

Management of burn injuries



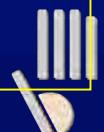
F. Brunelli

Institut de la Main - Paris
Hopital Cochin - Paris

ATTENTION Images "pénibles" Document de travail réservé aux professionnels de santé

History

- * Egyptians: gum, goat's milk, expectant mother's milk, argil, animal hairs and excrements
- * Hippocrates: cold water irrigation, grease and vegetal powder, slices of fresh onion.
- * Dupuytren (1777-1835): first detailed classification (six degrees)
- * Diffenbach (1792-1847): dermo-epidermal grafts



Epidemiology

3 x 1000

(150000 new cases every year in France)

- domestic 65%
- work 18%
- Fires 5%
- traffic 4%
- aggression 2%



Institut
de la Main

Principles of general medical treatment

More than 20%: fluid resuscitation

-Evans

-Brooke

-Parkland

Etc...



Institut
de la Main

Classification

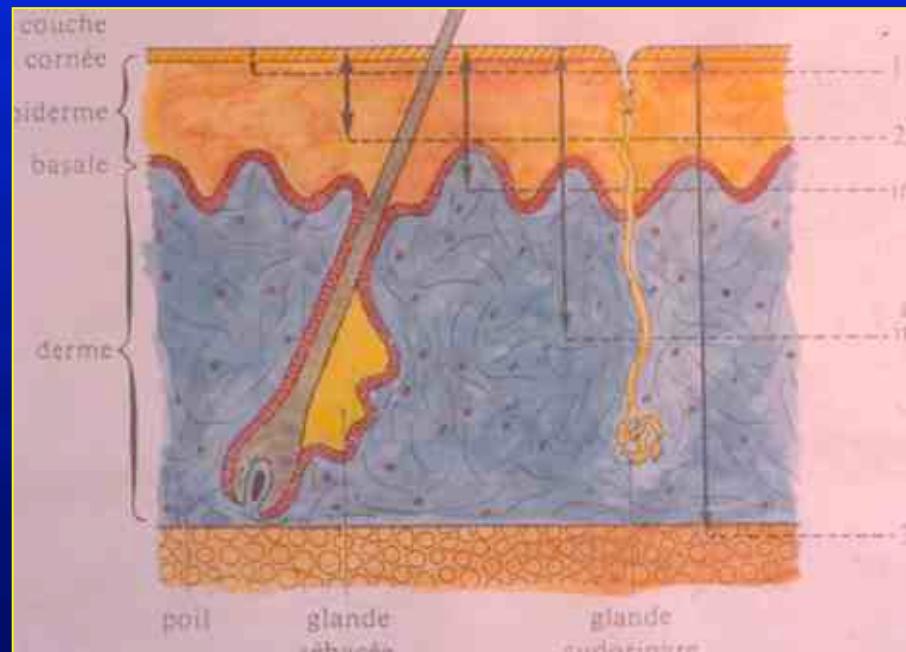
- Thermal burns (48%) hand =40%
- Electric burns hand =70%
- Chemical burns
- Cold injuries



Institut
de la Main

Evaluation of injuries

- Extent of burns
- Determination of the burn depth



Principles of surgical treatment of the burned hand

Acute management

-Escharotomy

-Electrical burns



Institut
de la Main

Principles of surgical treatment of the burned hand

Early reconstruction

- Skin excision and grafting
- Skin flaps



Institut
de la Main

Principles of surgical treatment of the burned hand



Early reconstruction

- Skin excision and grafting
- Skin flaps



Principles of surgical treatment of the burned hand

Late reconstruction

- Hand deformities
- Hypertrophic scars
- Scar contractures
- Nail deformities
- Mutilations



