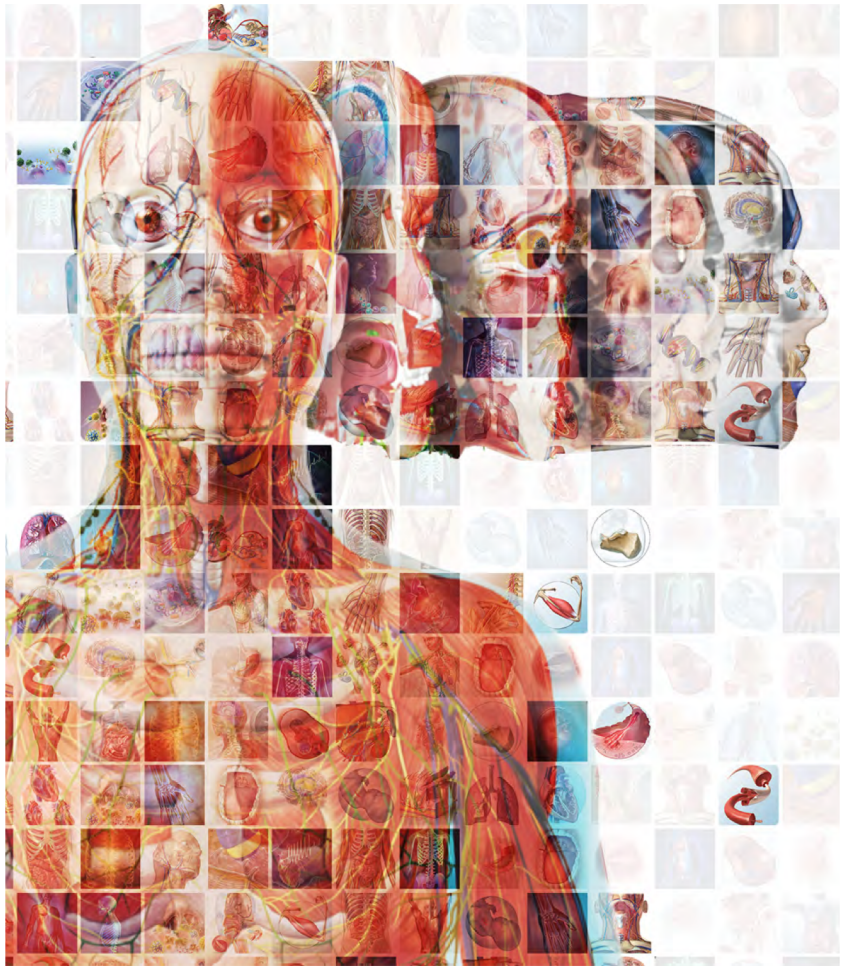
Κακοήθεις όγκοι και αποκατάσταση

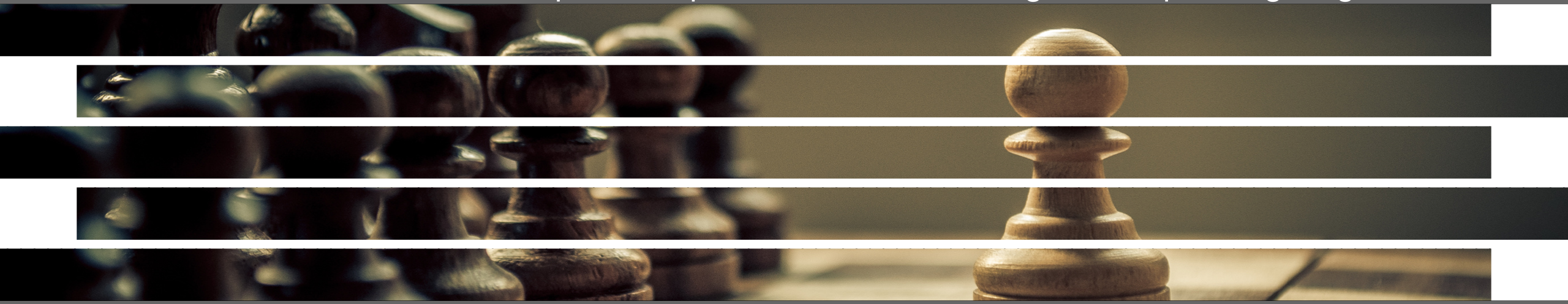


Καθηγητής Χρήστος Περισανίδης

surgical approaches

✓ surgical factors:

