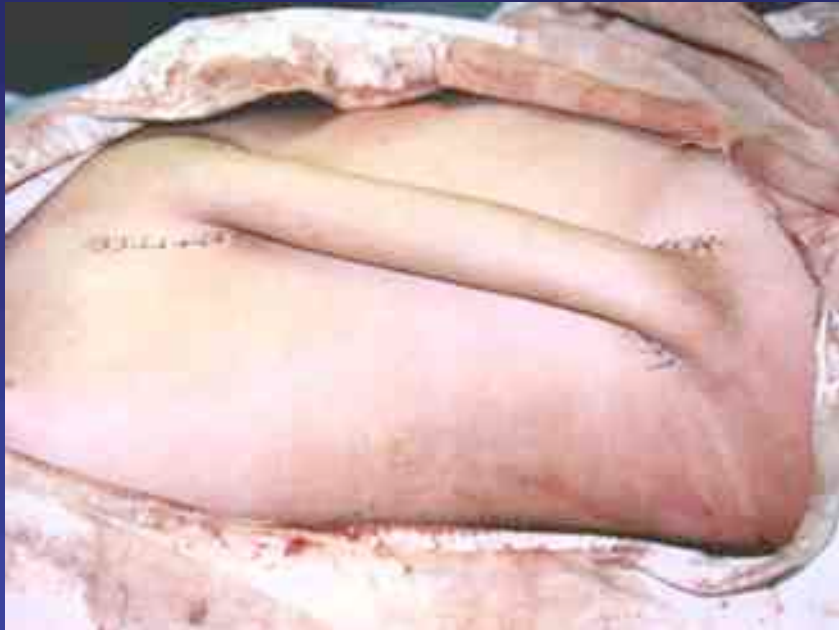


# ADVANCES 1980-2000



- **DISTALLY-BASED FLAPS (1981)**
- ANATOMY
- **VENO and NEURO CUTANEOUS FLAP**
- ADIPO-FASCIAL PEDICLED FLAPS
- COMPOSITE FLAPS

# REPAIR OF THE UPPER LIMB

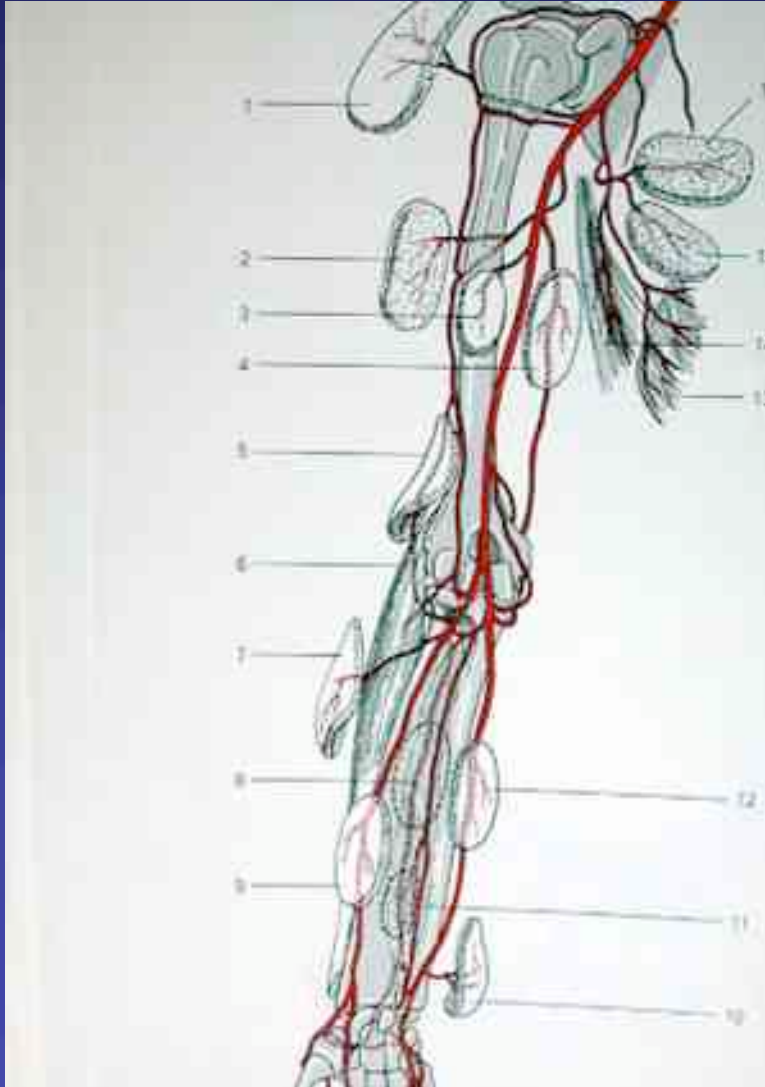


THE PAST

# SOFT TISSUE COVERAGE and UPPER LIMB

- FEW INDICATIONS OF FREE FLAPS
- NUMEROUS POSSIBILITIES OF PEDICLED FLAPS
- JOINTS MOTION and TENDONS COURSE require SKIN FLAPS and FASCIO-CUTANEOUS FLAPS

# PEDICLED FLAPS for the UPPER LIMB



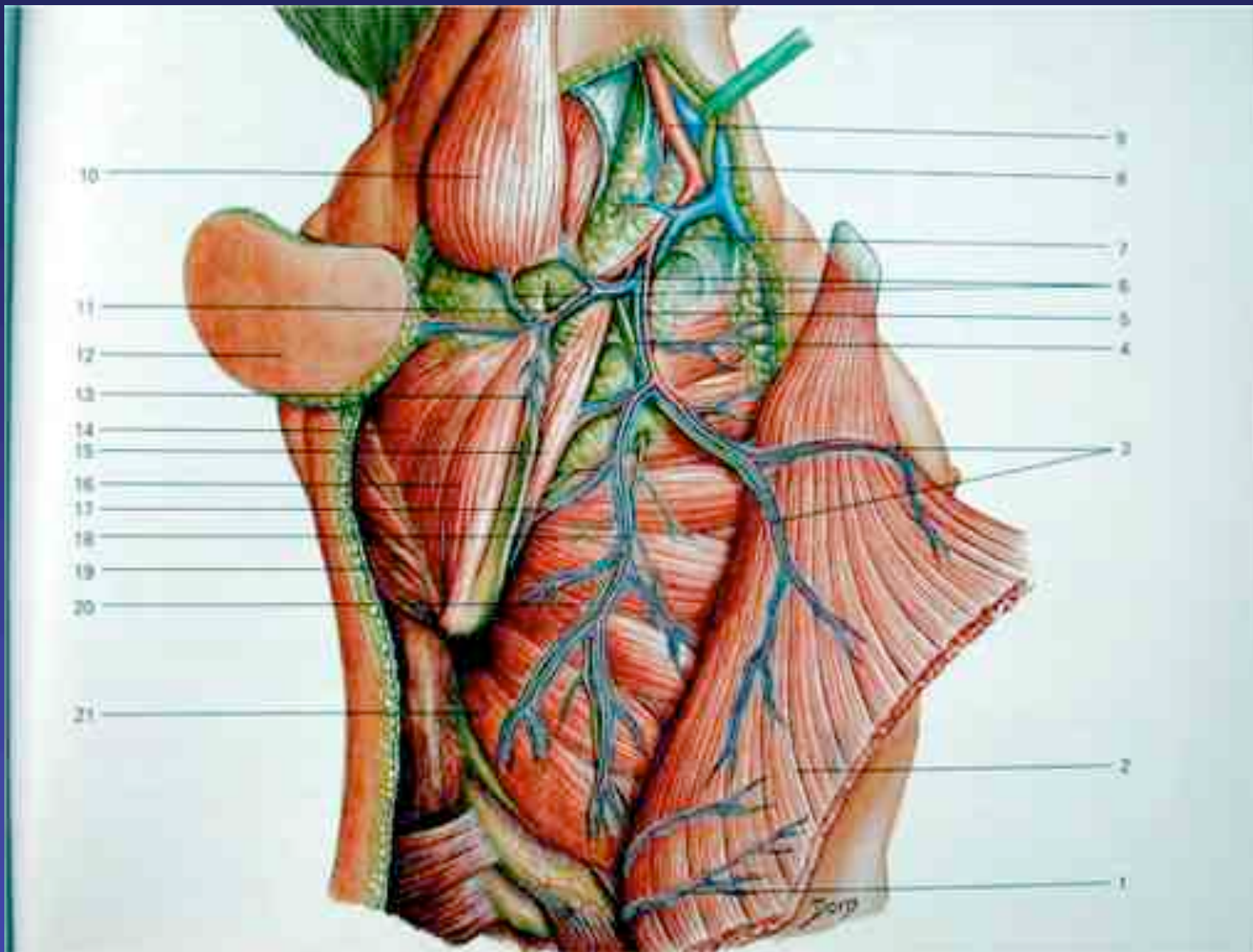
- THE « TREE » OF THE FLAPS FOR THE UPPER LIMB