Institut
de la Main

Articular stiffness

- Boutonnière deformities
- Extensor and flexor tendon problems



Institut
de la Main

Cutaneous problems

Hypertrophic scar



Cutaneous problems

Postburn syndactily of the digits



Institut
de la Main

Cutaneous problems

Postburn retraction of the first web



Skin graft



Institut
de la Main

Cutaneous problems

Postburn retraction of the first web

☞ Z plasty



Institut
de la Main

Cutaneous problems

Postburn retraction of the first web

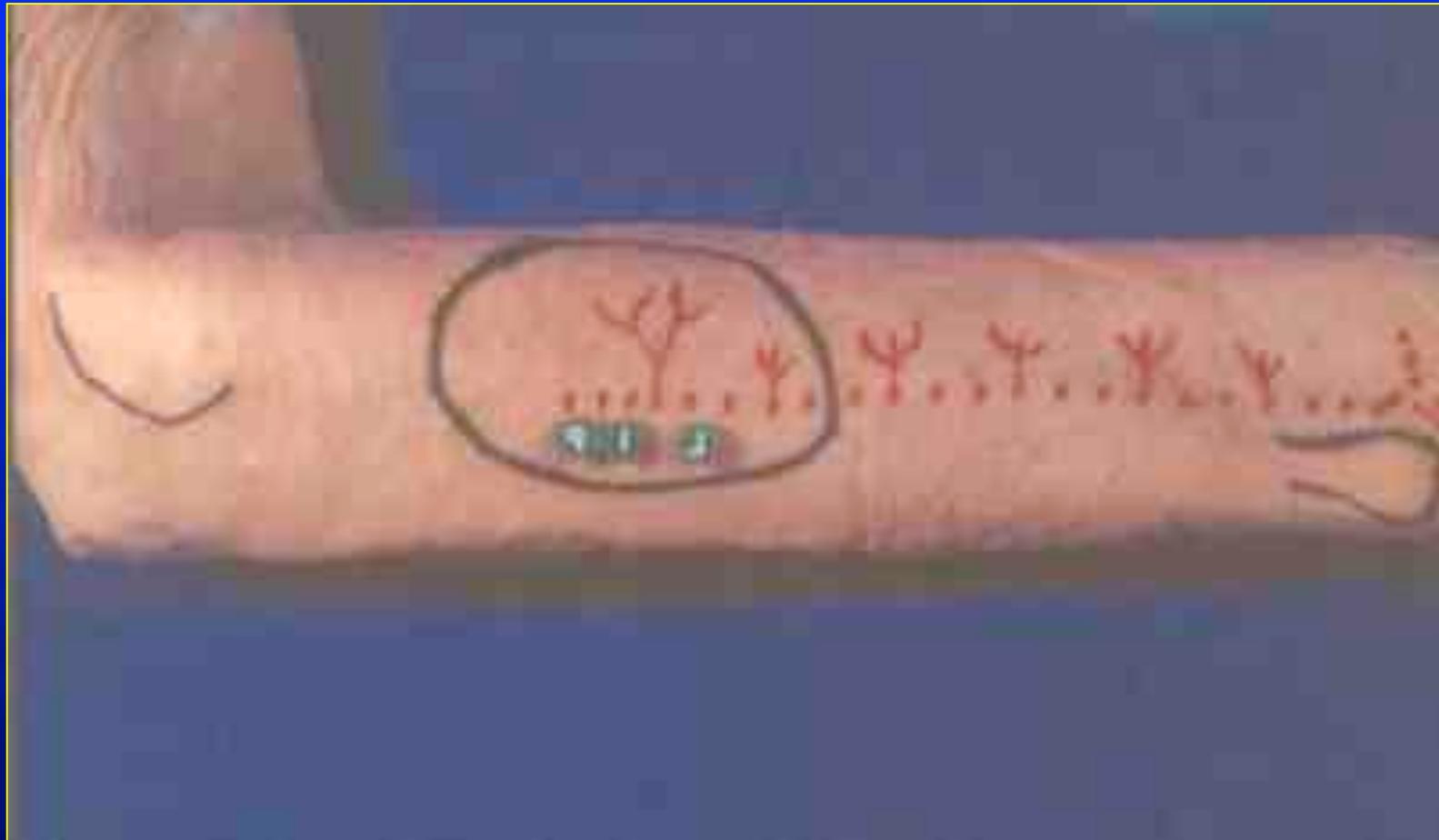


Flaps



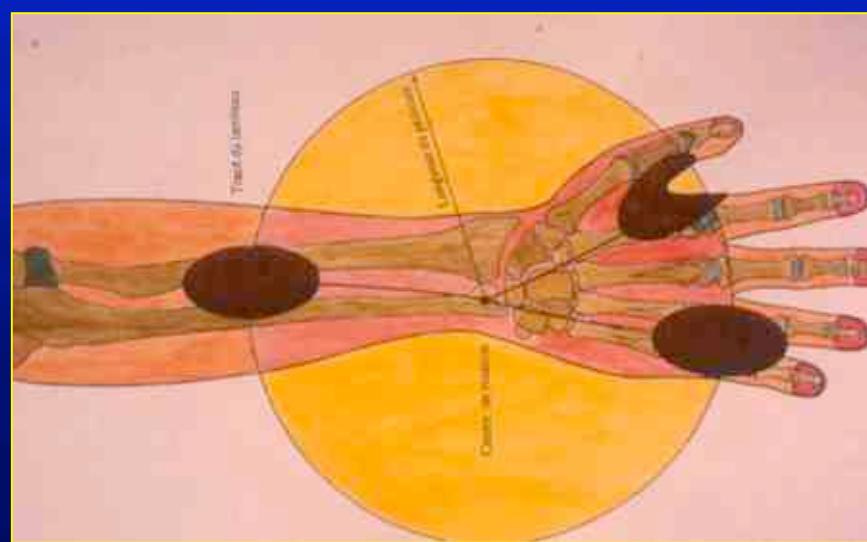
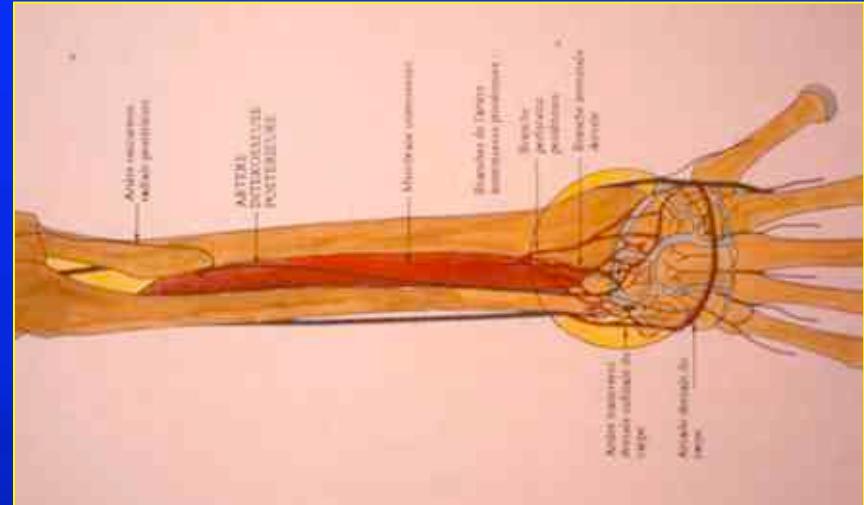
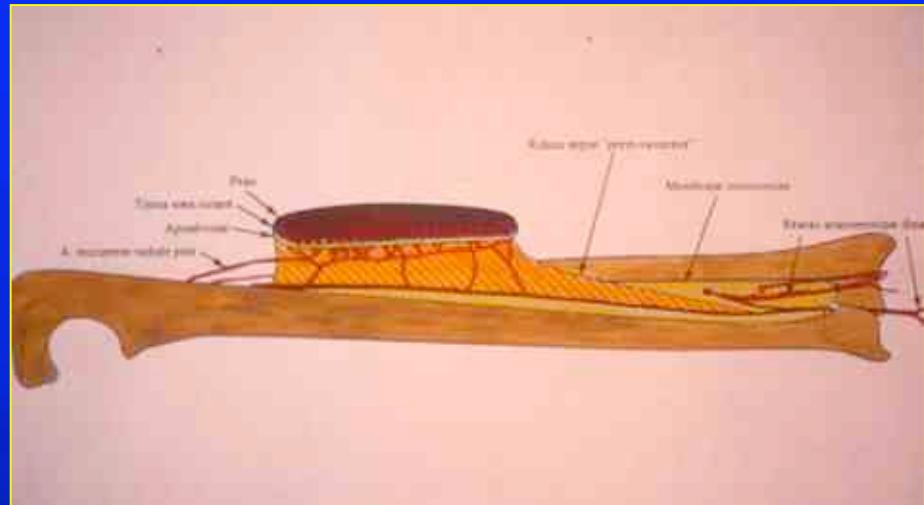
Institut
de la Main