- preservation of anatomical structures
- adequate access to surgical site
- safe surgery (e.g. tumor removal without rupture)
- control of bleeding
- aesthetic outcome
- personal preferences and training of the operating surgeon



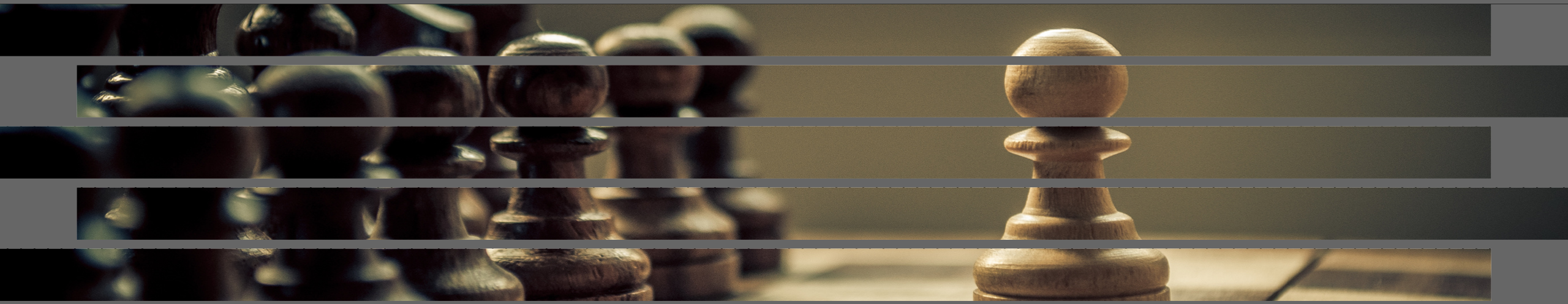
✓ patient factors:

- age
- general medical condition
- lifestyle (smoking/drinking)
- previous treatment

surgical approaches

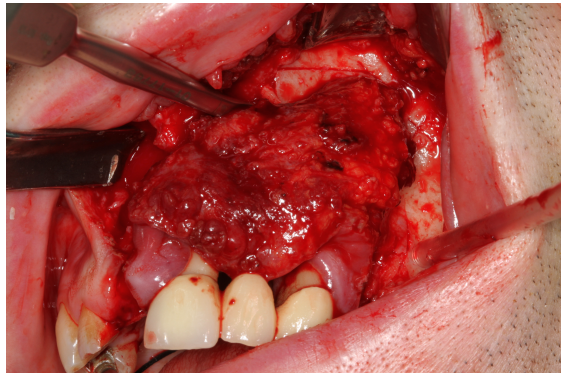
✓ tumor factors:

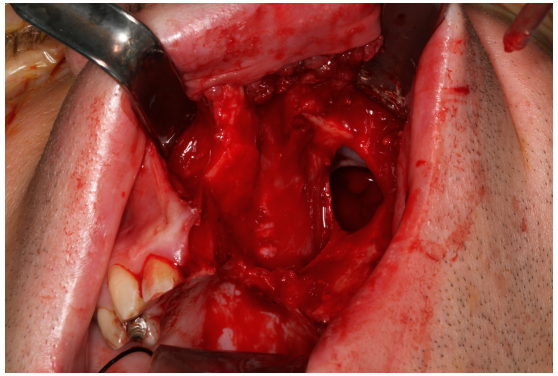
- location
- relationship to anatomical structures
- size
- histology
- vascularity