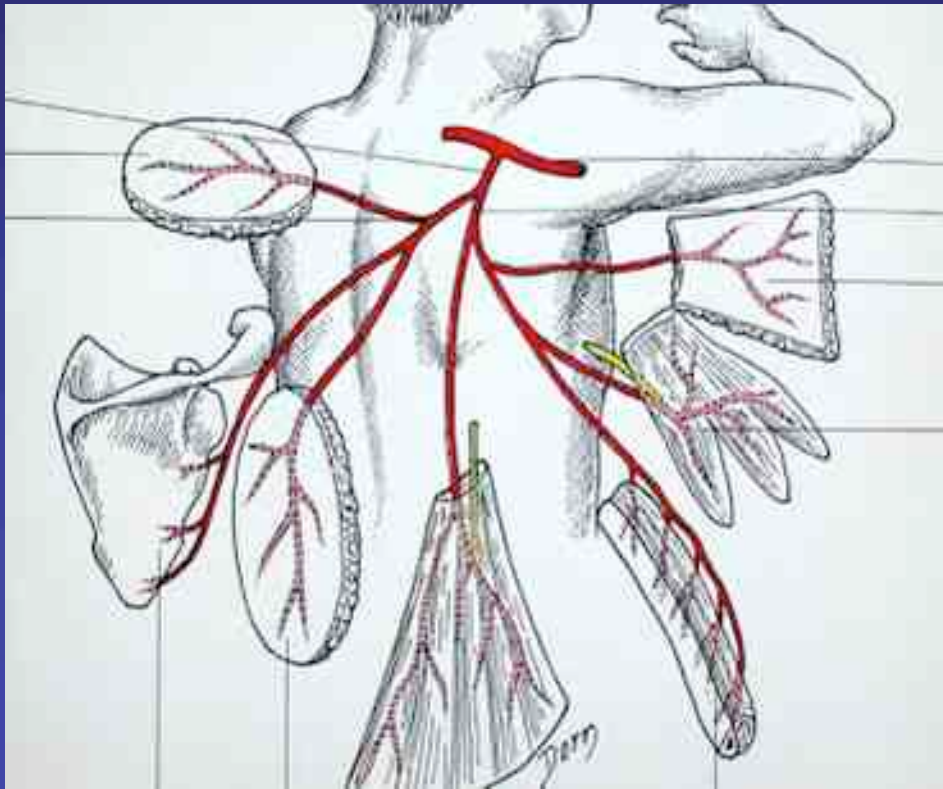
# SHOULDER GIRDLE

- LATISSIMUS DORSI FLAP
- PECTORALIS FLAPS
- SCAPULAR FLAPS
- POSTERIOR ARM FLAP

# ANATOMY of the SHOULDER GIRDLE

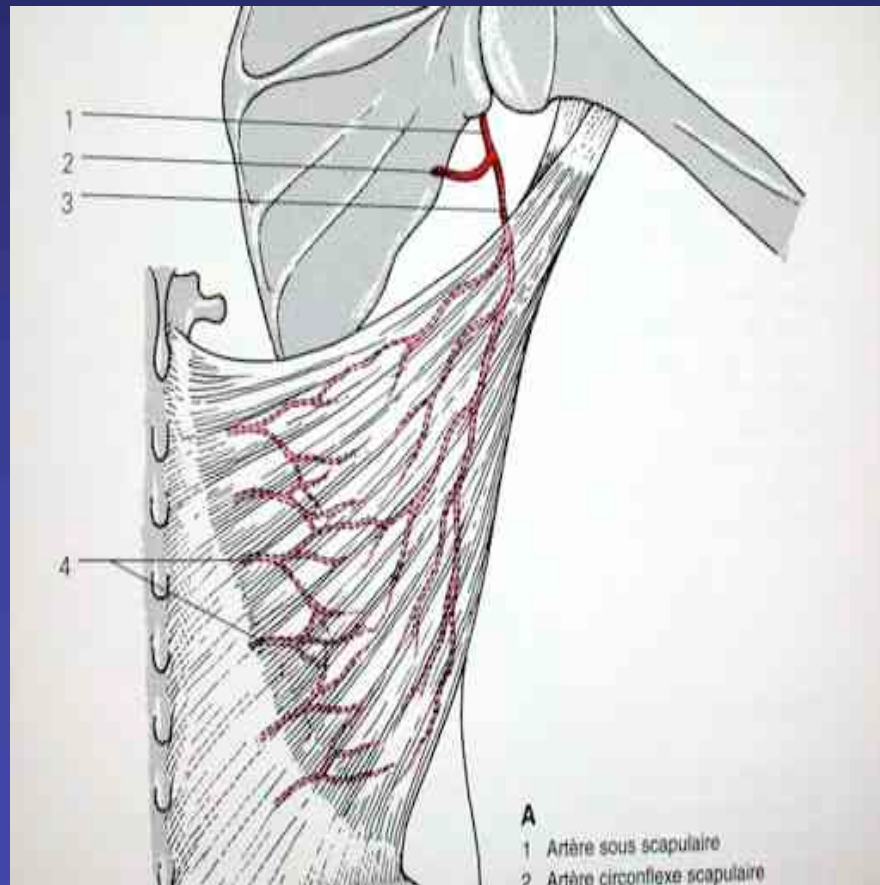


# THE « KING » DONOR SITE FOR ISOLATED, ASSOCIATED AND COMPOUND FLAPS



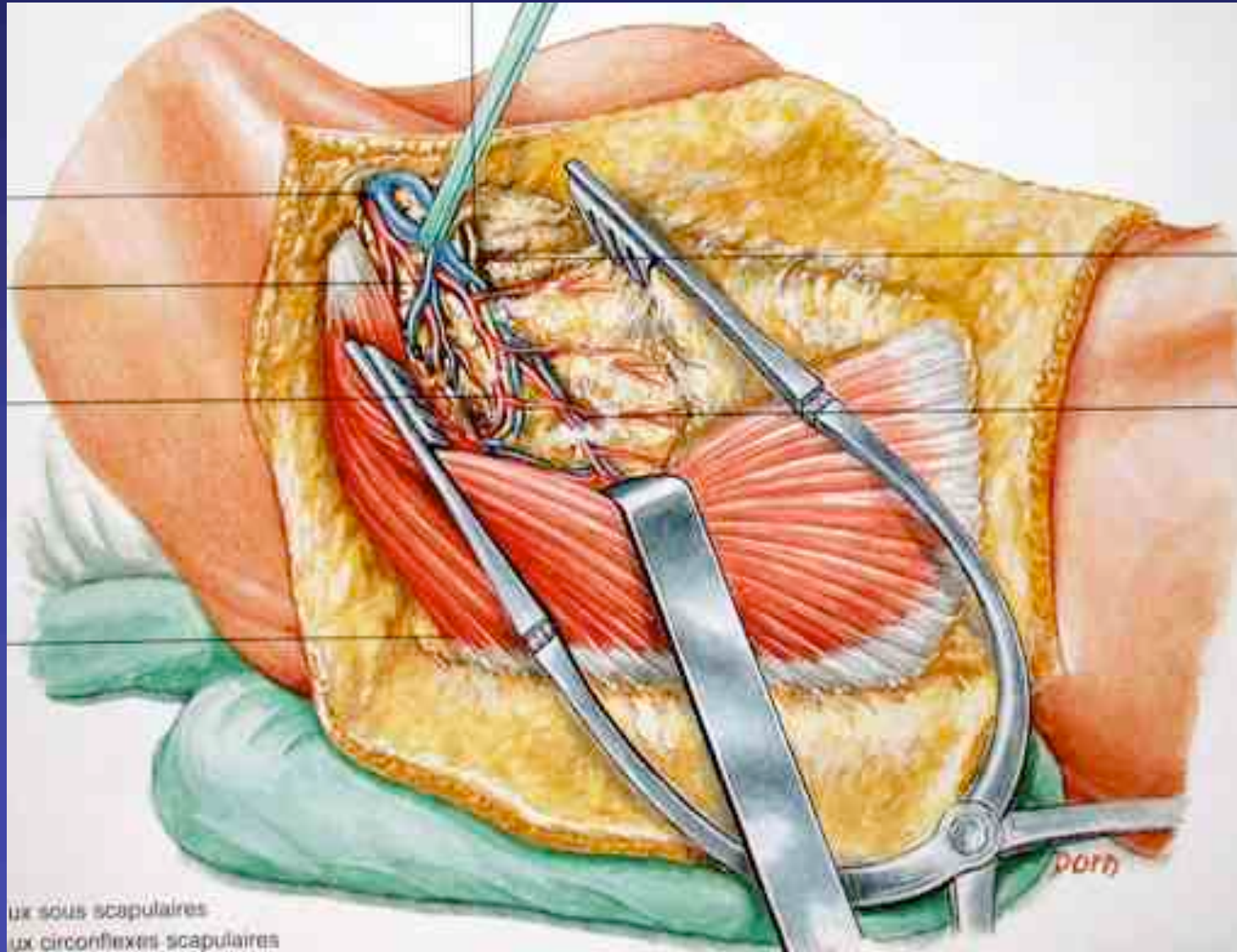
- BONE
- SKIN
- FASCIA
- MUSCLE

# LATISSIMUS DORSI: THE « KING »

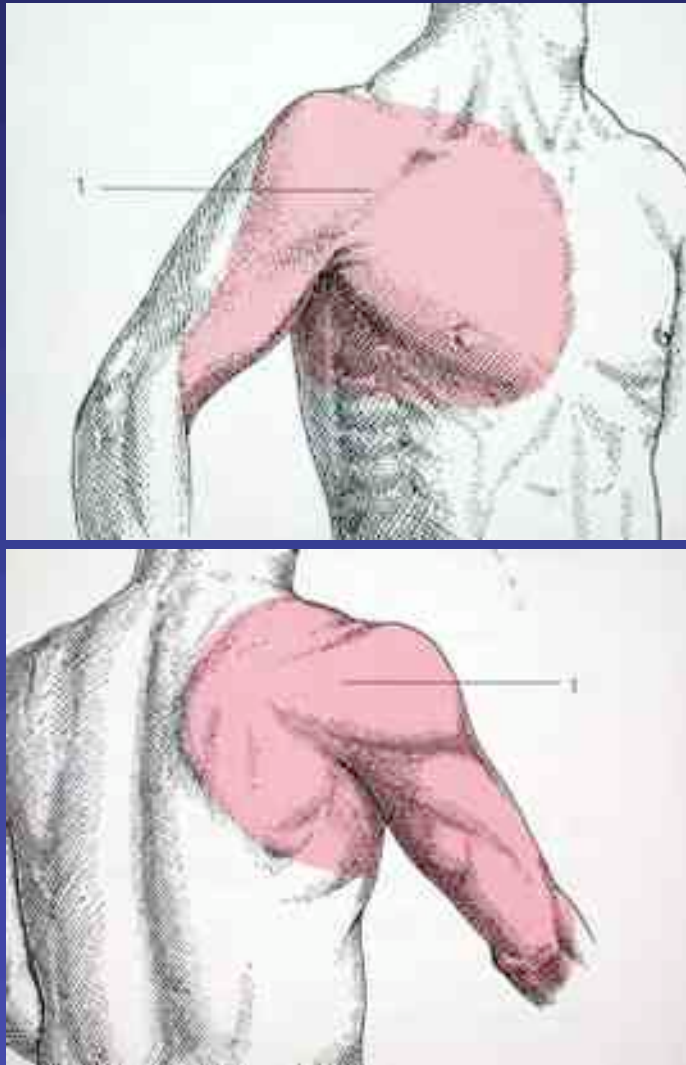


