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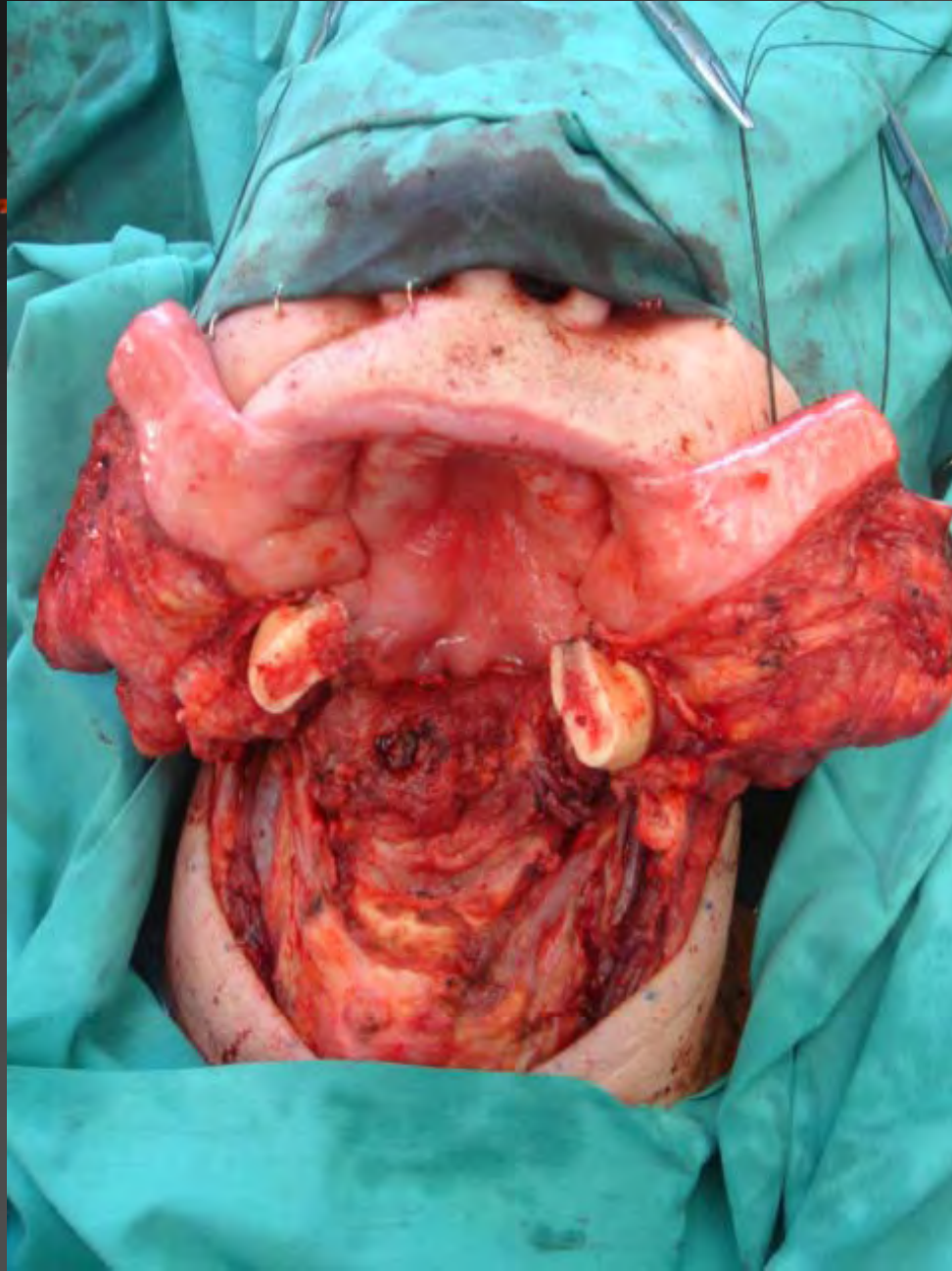
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Mandible Reconstruction

Damien Grinsell
Registrar Conference



Welcome!!



Goals/Aims

- Prevent a salivary fistula
- Reconstitute bony arch
- Speech
- Swallow
- Dental rehabilitation
- Oral competence



Decision making

- To reconstruct or not
- Soft tissue vs Bone
- Vascularised vs non
- Choice of flap

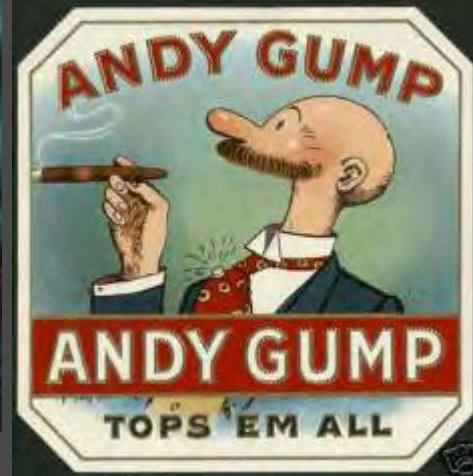
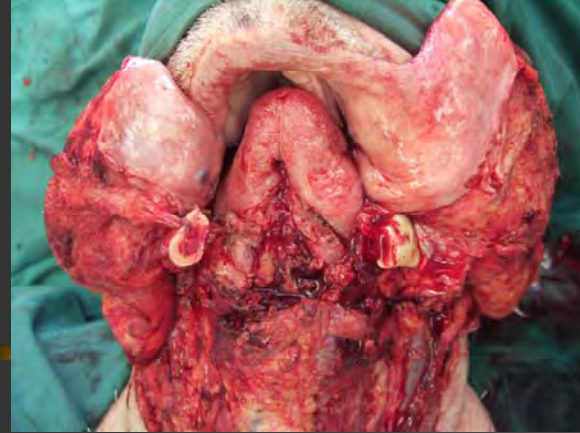