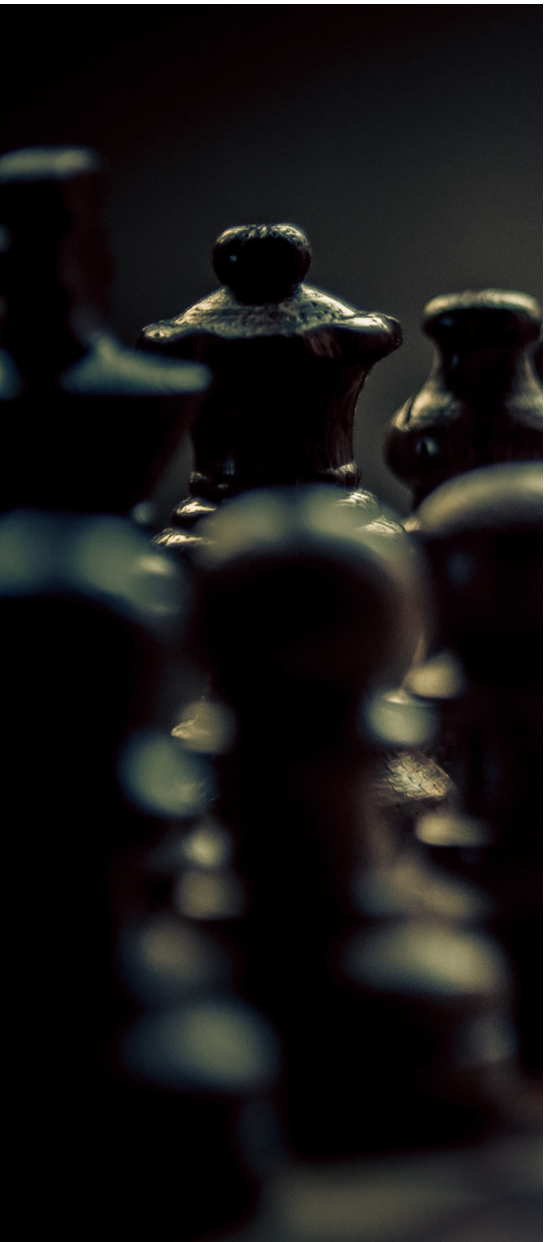
approaches to the oral cavity

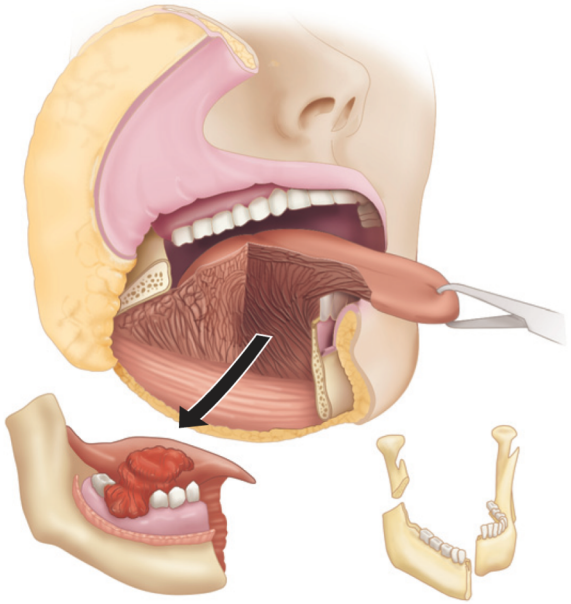
intraoral approach



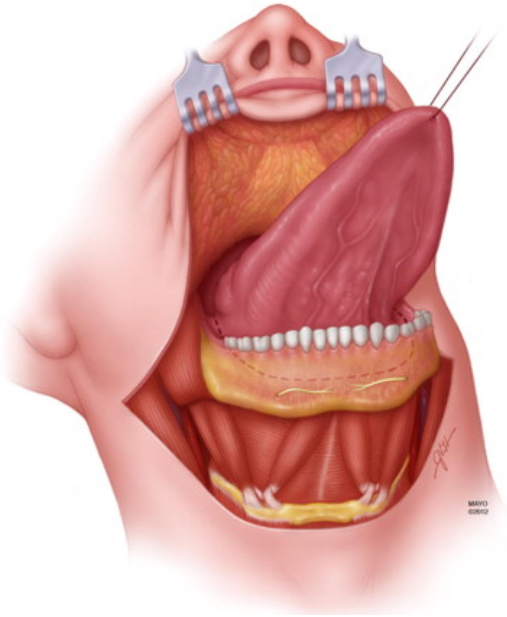


approaches to the oral cavity

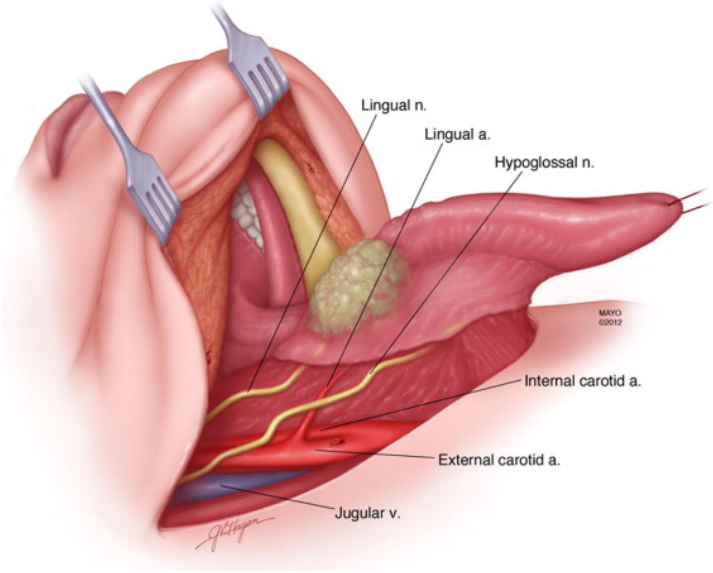