VASCULARISATION  
TYPE V ACCORDING  
THE CLASSIFICATION  
OF **MATHES AND  
NAHAI**

# LATISSIMUS DORSI : TECHNIQUE



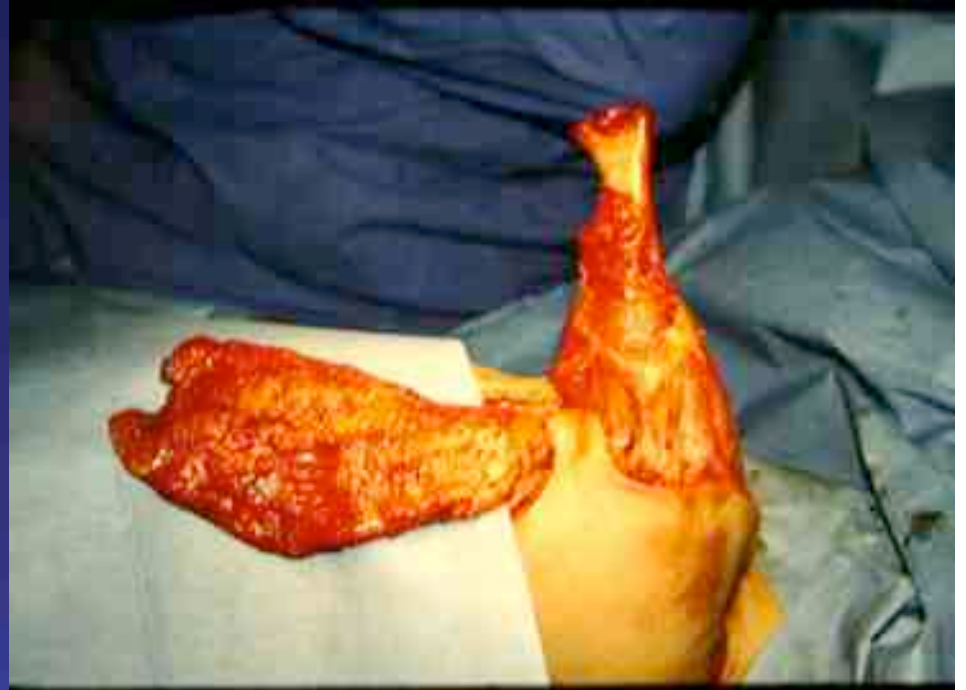
# LATISSIMUS DORSI



- ARC OF ROTATION OF THE MUSCLE

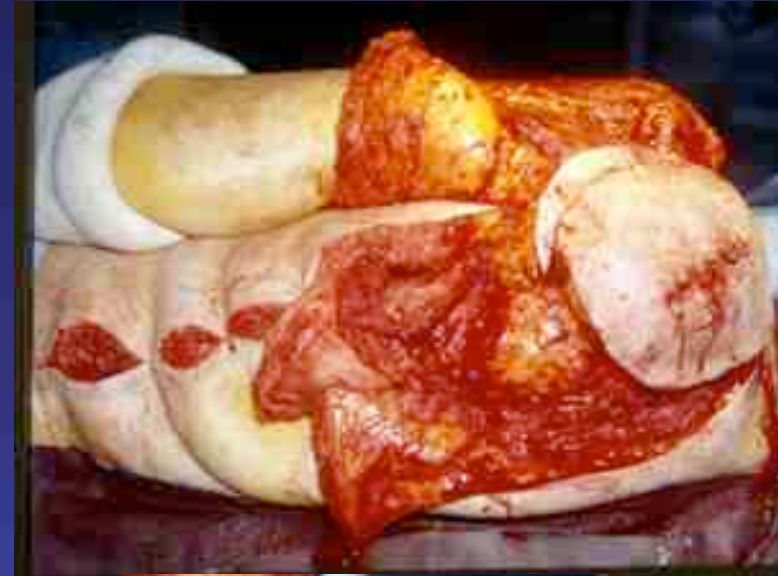
# UPROOTED LEFT UPPER LIMB



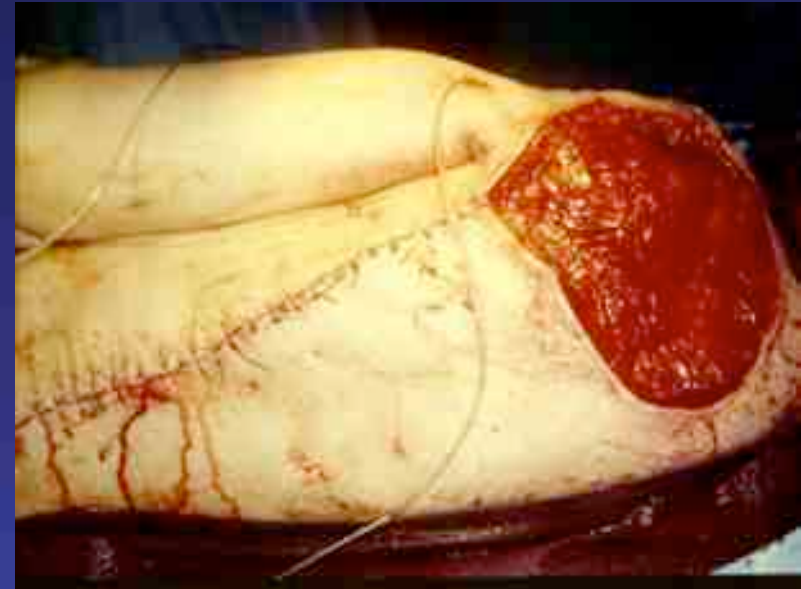




# TIKHOFF PROCEDURE



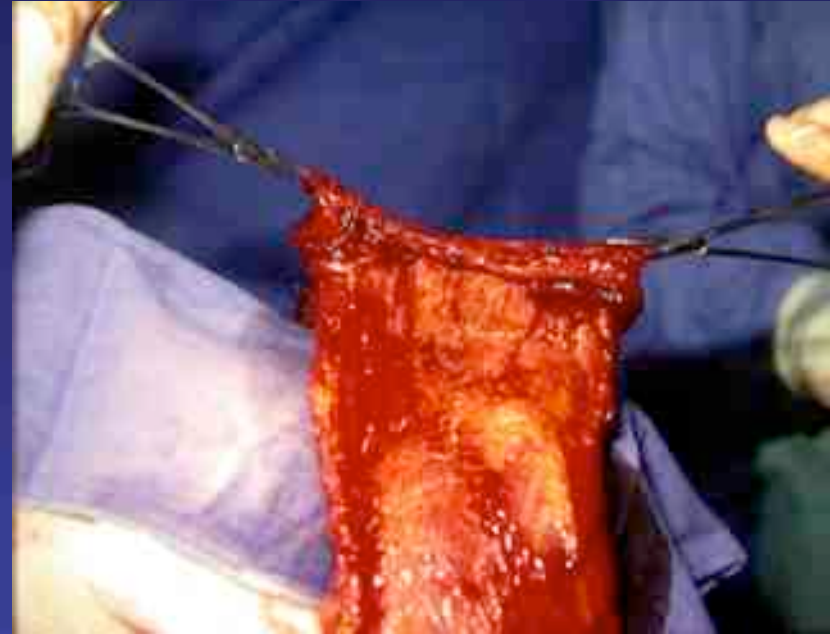
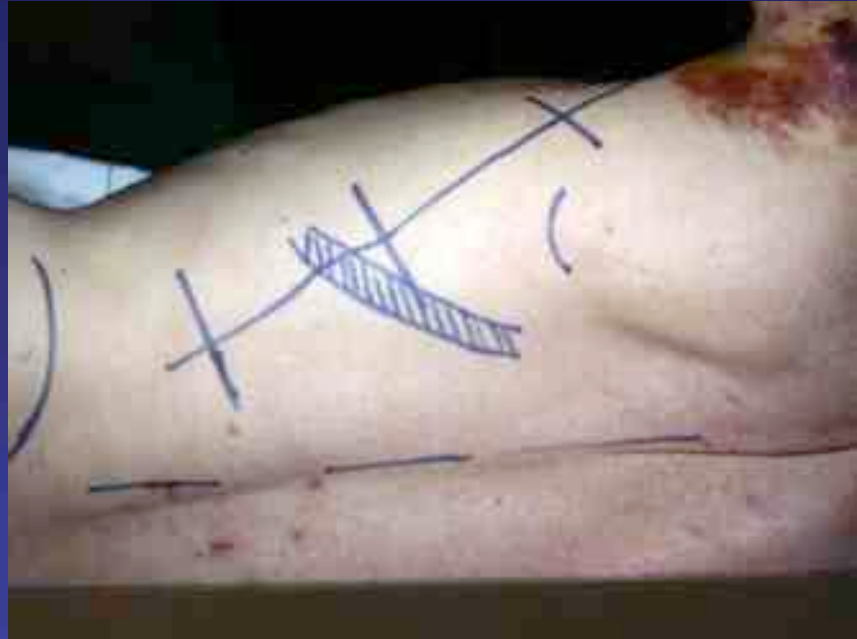
# TIKHOFF PROCEDURE