Principles-

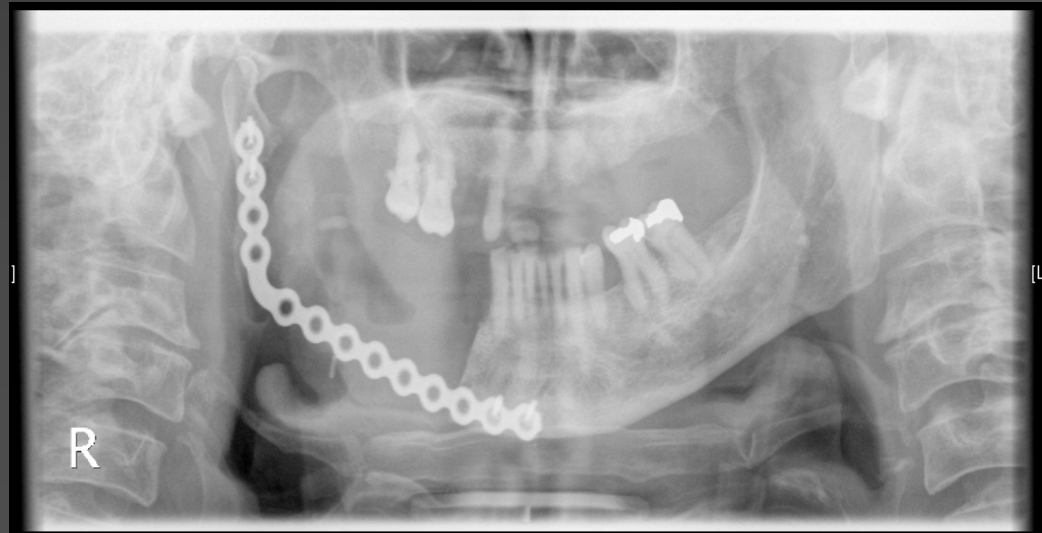
Cover, Skeleton, Lining

- Cover = skin, muscle with SSG
 - Skeleton = Bone, Recon plate
 - Lining = skin, muscle +/- SSG
-
- Importation of well vascularised tissue
-

Recon or not?



- Anterior defects
- Mandate reconstruction
 - Airway protection
 - Andy Gump deformity
- Lateral defects –
 - Have a choice



Lateral defects

Soft tissue

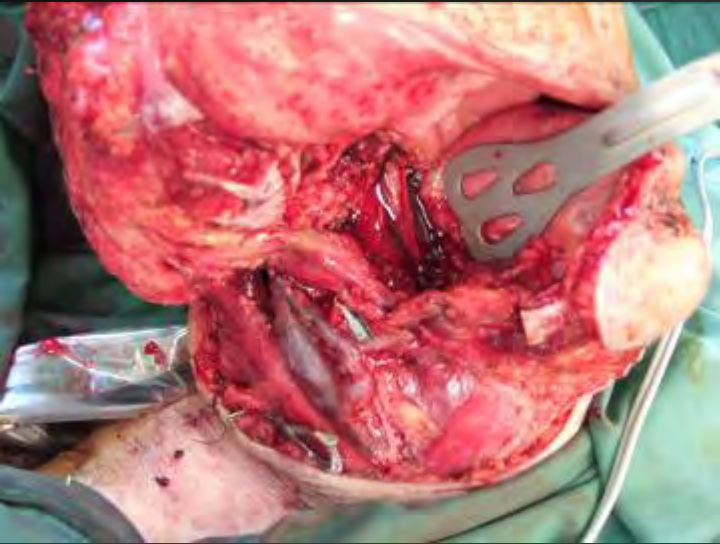
vs

Bone

- Easy and simple
- Obliterates dead space
- Watertight seal
- Malocclusion
- Consider in elderly, compromised, salvage
- Eg Pec Major, free rectus

- Gold standard
- More complicated
- Requires free flap
- Bony union
- Occlusion
- Dental rehab
- Risk of ORN

Soft tissue only



Bony recon

Vascularised vs Non-vasc.

- Bony defect > 4cm
- XRT
- Segmental defect
- Salvage surgery

- < 4cm
- No XRT
(benign/trauma)
- Marginal
mandibulectomy
- Paediatric population
- Eg Free rib grafts,
distraction
osteogenesis



Fibula = Workhorse

Adv

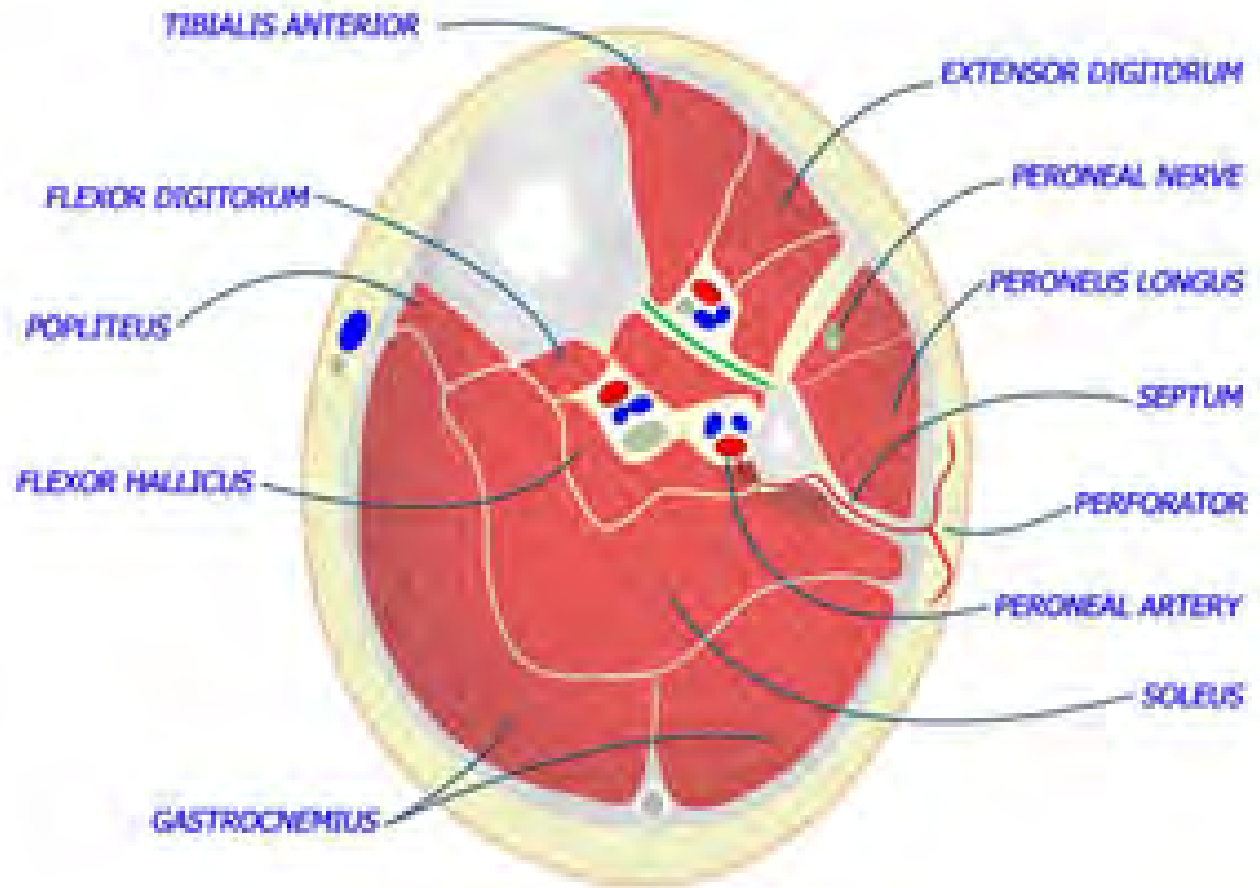
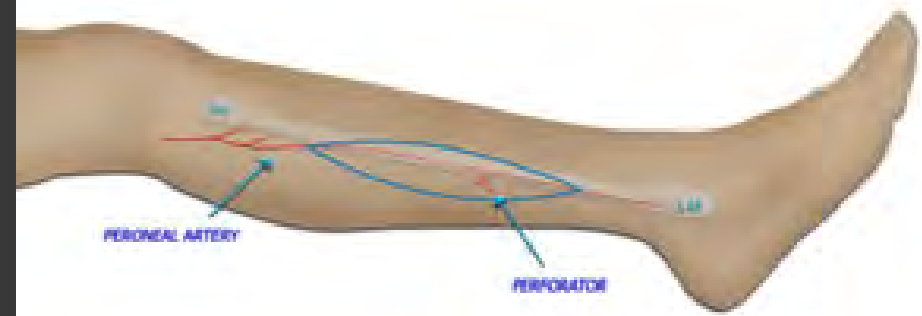
- Good bone stock
- Long length 25cm
- Pedicle calibre and length good
- Multiple osteotomies
- O.I. possible
- Versatile - Bone, skin, muscle