The posterior interosseous flap



Institut
de la Main

The posterior interosseous flap



The posterior interosseous flap



The posterior interosseous flap



Technical point 1:

Disto-proximal dissection following the artery identification at the wrist



Technical point 2:
**The P.I.A. is quite superficially located at the
wrist level**



Institut
de la Main

Technical point 3:

Harvesting of the flap distal to the main perforating branch when possible





Technical point 4:

Sacrifice of the P.I.A - A.I.A. anastomosis: safe or not safe ?

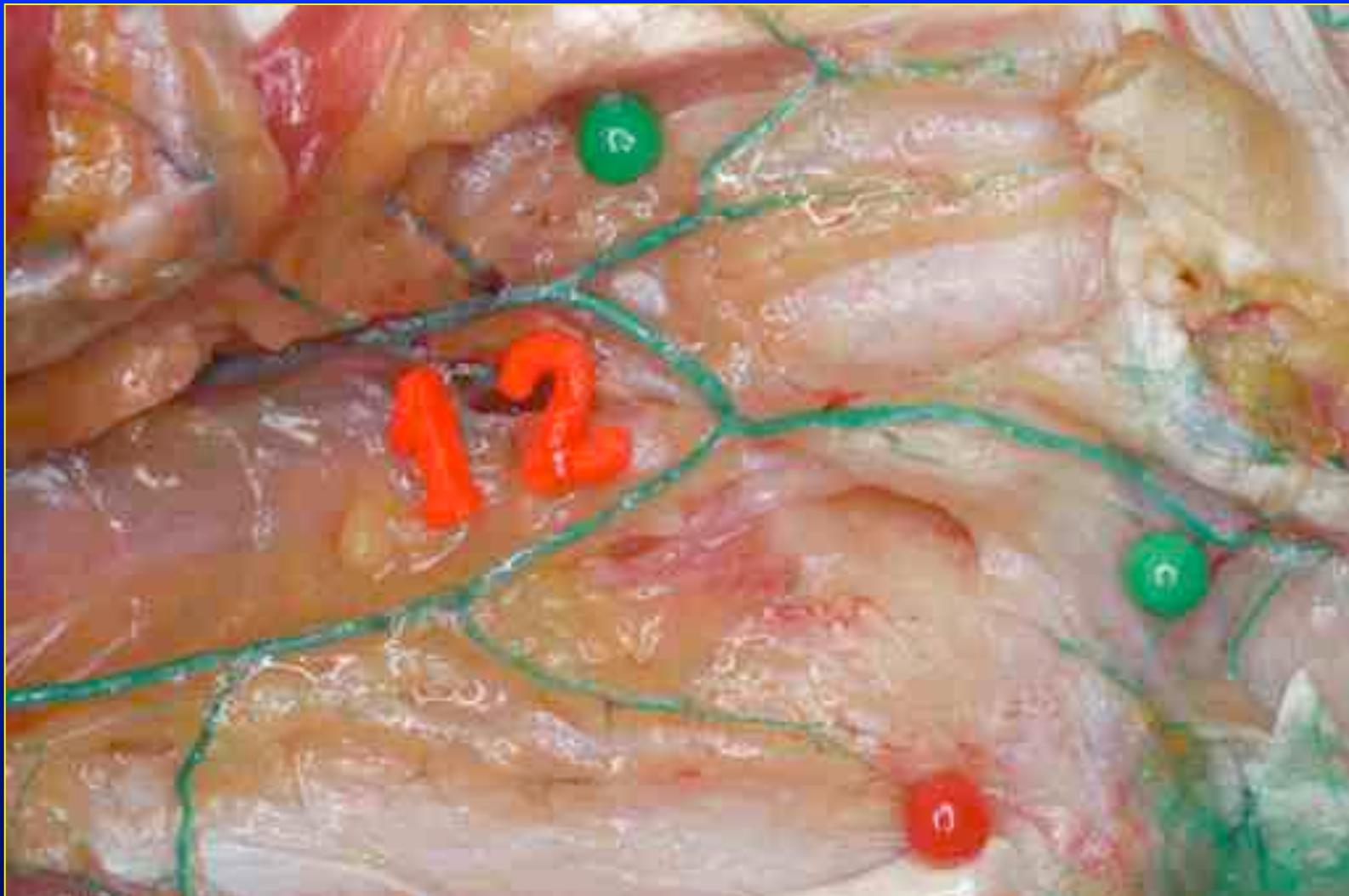


Anatomical configuration of the distal anastomosis



Institut
de la Main

Distal anastomosis P.I.A - A.I.A. ↗ 95%



Institut
de la Main

Dorsal wrist anastomosis ulnar side ↗ 40 %

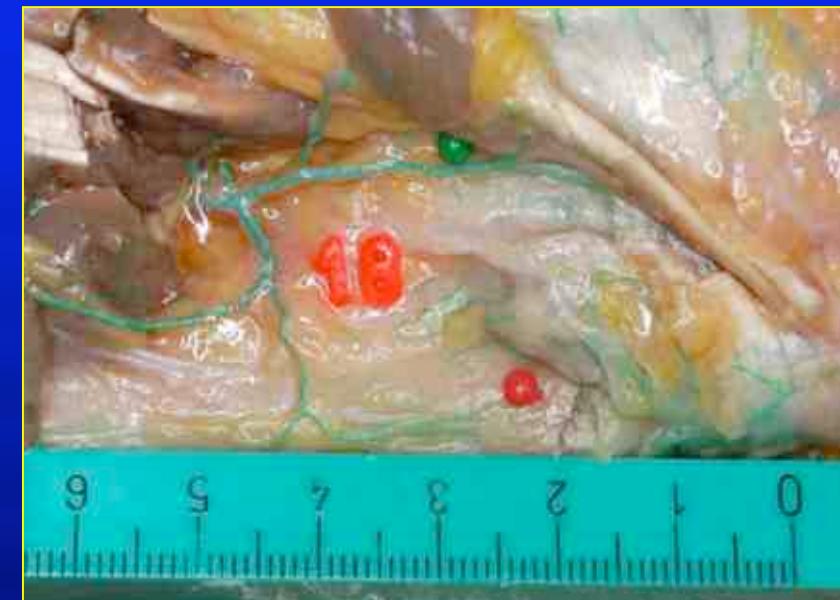


Institut
de la Main

Dorsal wrist anastomosis radial side ↗ 85 %



Distal anastomosis P.I.A.-A.I.A.
1,5 ↗ 4,5 cm.



Institut
de la Main

Better to preserve the anastomosis when possible !