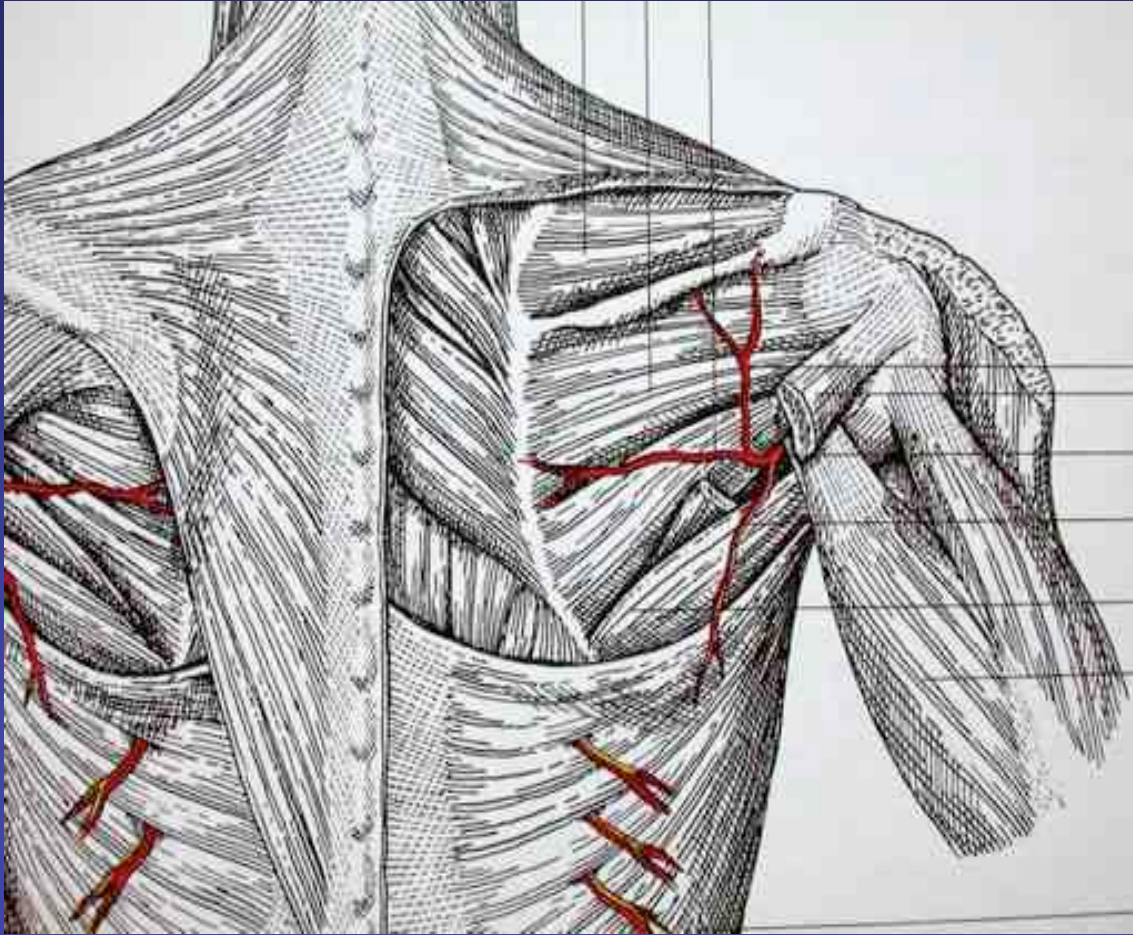
# COMPOUND DEFECT



# COMPOUND TRANSFER



# SCAPULAR FLAPS : ANATOMY

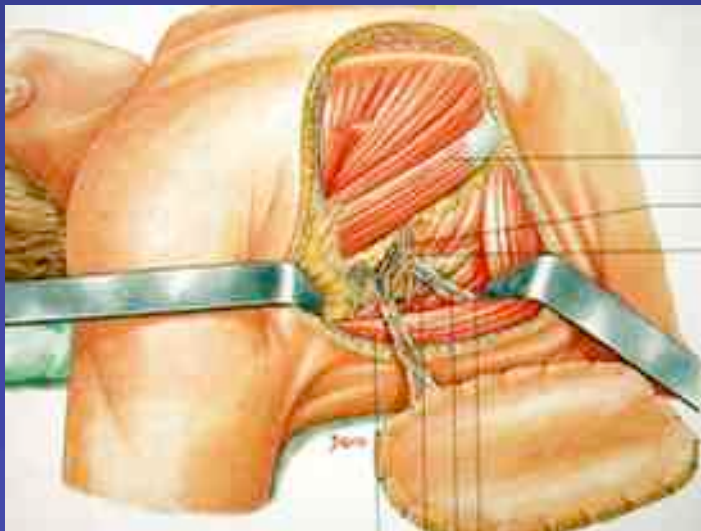


- POSTERIOR  
CIRCONFLEX  
ARTERY

# SCAPULAR FLAPS: TECHNIQUE



- INDICATIONS:
  - REPAIR OF THE ARMPIT



# PARASCAPULAR FLAP

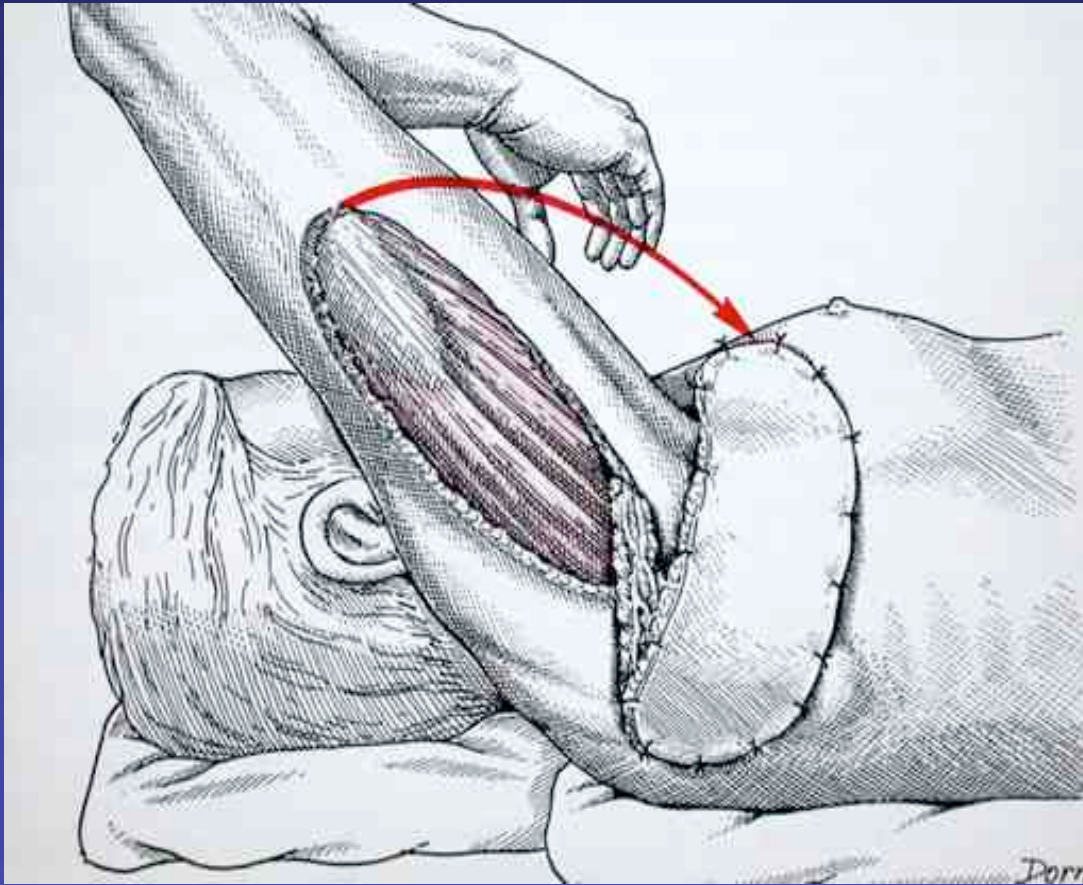


# SCAPULAR FLAP





# POSTERIOR ARM FLAP

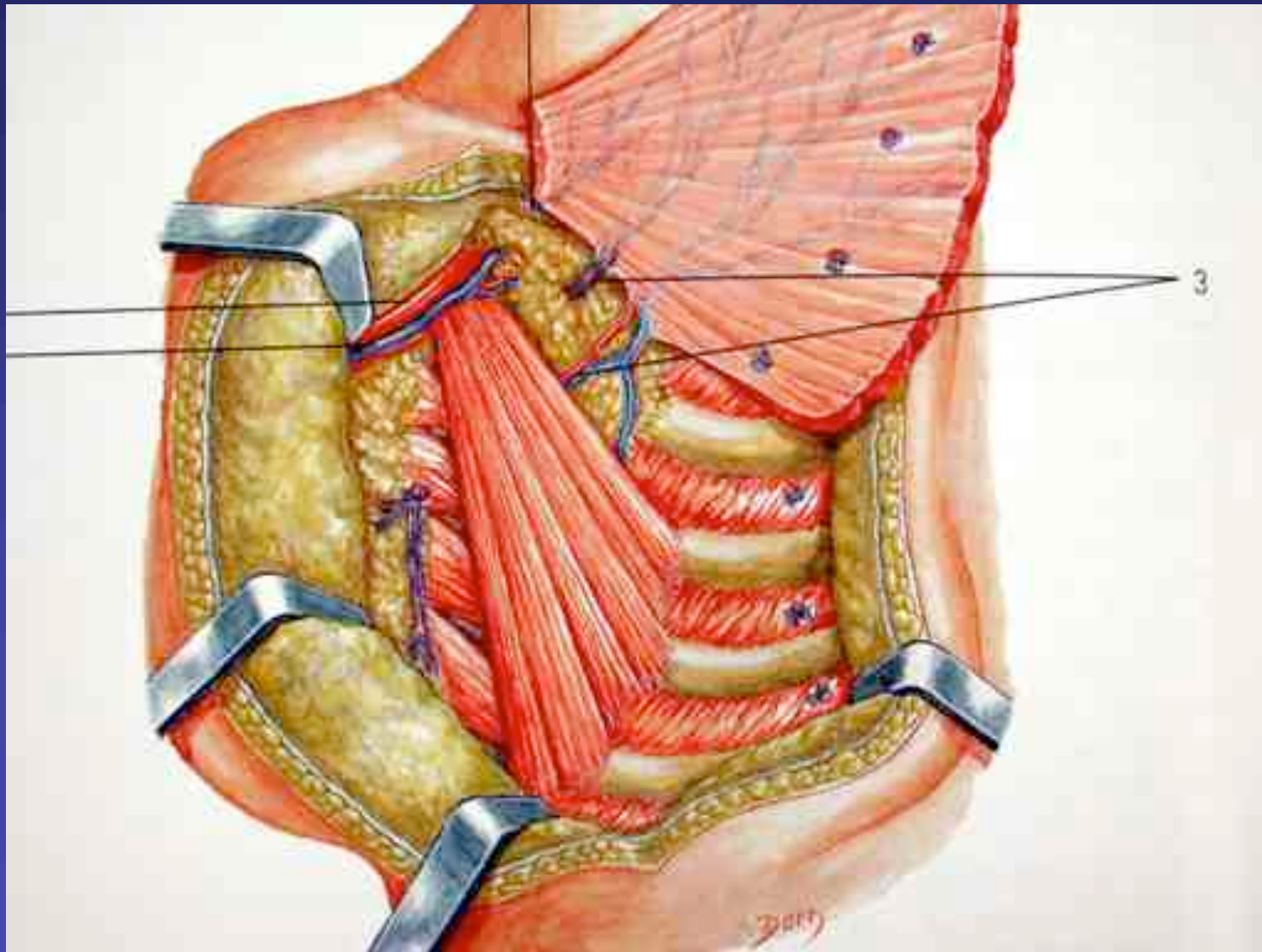


SKIN ARTERIAL  
BRANCH FROM  
VASTUS MEDIALIS

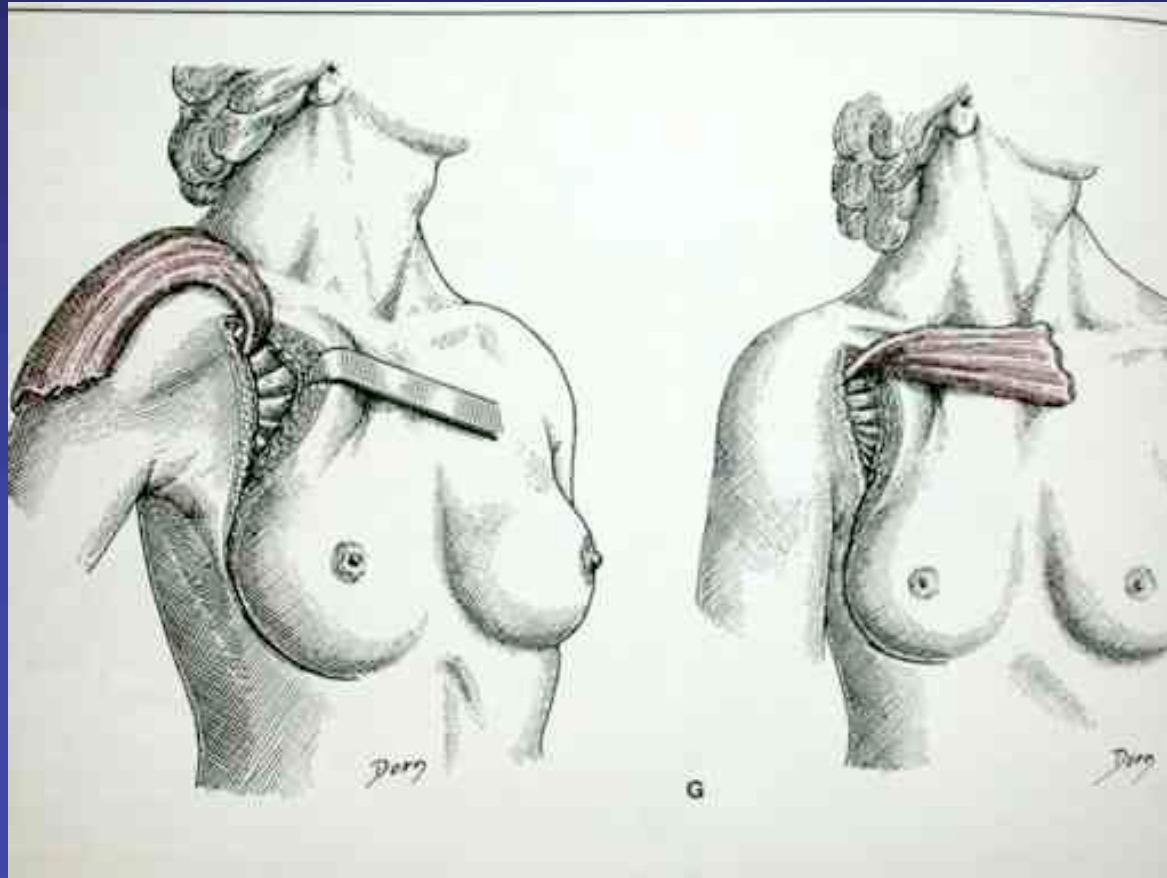
# POSTERIOR ARM FLAP



# PECTORALIS MUSCLES FLAPS



# PECTORALIS MINOR



ARC OF  
ROTATION

# PECTORALIS MINOR



# PECTORALIS MINOR



# COVERAGE OF THE ELBOW

- LATERAL ARM FLAP
- BRACHIO-RADIALIS
- POSTERIOR INTEROSSEOUS FLAP
- LATISSIMUS DORSI FLAP