Disadv

- Donor SSG
- FHL
- Periosteal supply
- CI in vasculopathies
- ? PVD in future



Dissection



DCIA = 2nd choice

Adv

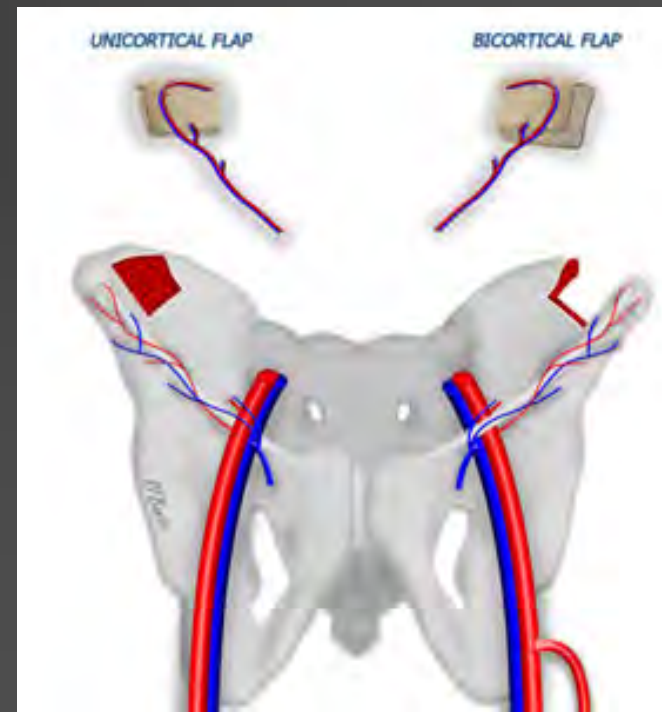
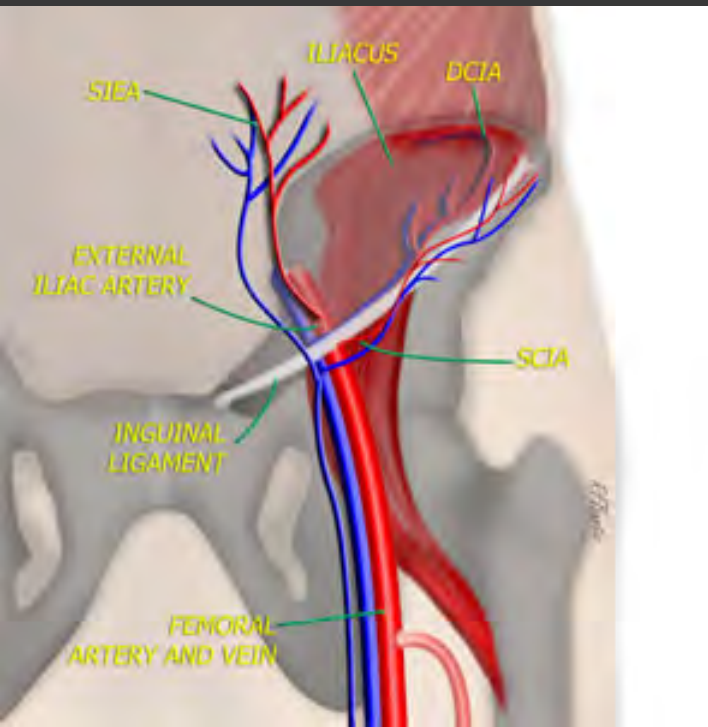
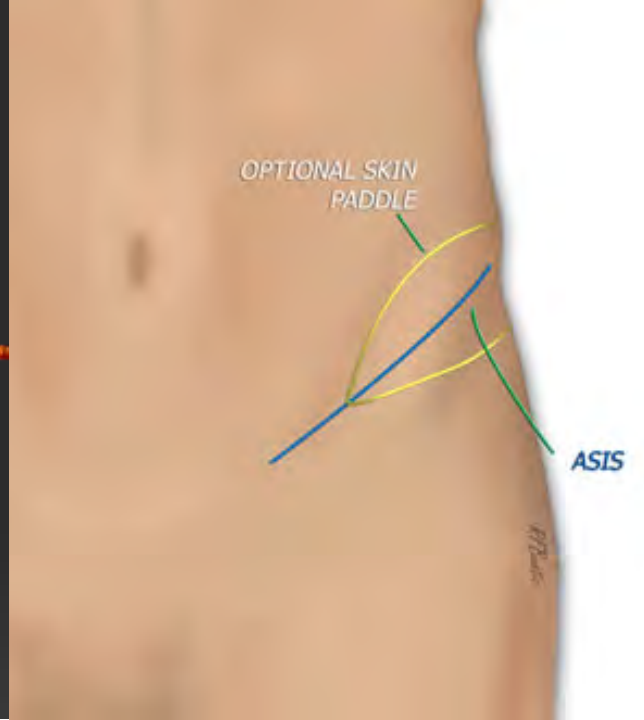
- Good bone stock and length
- O.I possible
- Less osteotomies
- Axial supply
- Can use in vasculopathies
- Best for disarticulation