Severe postburn skin losses

Posterior interosseous flap

- Chinese flap
- Ulnar flap



Institut
de la Main

- Severe postburn skin losses

- Posterior interosseous flap



Institut
de la Main

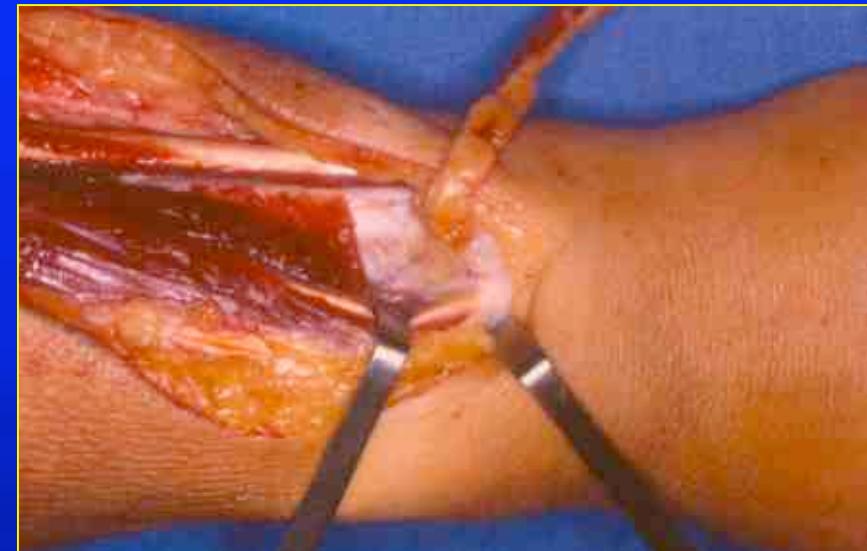
- Severe postburn skin losses

- Posterior interosseous flap



- Severe postburn skin losses

- Posterior interosseous flap



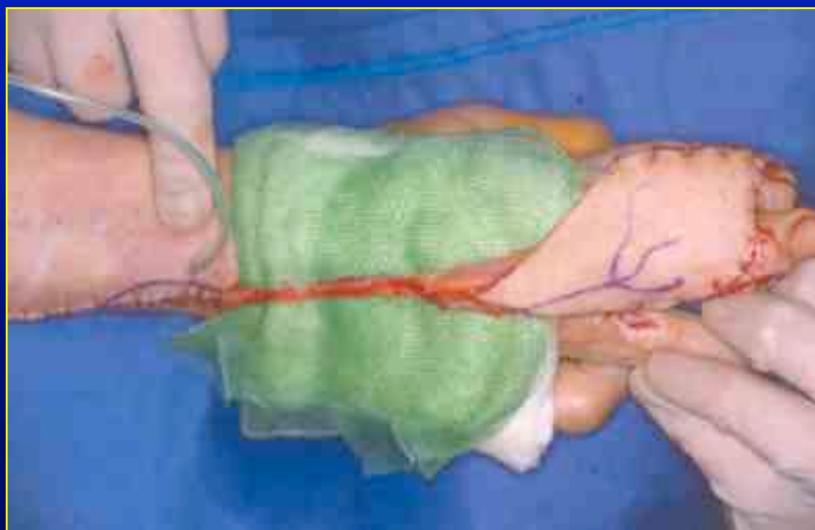
Institut
de la Main

- Severe postburn skin losses
 - Posterior interosseous flap



- Severe postburn skin losses

- Posterior interosseous flap



- Severe postburn skin losses
 - Posterior interosseous flap



- Severe postburn skin losses
 - Chinese flap



Institut
de la Main

- Severe postburn skin losses

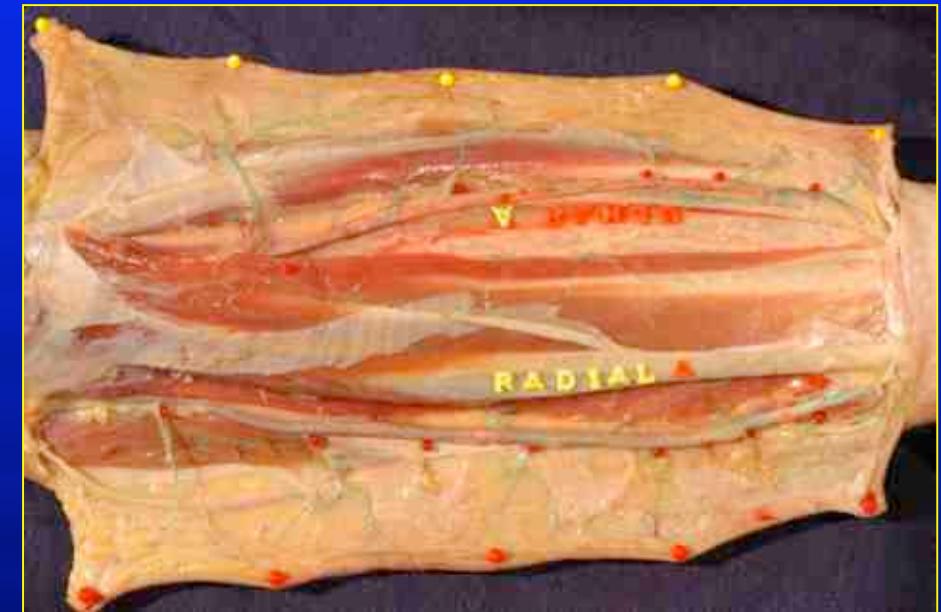
- Chinese flap



- Severe postburn skin losses
- Chinese flap



- Severe postburn skin losses
 - Ulnar flap