- ANTECUBITAL FLAP

# ANTECUBITAL FLAP





# LATISSIMUS DORSI FLAP



# LATISSIMUS DORSI FLAP





# CHINESE FLAPS

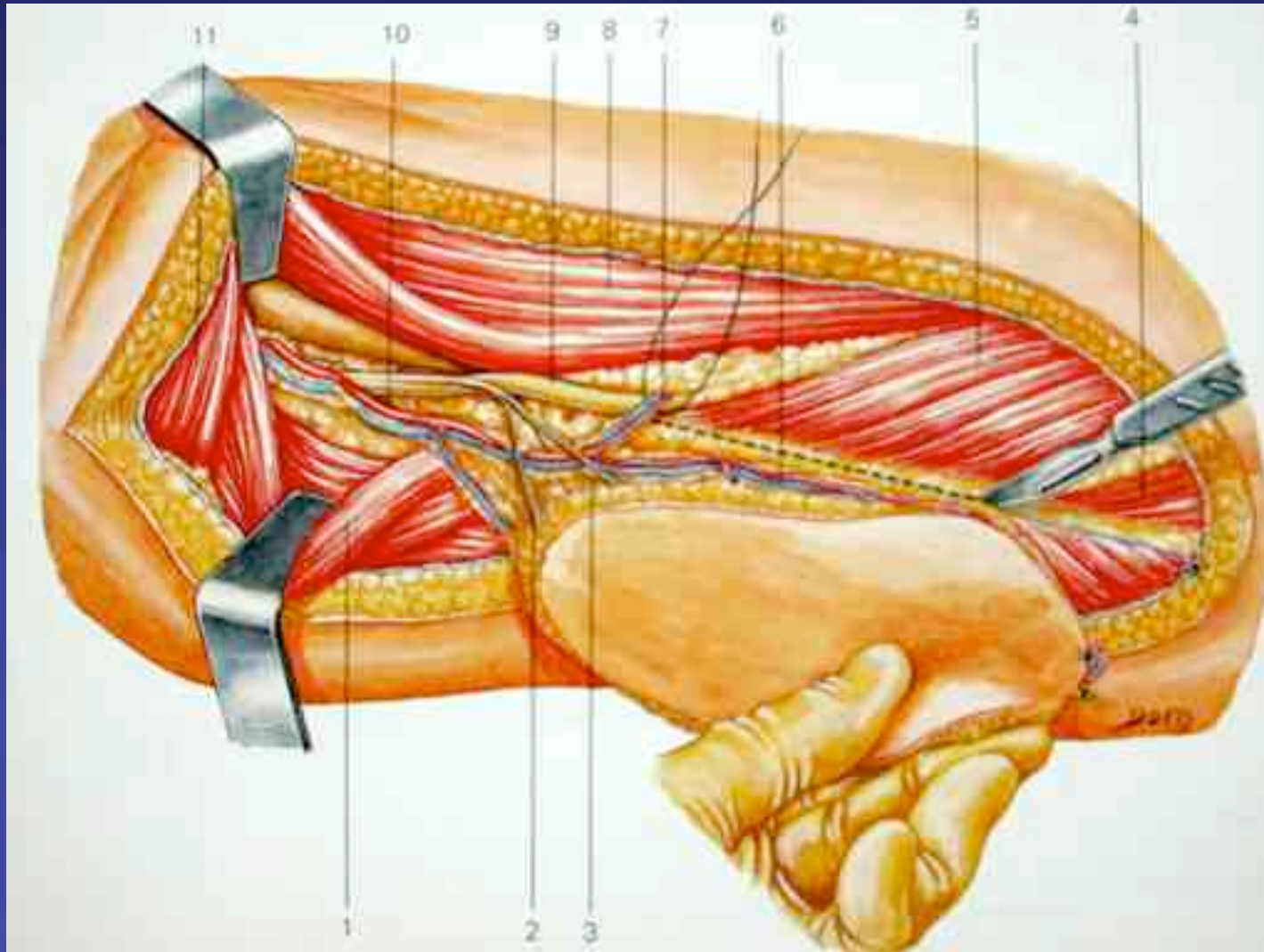
SHANG-TI-SHEN  
RUYAO SONG

- 1982

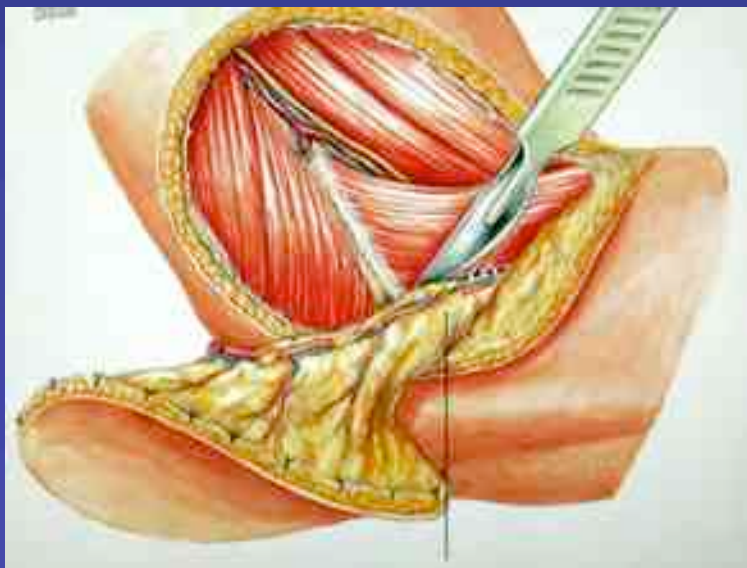
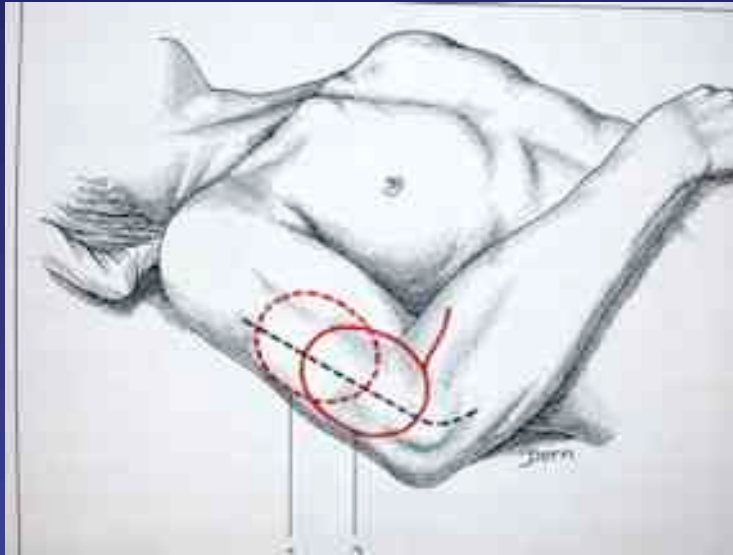


YANG KUO-FAN

# LATERAL ARM FLAP: ANATOMY



# LATERAL ARM FLAP: TECHNIQUE



- INDICATIONS:
  - COVERAGE OF ANTERIOR AND POSTERIOR ASPECTS OF THE ELBOW

# LATERAL ARM FLAP IN EXTENSIVE ARTHROLYSIS OF THE ELBOW JOINT



# COVERAGE OF HAND AND WRIST

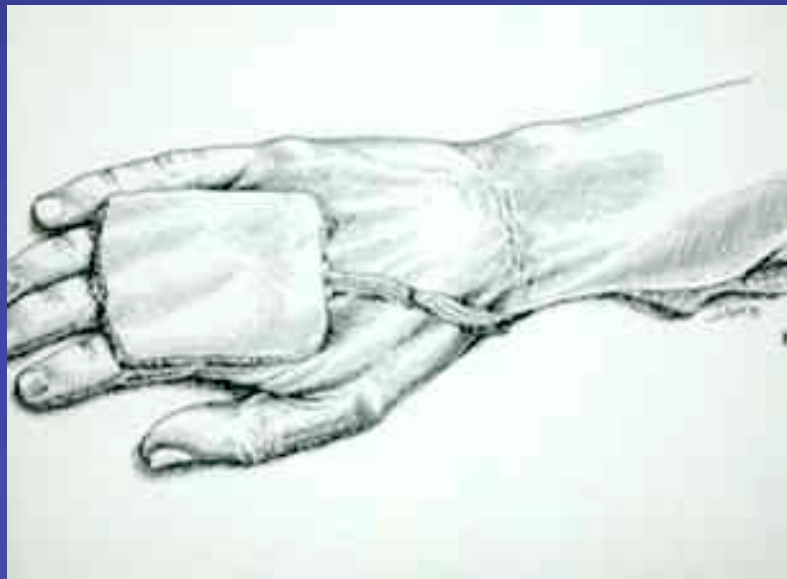
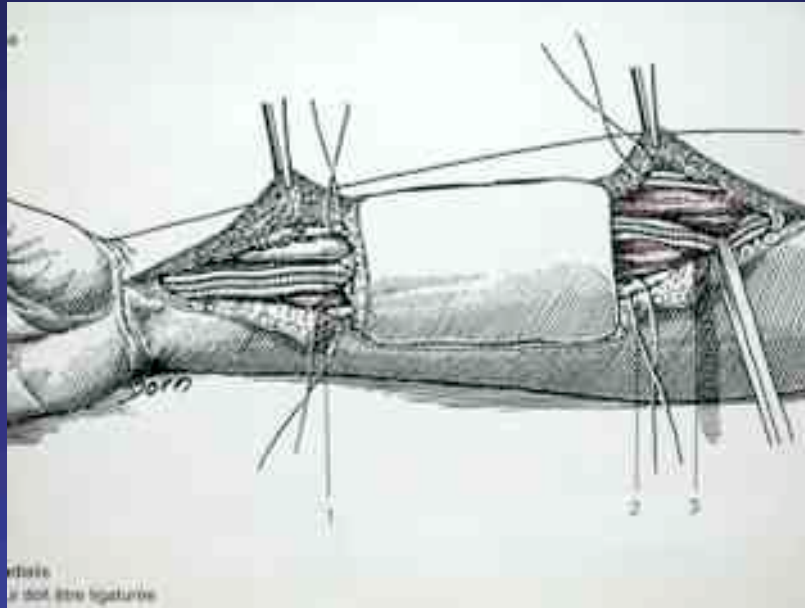
- RADIAL and ULNAR FLAPS
- POSTERIOR INTEROSSEOUS FLAP
- DISTAL ULNAR FLAP
- ANTERIOR INTEROSSEOUS FLAP
- PRONATUS QUADRATUS FLAP
- GROIN FLAP !

