The interest of local flap in the management of fingers deep burn: about 62 cases

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Hand and digits

Hand burn are very common

- Superficial and deep second degree: «classic» management

- Third degree:
  - Require a excision of all burn tissue
  - Mean all cutaneous tissue / underlying tissue

Specific anatomical location

- Nerve, tendons, bones… are very superficial
- Excision: exposition risk very high
Issue

- Must be concerned about the quality of the scar
  - Hand: functional and social organ

- Require a coverage
  - Adequate
  - Durable
  - Quality
Purpose

- Role of local flap in the management of deep burn of the digits

- Surgical indication: exposition
  - Tendons
  - Bones, articulation
  - Nerves
Serie

- Retrospective study: 2005 / 2019

- Patient suitable for inclusion
  - Adults / Children
  - Finger deep burn
  - Underwent local flap (random pattern or pedicled)
  - In our unit (Burn Center – Nantes)

- Consultation was realized by one senior for final evaluation
Data

- 52 patients / 62 flaps
- 35 males / 17 females
- Mean age 38 years old (2 to 82)

Aetiology
- Flame 48.6%
- Electric burn: 51.4%
Data

- 62 flaps
  - 41 pedicled flaps
  - 21 random pattern flaps

- Loss of substance after excision mean surface: 4,2 cm²

- Donor site
  - Primary closure 50 cases
  - Full thickness skin graft: 12 cases
Donor site

Hand (dorsum): 12 cases

62 flaps

Finger ≠ burn finger: 10 cases

Burn finger: 40 cases
Clinical Case 1

Female, 72 years old
Burn due to flame

Radial part of the thumb,

IP exposed and open
MCP exposed
« Foucher » Flap
- Follow up 1 week
Clinical case 2

- Male, 64 years old
- Burn contact, Ulnar part of the fifth ray
- Excision: partial exposition
  - PIP
  - Extensor tendon
Pedicled flap: reverse homodactyle

Design of the flap
Case 3

- 32 years old
- Male
- Electric burn
- IP Thumb open
Result

- Rate of success: 94.1%
  - Failure: 3 flaps
  - Venous congestion

- 3 cases
  - 2 amputations
  - 1 heal by secondary intention (6 weeks); joint arthodesis
Result

Evaluation: Minimum follow up 1 year (8 patients lost of follow up)

- No wound recurrence

- Functionnal point of view
  - Scar Retraction: 3 cases
    - 1 case: Z plasty and FT skin graft
  - Limitation of the range of motion PIP / DIP joint: 3 patients
  - Lack of sensitiveness: 4 cases

- Cosmetic point of view
  - Flap too bulky: 4 cases
  - Skin coloration problem: 4 cases
  - No ask for revision
Discussion

- Flap advantages
  - Vascularized tissue ++
    - Growth capacity
    - Infection fight
    - Tendon coverage (gliding)
  - Single stage procedure
    - Allowed the patient to move quickly: avoid joint stiffness

- Flap disadvantages
  - Require particular skill
  - More difficult
  - Donor site morbidity
Discussion

- Surgical treatment Finger’s deep burns is still a matter of discussion.

- No indication (rate of success)
  - Vuillaume; Ann Chir Plast 2005

- Superiority (functional point of view)
  - Sheridan; J trauma 1995
  - Hallock; J Burn Care Rehabil 1995

- Role of substitute skin
  - Kalmoz; Burn 2009
Conclusion

- Finger and hand burn are very common
- Must be concerned about deep burn:
  - Exposition of underlying tissue
  - Quality of the scar

- Our result show
  - Good rate of success
  - No wound recurrence
  - Good result functional and cosmetic point of view

- Local flap must be integrated in the decision tree for the management of deep burn of finger
The interest of local flap in the management of fingers deep burn: about 51 cases

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