- Severe postburn skin losses

- Ulnar flap



de la Main

Cutaneous problems

- Nail deformities



- Nail deformities





- Nail deformities



- Nail deformities





- Nail deformities



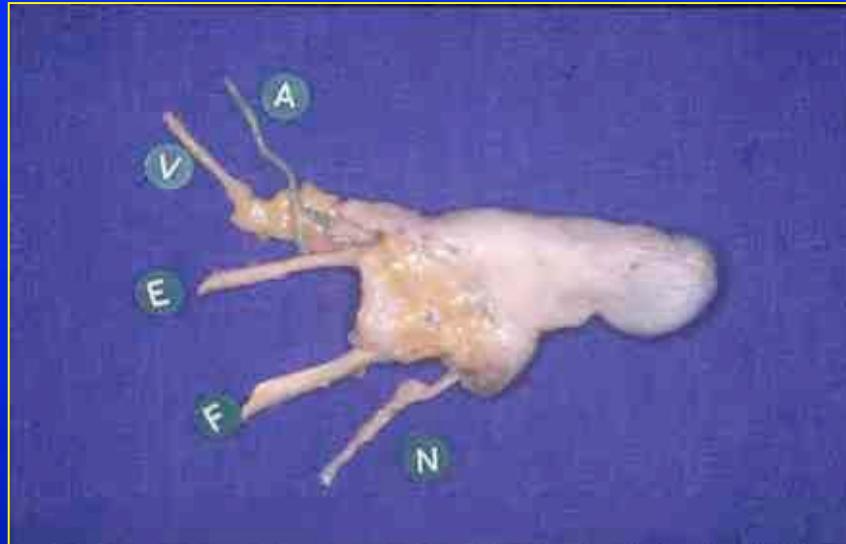
Total distal phalanx reconstruction



Total distal phalanx reconstruction



Total thumb reconstruction



Very severe postburn skin losses (scapular flap)



(scapular flap)



Institut
de la Main

(scapular flap)



Institut
de la Main

(scapular flap)



Institut
de la Main

(scapular flap ↔ gracilis)



(scapular flap
gracilis)



Institut
de la Main

(scapular flap ↗ gracilis)



Institut
de la Main



Microsurgical reconstructions

Much more risky than in standard operations



Management of postburn hand deformities

- Demanding surgery
- Different techniques
- Don't forget the forgotten operations



Institut
de la Main