# RADIAL FOREARM FLAP



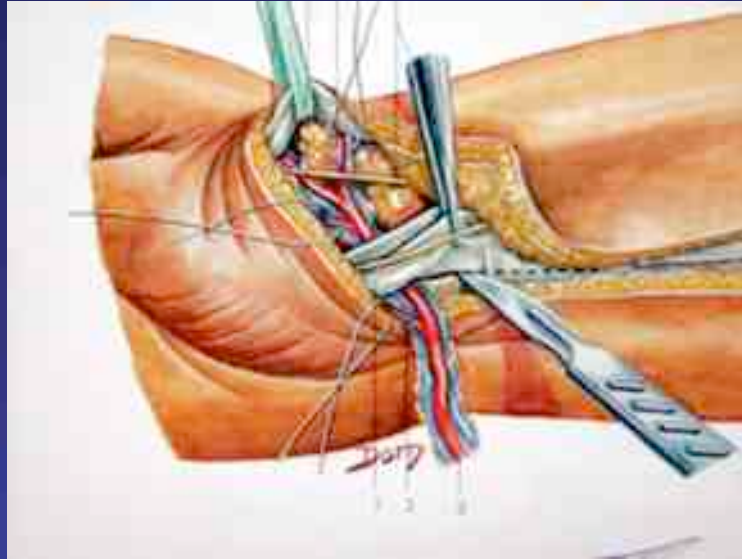


# RADIAL FOREARM FLAP



- INDICATIONS:
  - COVERAGE OF THE DORSUM OF HAND AND FINGERS

# RADIAL FOREARM FLAP



- ARC OF ROTATION IS INCREASED BY DECROSSING THE TENDONS

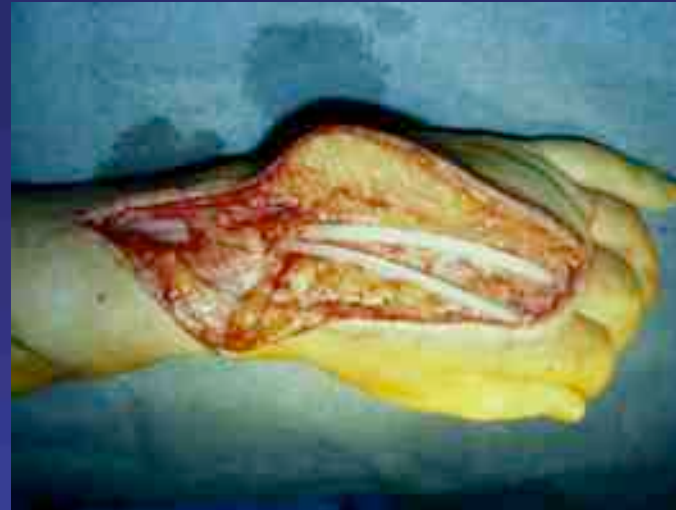


# RADIAL FOREARM FLAP

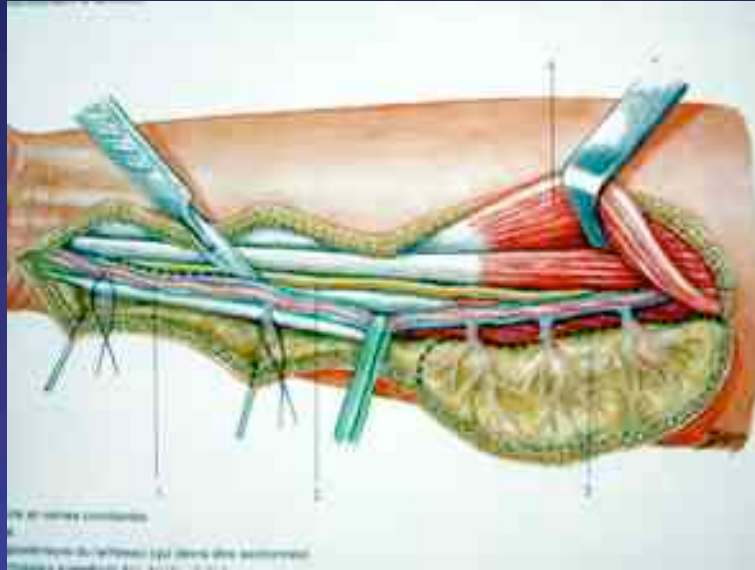


- EXTENDED NECROSIS BY ANTIMITOTIC AGENT
- ITERATIVE EXCISION
- COVERAGE BY A « CHINESE » FLAP
- MP ARTHROLYSIS
- TWO-STAGES RECONSTRUCTION of EXTENSOR TENDONS

# RADIAL FOREARM FLAP

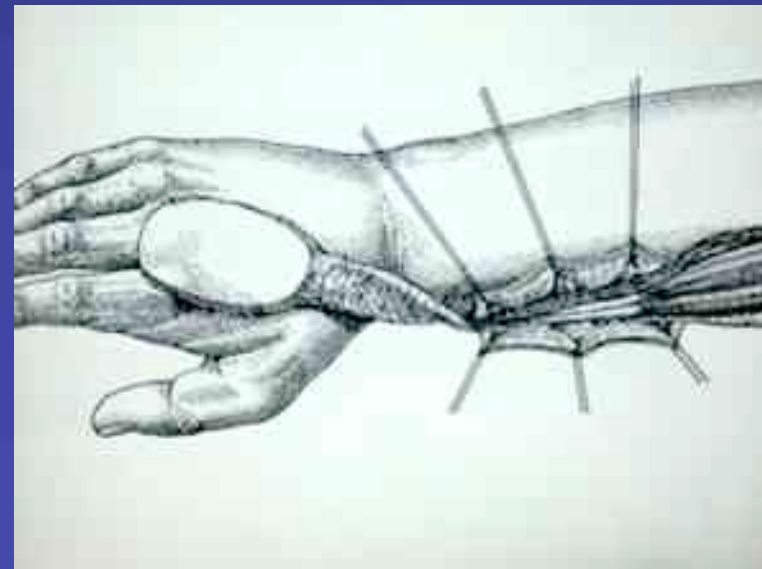
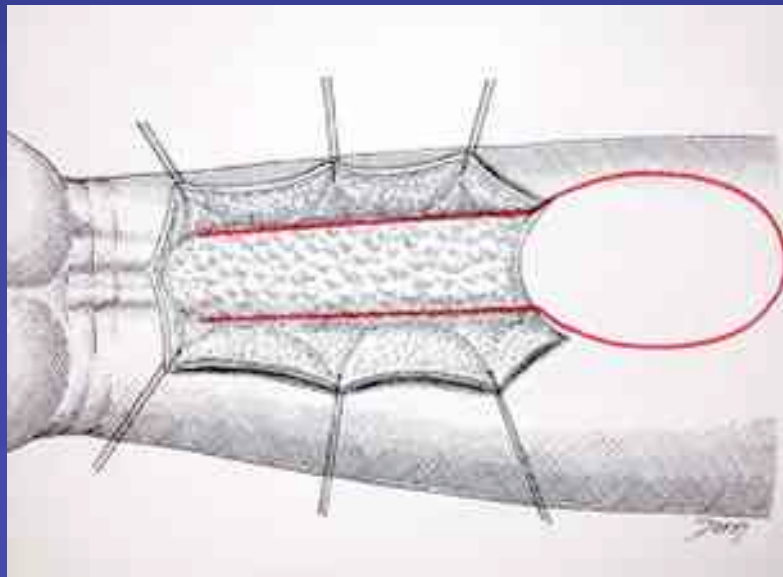
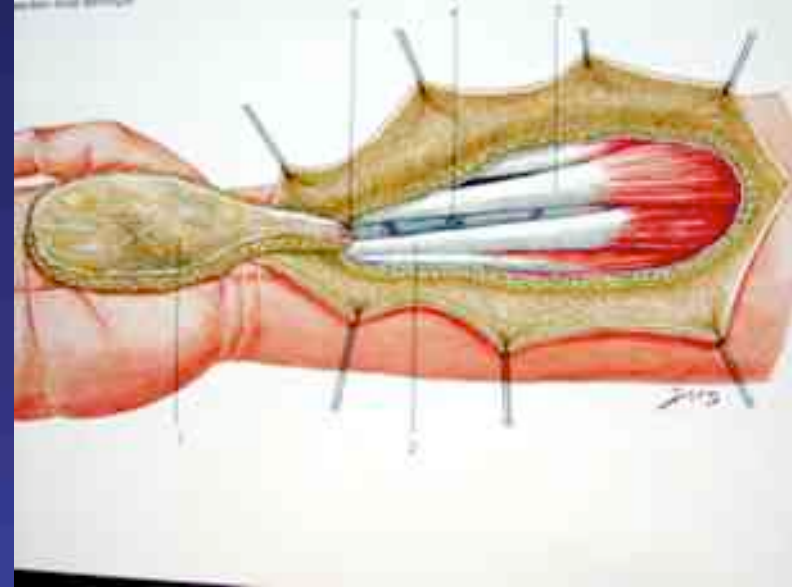
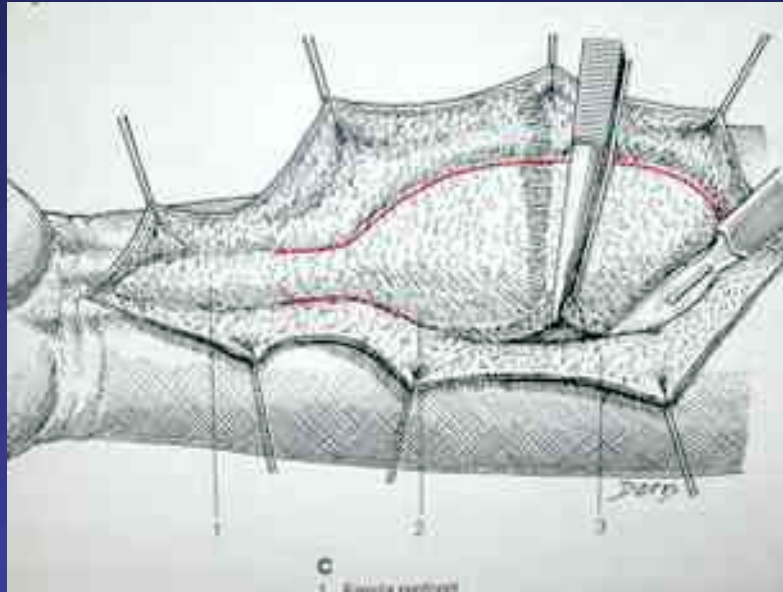