Disadv

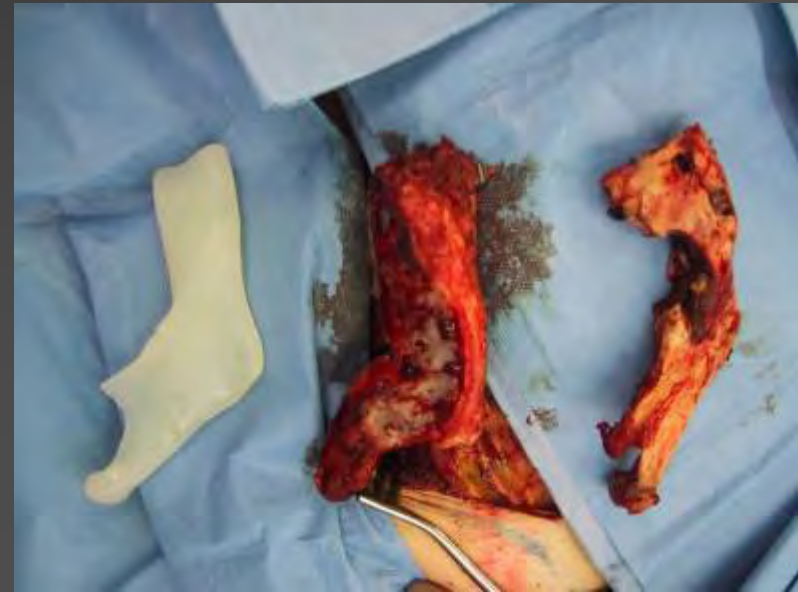
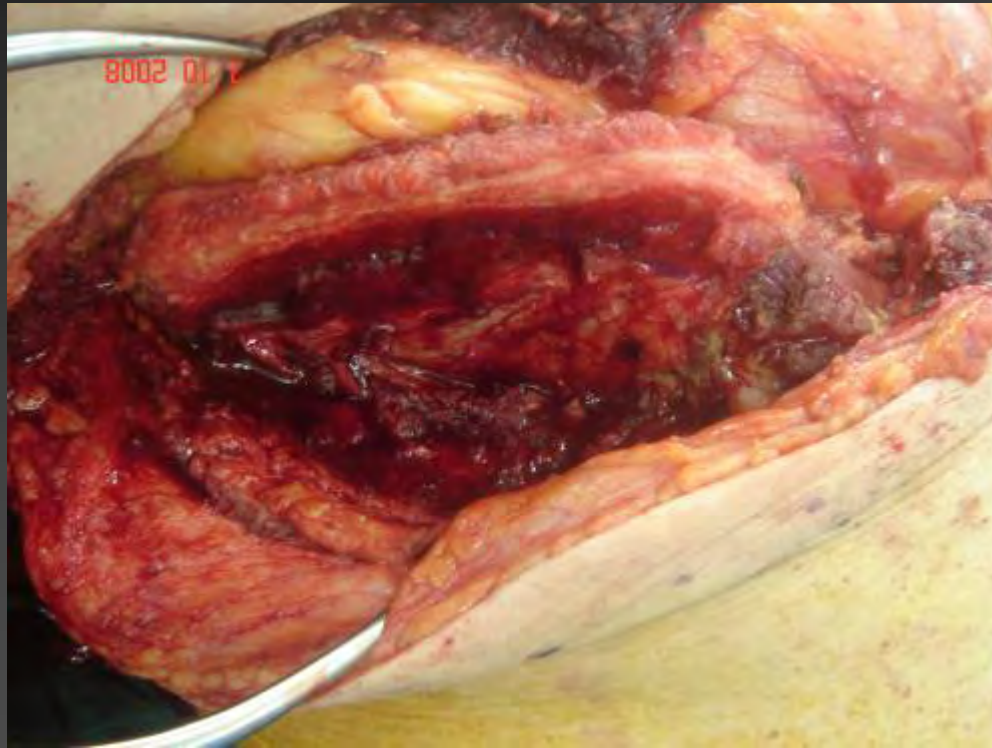
- Short & small pedicle
- Skin paddle unreliable - CTA
- Skin best for cover
- Donor – hernia



