



How to cover losses of soft tissue in bone infection after war injuries of the leg?

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Introduction

- Pb of covering bone infection of the leg after war injuries?
- Multi national team: bulgarian, german and french surgeons
- 7 cases
- Field hospital (NATO) in Kabul (Afghanistan)

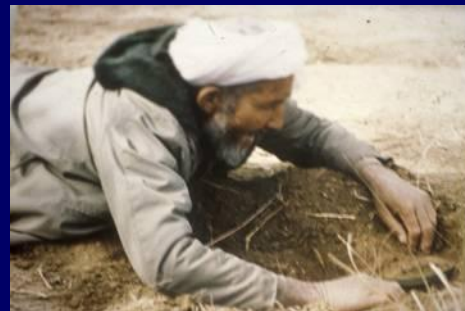




Material et methods



- July to September 2007
- 7 patients (civilians) with bone exposure on the leg: fistula (2 cases) or loss of soft tissue
- Initial wound: shrapnel of shell, grenade or mortar and bullets.



Material et methods

- First wounds: bone and soft tissue (St. I, II, III Gustilo Anderson)
- 3 patients: 2/3 proximal
- 4 patients : 1/3 distal
- 7 ♂, 32 years middle- aged (18 - 60)

- Time between wound and surgery: 35 days (3 - 180)
- Technique
 - 1st time : debridement, washing by Surgilave ® and external fixation (if non union)
 - 2nd time: Flap 3 days after

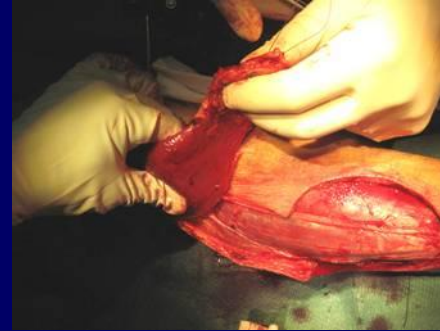


2/3 proximal: 3 cases

1/3 distal: 4 cases



1 musculo cutaneous and 1 muscular flap (medial gastrocnemius)

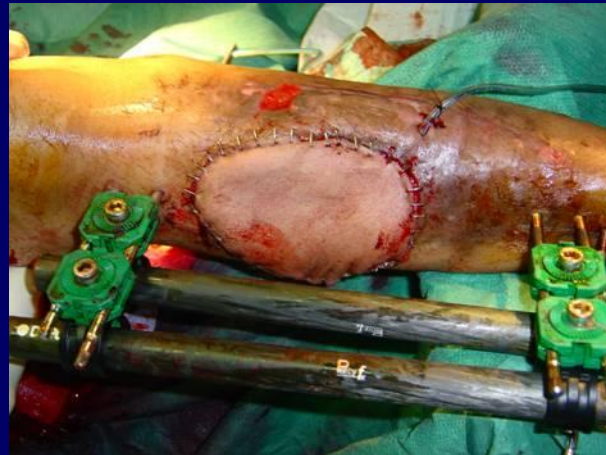
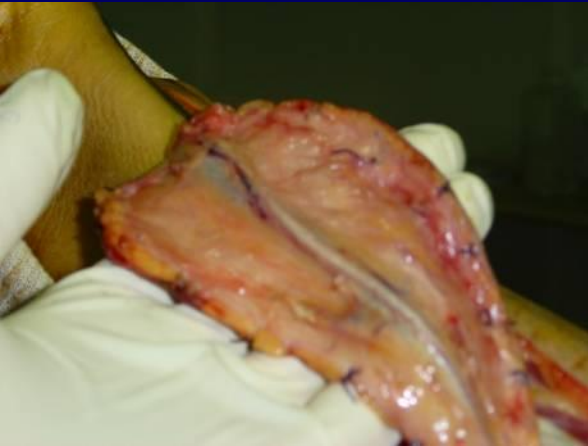


1 muscular flap (lateral gastrocnemius)

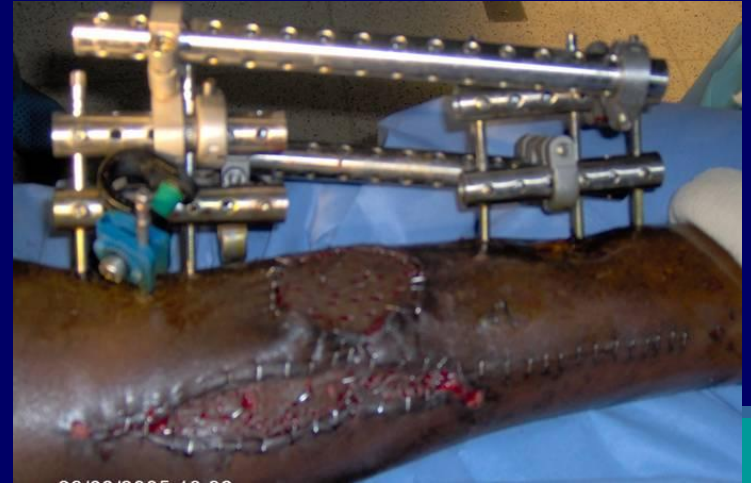


Uncrossing of the peroneal nerve

4 fascio cutaneous flaps (lateral sural with distal pedicle)



Results



- Complete healing of the flap: 25 d (18 - 34)
- Time of hospitalization: 7 d
- Dressings each 2 d
- Complications: 1 hematoma with cutaneous necrosis of the musculo cutaneous flap then complete healing, 1 sepsis

Discussion



Conditions in Afghanistan:

- Mutilated civilians, war, insecurity, poorness, customs, nomadism
- Deficiency, time of transport, relief
- Deficiency and cost of medical cares
- Bad experience of amputation



Conditions in the field hospital :

- 20 beds, short hospitalization, short operative times (< 2h)
- Possibility of massive casualties
- Time of antibiotherapy in bone infection (stock of ATB)
- Main mission: Cares for soldiers ISAF
- Controlled healing: long and difficult (No VAC®)



Discussion

- ❖ Bone exposure =
 - Necrosis
 - Infection (osteitis, non union)
 - Septicemia and death



1 solution: amputation to save the patient's life

Necessity of rapid and reliable treatments, with easy post operative cares to prevent the amputation

- ❖ Advantages:
 - New vascularized tissue on the loss of substance
 - Anti infectious property
 - Easiness and reliability
- ❖ Indications:
 - Muscular and musculo cutaneous flaps: 2/3 proximal of the leg,
 - Fascio cutaneous flaps: middle and 1/3 distal of the leg

Conclusions

- ❖ Flap = First treatment to fight against bone infection
- ❖ Useful if deficiency of medicines and technical means
- ❖ Simple and reliable technique
- ❖ Important place in war surgery
- ❖ But:

Pb if very important losses of substance



Free flaps (Latissimus dorsi....)

Needs a long operative time, micro surgical material, know-how or plastic surgeons: difficult in war surgery

No such indications in our experience