# ULNAR FOREARM FLAP

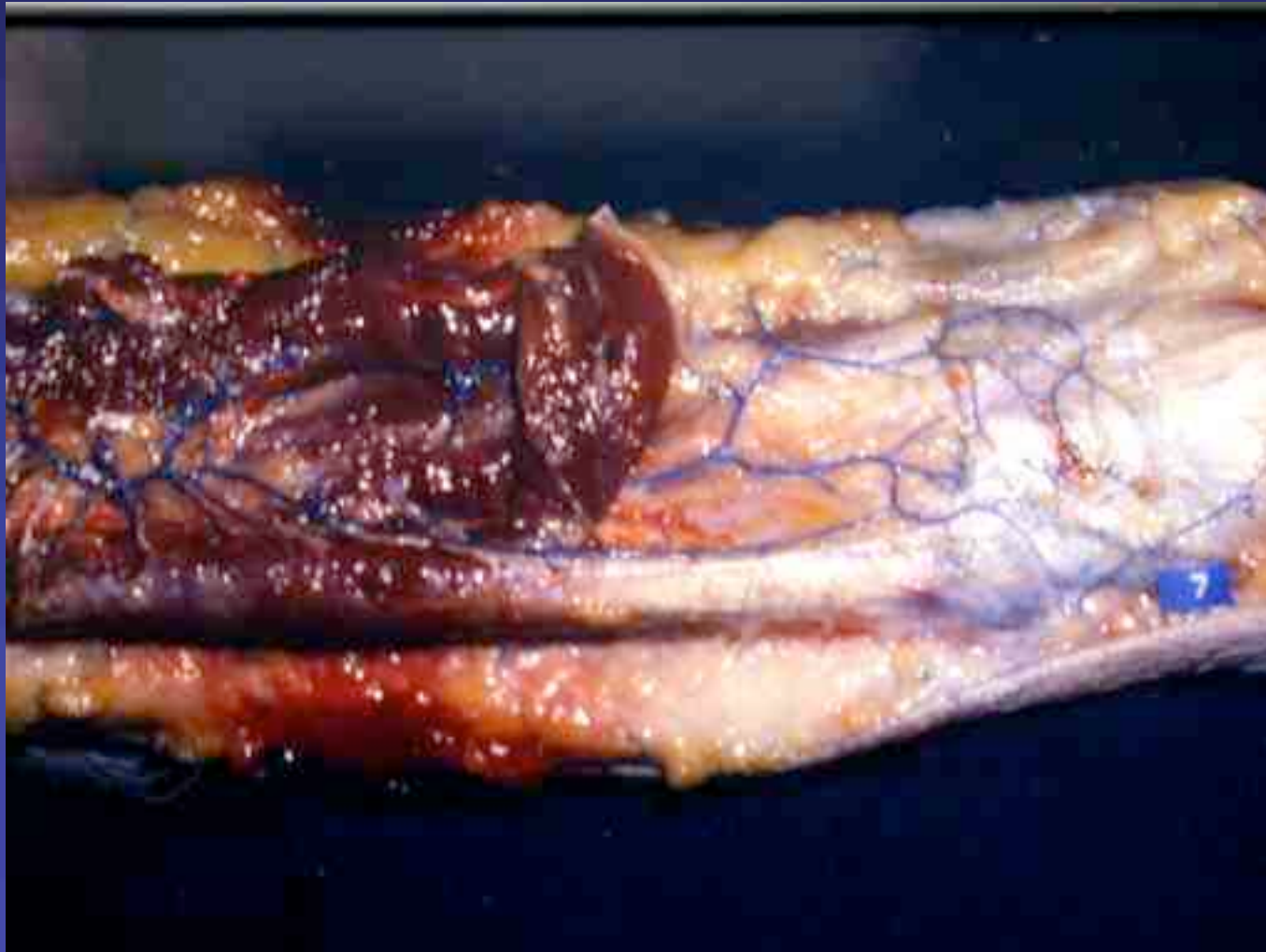


NEW INTEREST !  
VERY LONG  
PEDICLE !

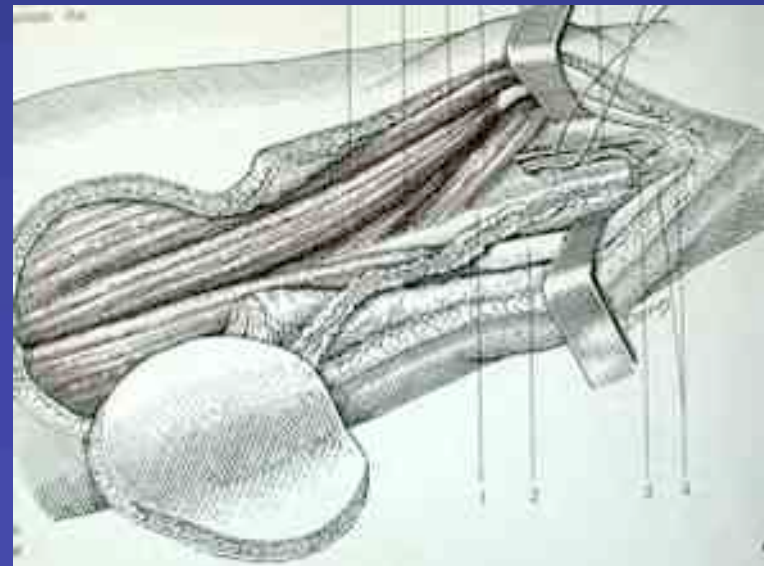
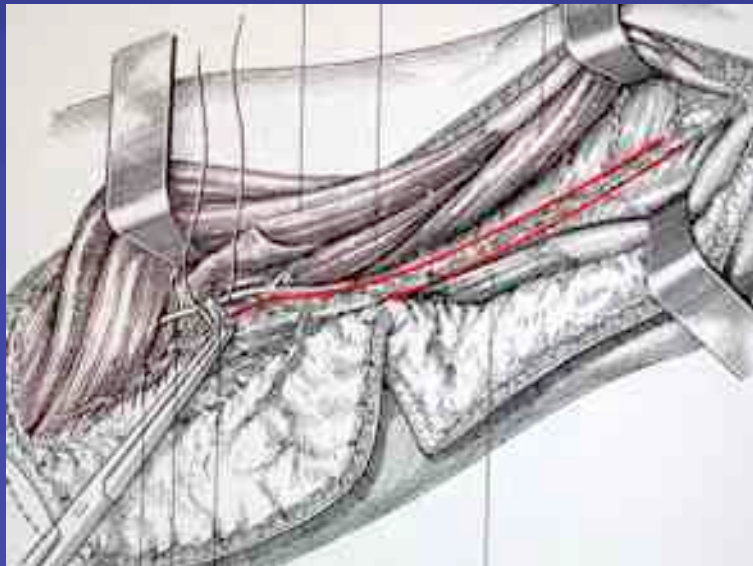
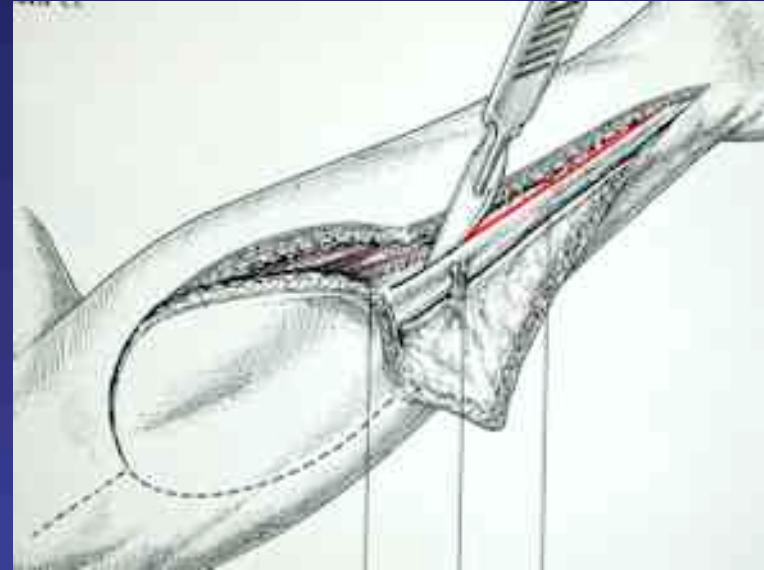
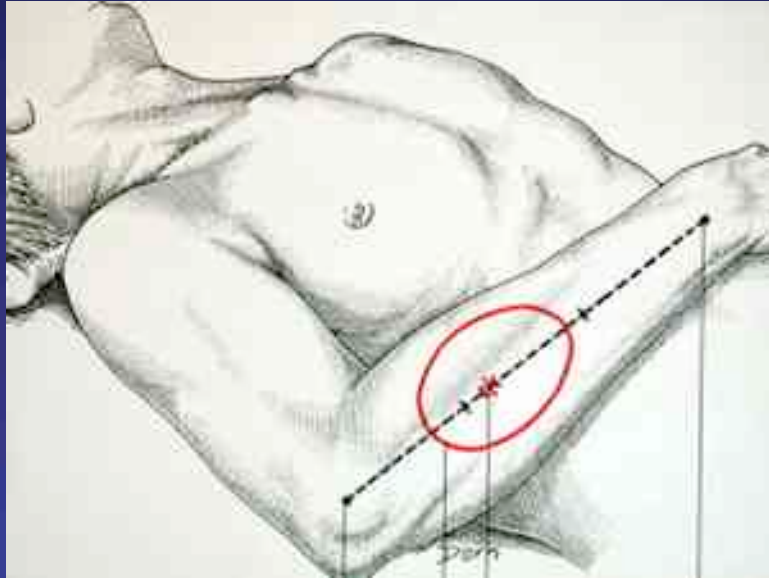
# RADIAL FOREARM FLAP WITHOUT RAISING THE RADIAL ARTERY