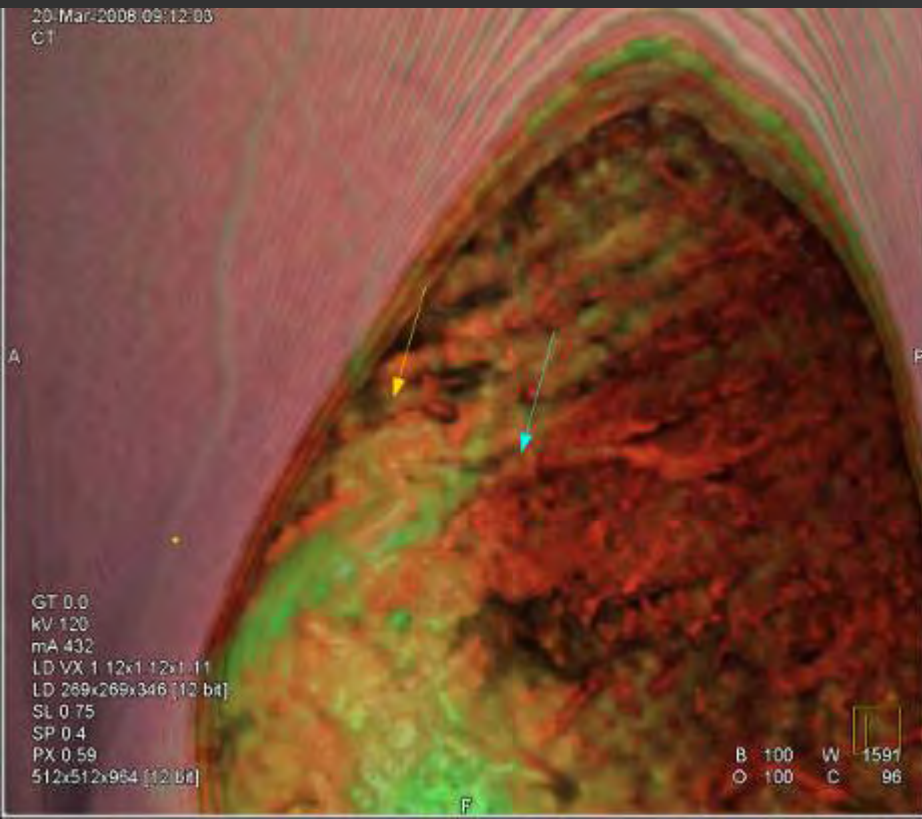
Anatomy



DCIA Dissection



DCIA perforator flap



OPG



Postop



Osteocutaneous RAFF = Poor

Adv

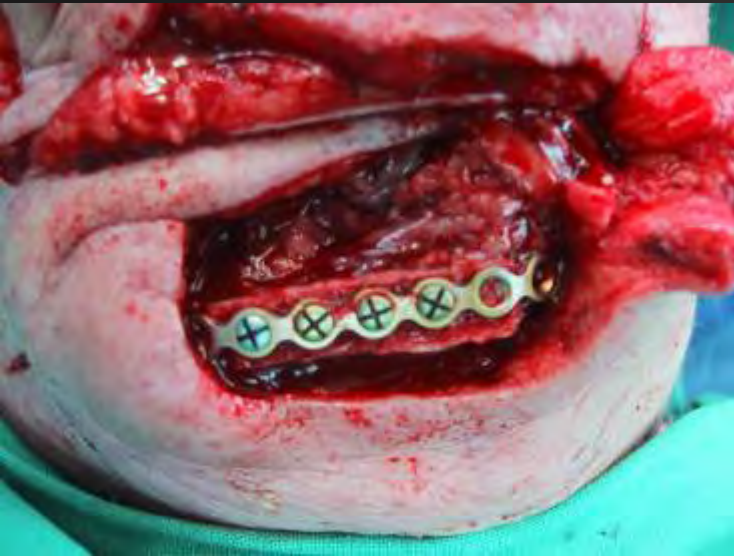
Disadv

- Thin pliable lining
- Long and big pedicle
- Consider only in thin atrophic mandibles with anterior defects

- 1/3 # radius
- SSG donor
- Poor quality bone
- No O.I.



RAFF



Scapula = 3rd line

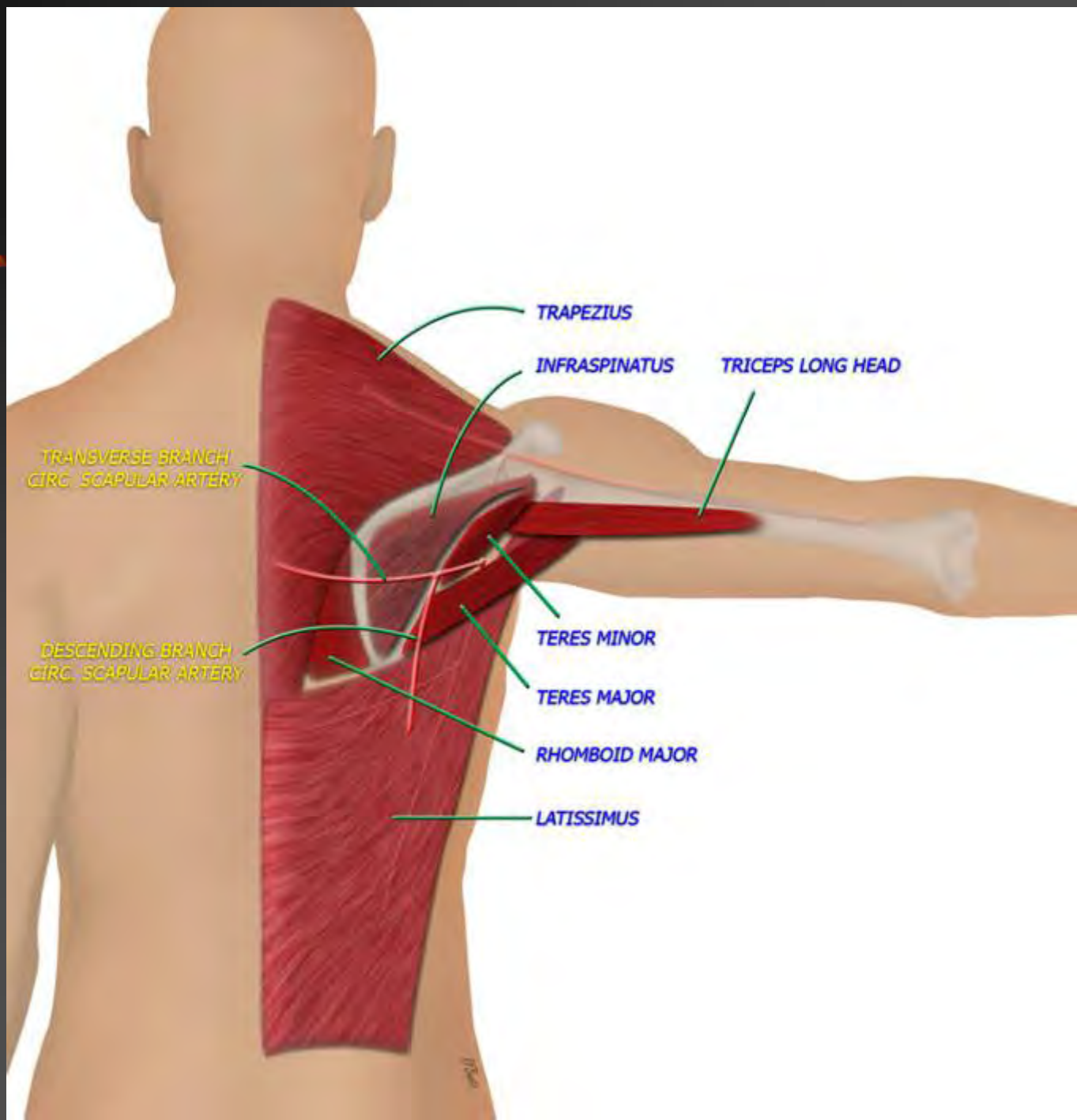
Adv

- Chimeric flaps possible
- Good pedicle length and calibre
- Use in vasculopathies
- Very large skin paddle available

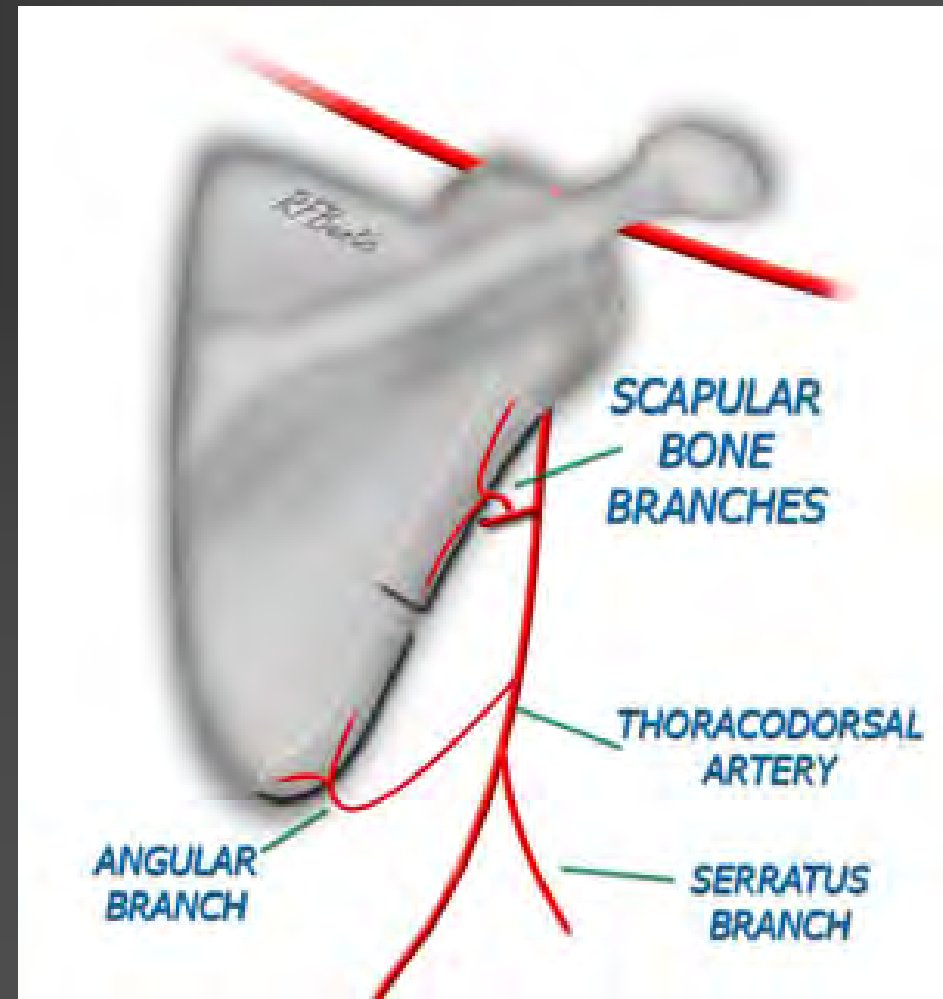
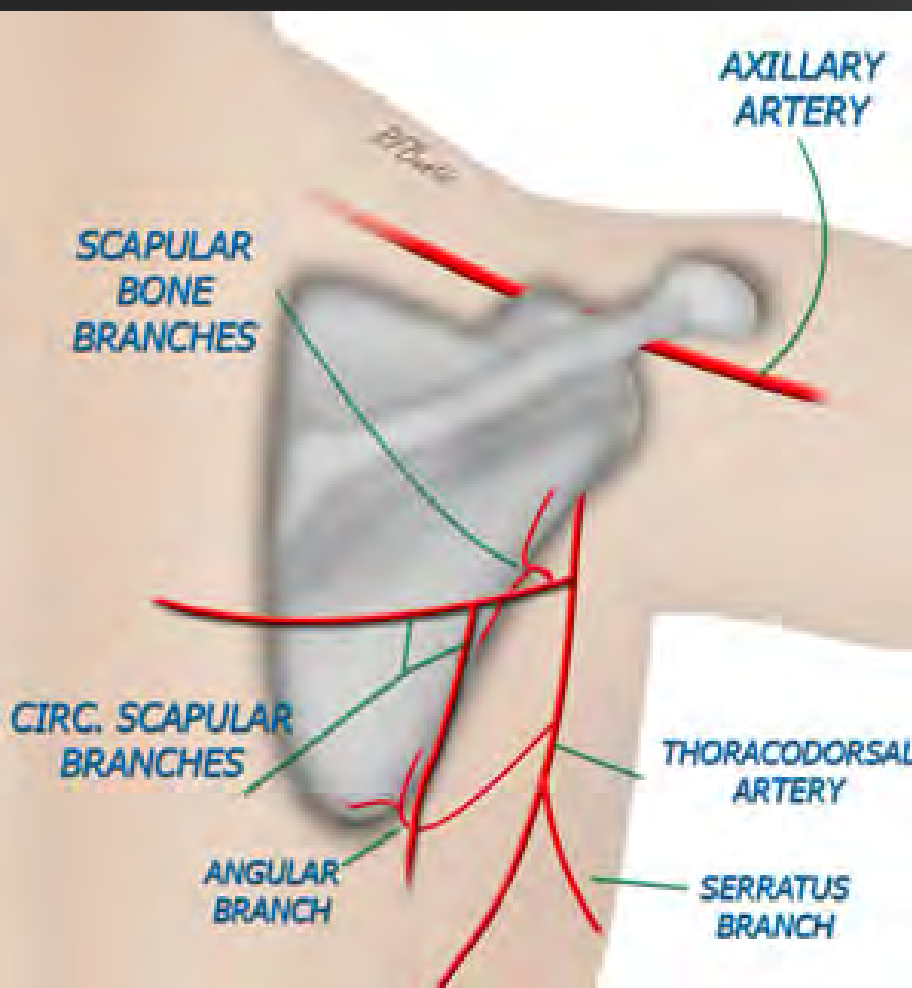
Disadv