# POSTERIOR INTEROSSEOUS FLAP ANATOMY



# POSTERIOR INTEROSSEOUS FLAP





# SEQUELLAE OF BURNS



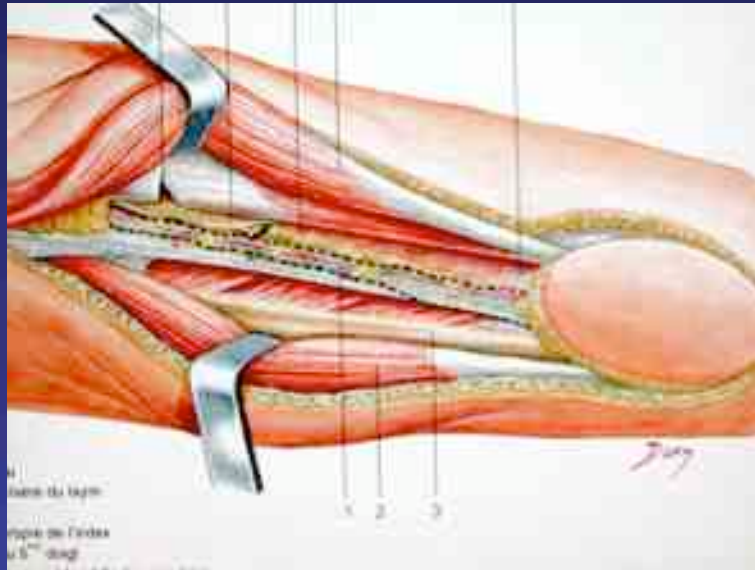
# SEQUELLAE OF BURNS



# PIO FLAP and 1st WEB

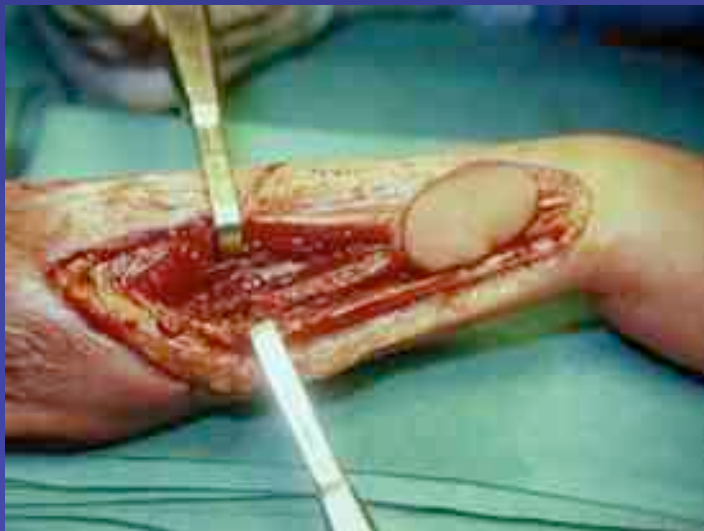


# POSTERIOR INTEROSSEOUS FLAP

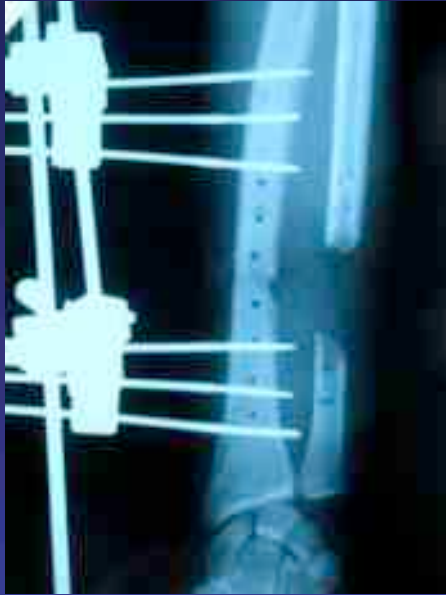


- PROXIMALLY-BASED FLAP
- SMALL DEFECTS

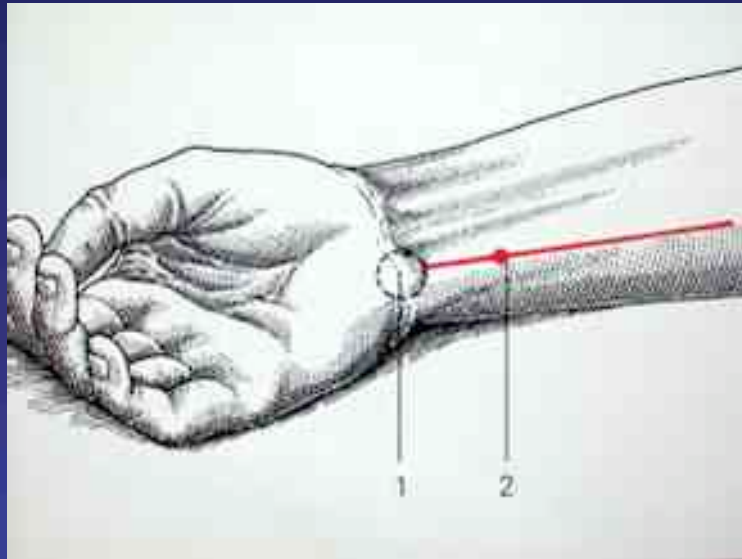
# THE POSTERIEUR INTEROSSEOUS FLAP FOR COVERING THE ELBOW



# OSTEO-CUTANEOUS DEFECT ON THE ULNAR SIDE



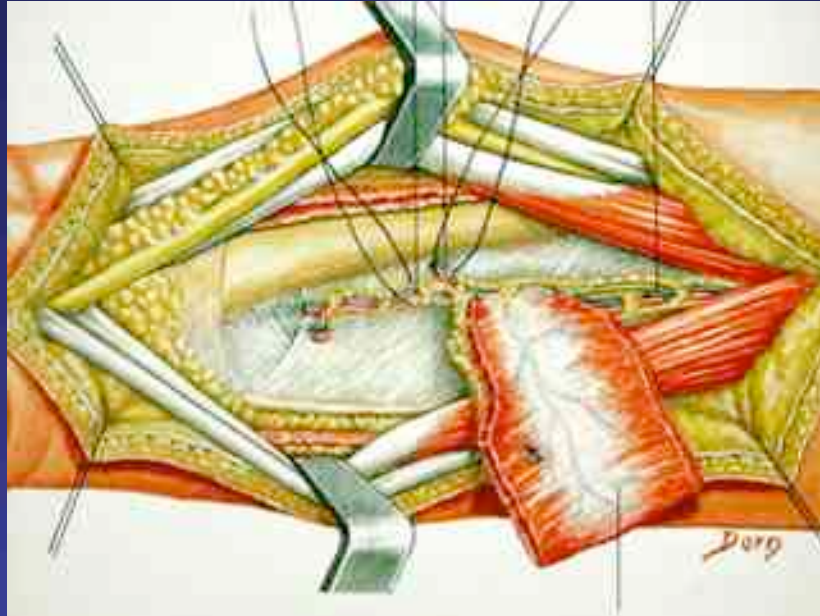
# DISTAL ULNAR FLAP



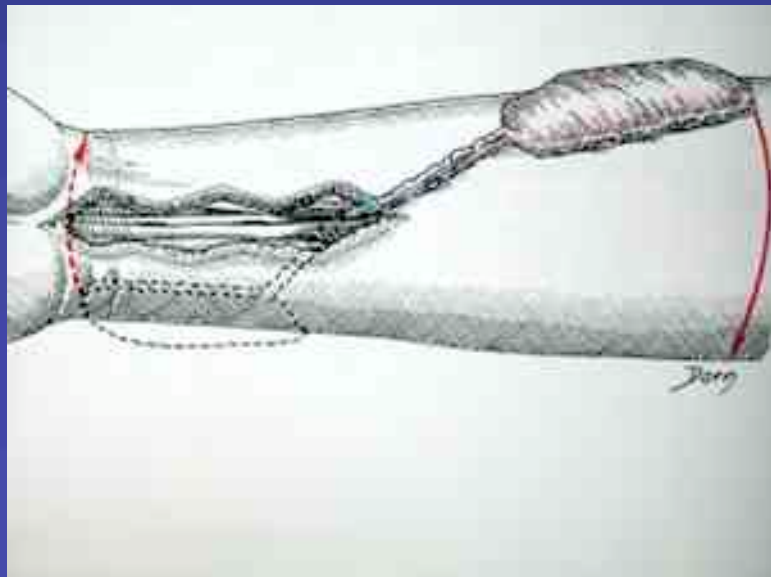
- INDICATIONS:  
ULNAR and DORSAL  
ASPECTS of HAND  
and WRIST



# PRONATUS QUADRATUS FLAP

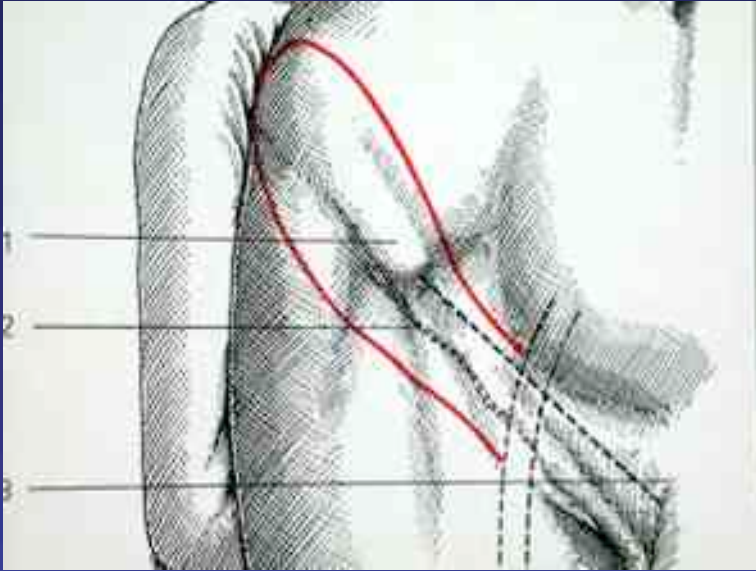


- FEW INDICATIONS

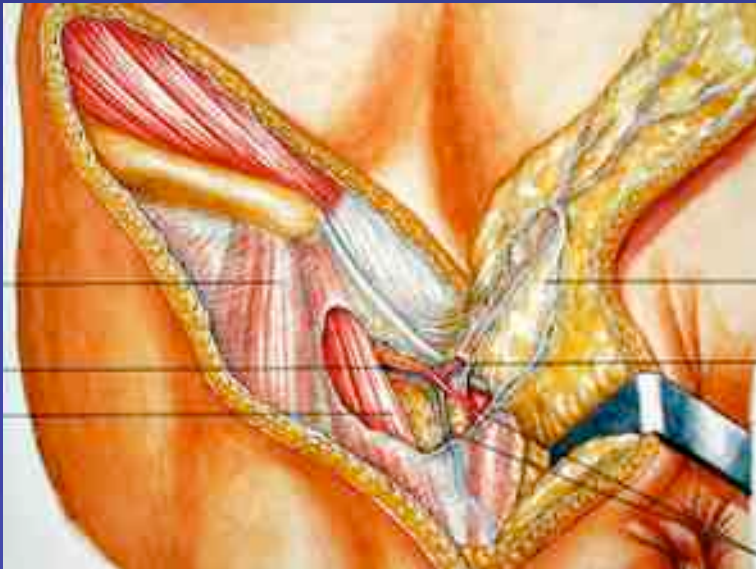




# GROIN FLAP



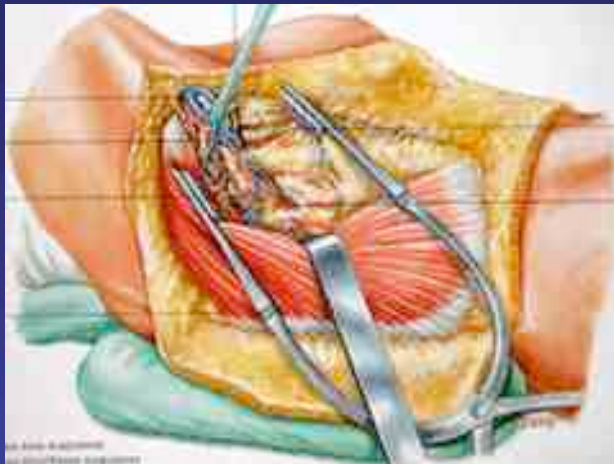
- COVERAGE OF ELBOW, FOREARM, HAND AND WRIST



# PEDICLED GROIN FLAP



# SOFT TISSUE REPAIR OF THE UPPER LIMB



- CONCLUSIONS:
  - **LATISSIMUS DORSI** and **GROIN FLAP** CAN BE USED IN THE MAJORITY OF THE DEFECTS