- Poor bone stock
- Reposition patient

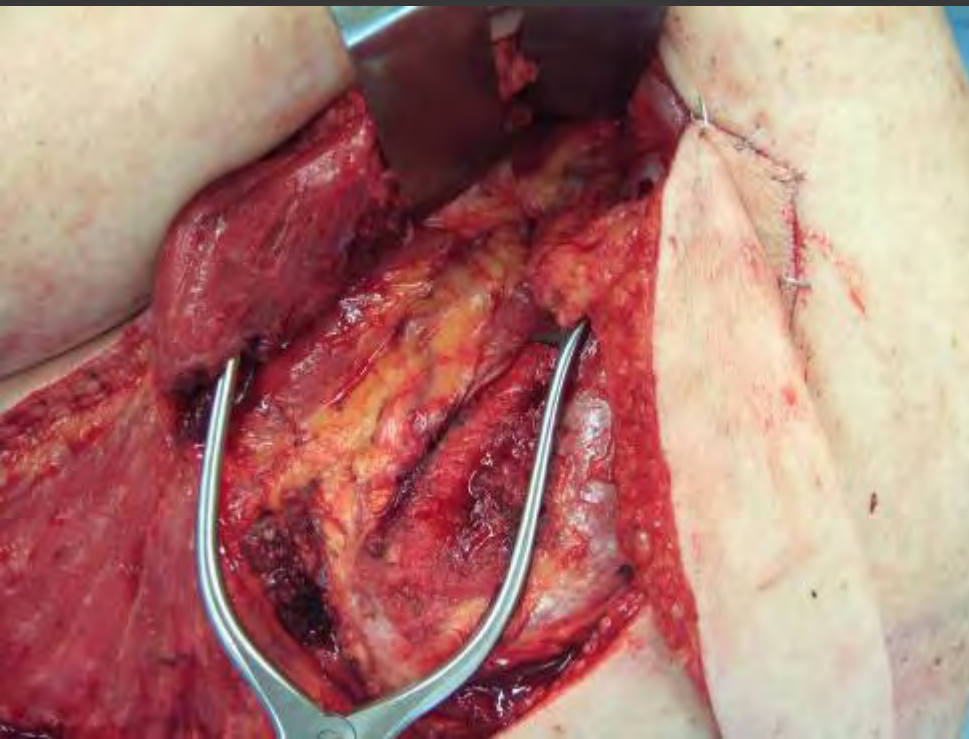
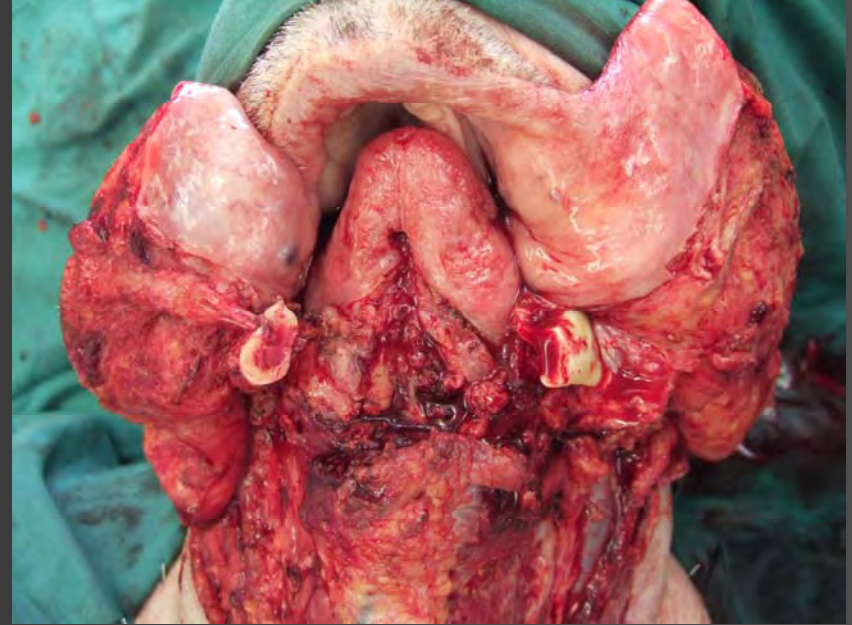




Scapula bone flaps



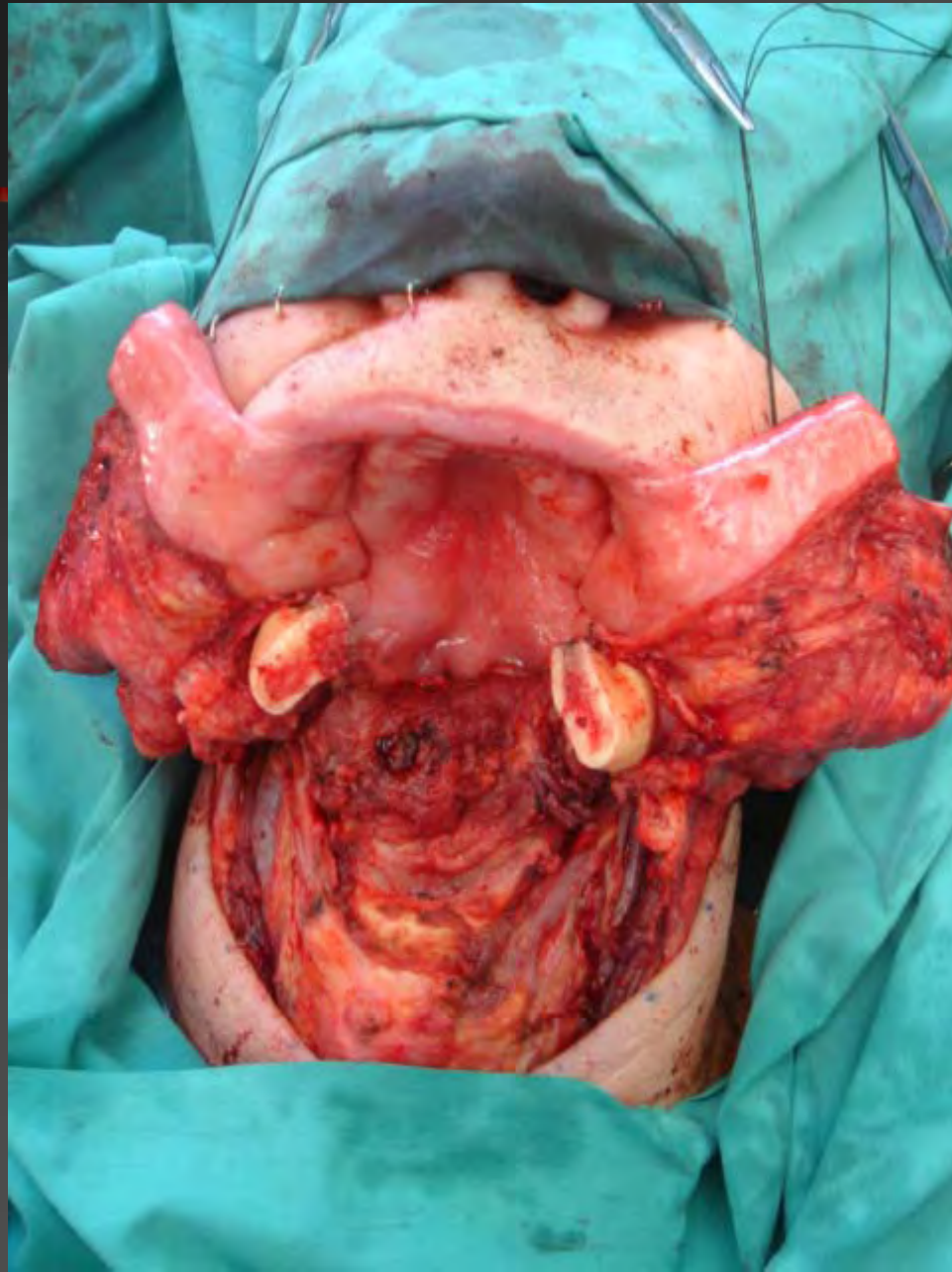
Scapula Dissection

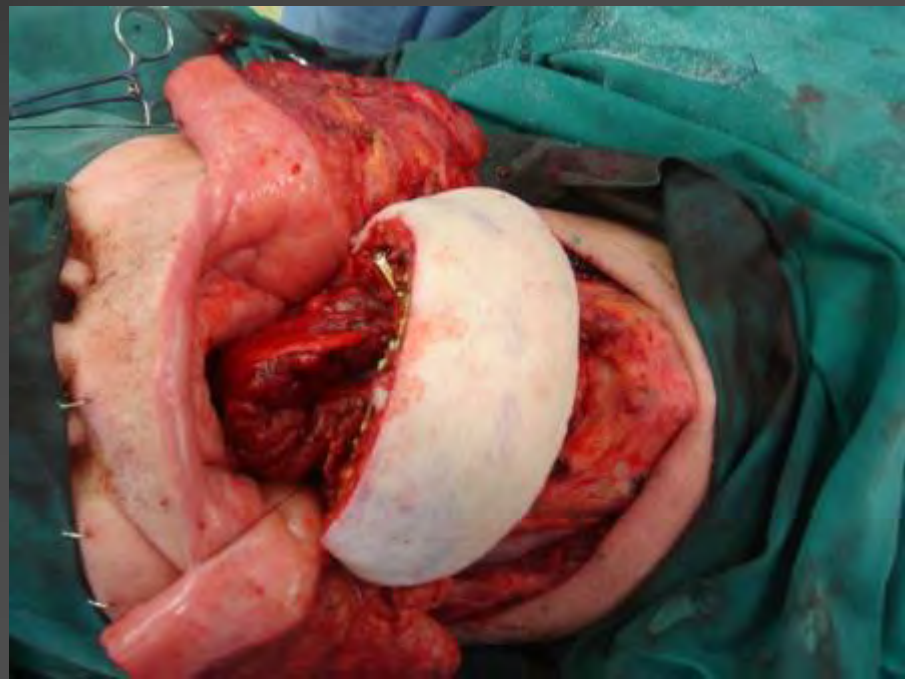
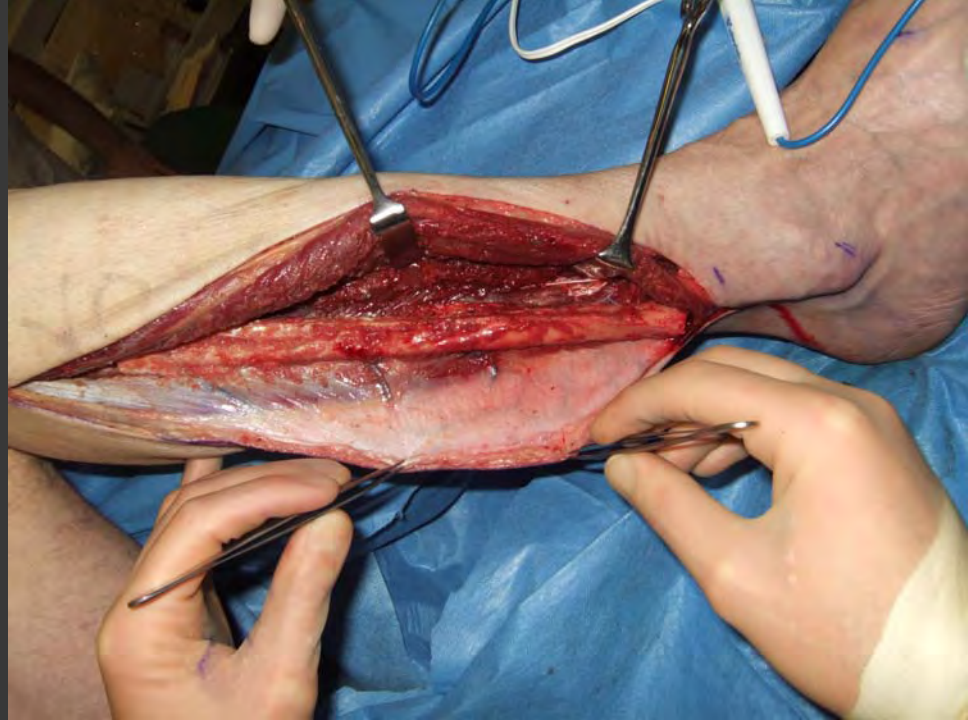


Technical considerations

- Inset of flap
 - Best attempt is the 1st
 - Plating – compression
 - Re-attach anterior muscles
 - Suspend the larynx/hyoid
 - Don't reattach masseter/temporalis
 - ECA/IJV
-

Composite defects





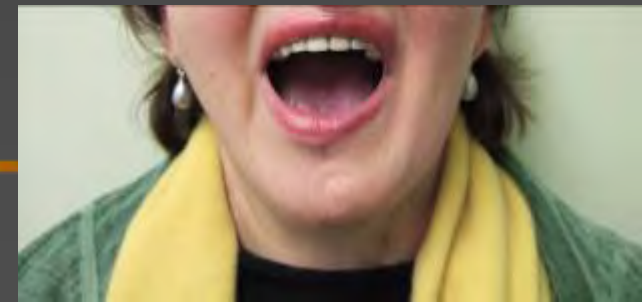
Pearls for difficult recon

- Preplate wherever possible esp. if dentate
 - Prox. Mandible will collapse and rotate medially

 - Fibula and hemisoleus
 - DCIA and iliacus, internal oblique
 - Scapula – multiple chimeric flaps
 - Contralateral neck for vessels
 - Cephalic turn up for vein
-

Personal views

- FHL good for small lining defects
- 1 flap > 2
- Free flap > pec major
- Free bone > free soft tissue
- 2 veins > 1



Summary

- Workhorse= Fibula
- Disarticulation= DCIA
- Salvage/ large skin defect= Scapula



Questions??