mandibulectomy – lower cheek flap

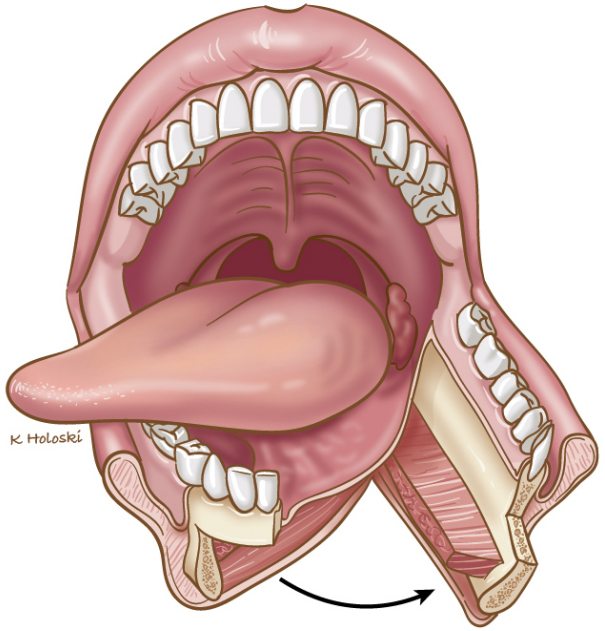


visor flap

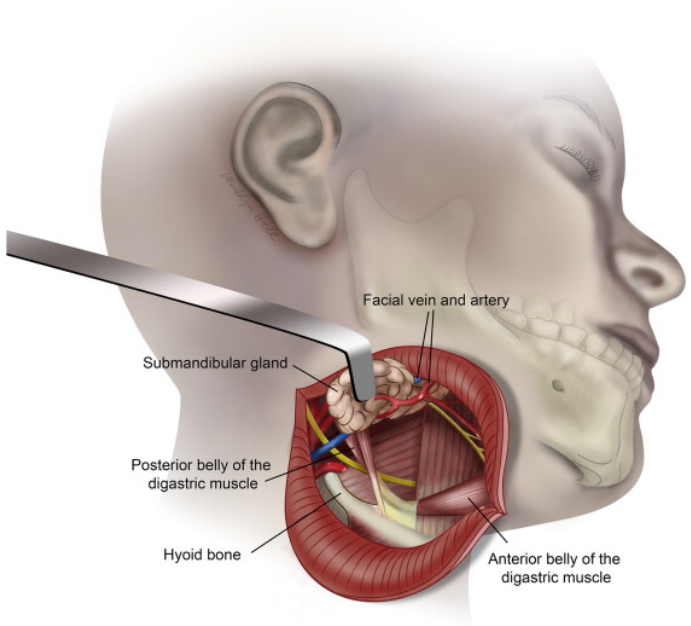


pull through approach

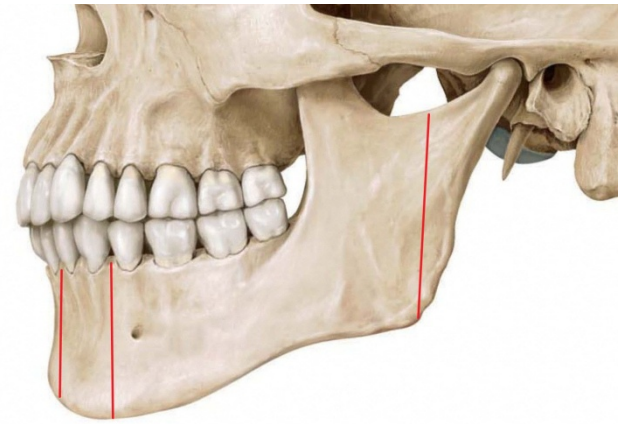
approaches to the oropharynx and parapharyngeal space



transmandibular approach

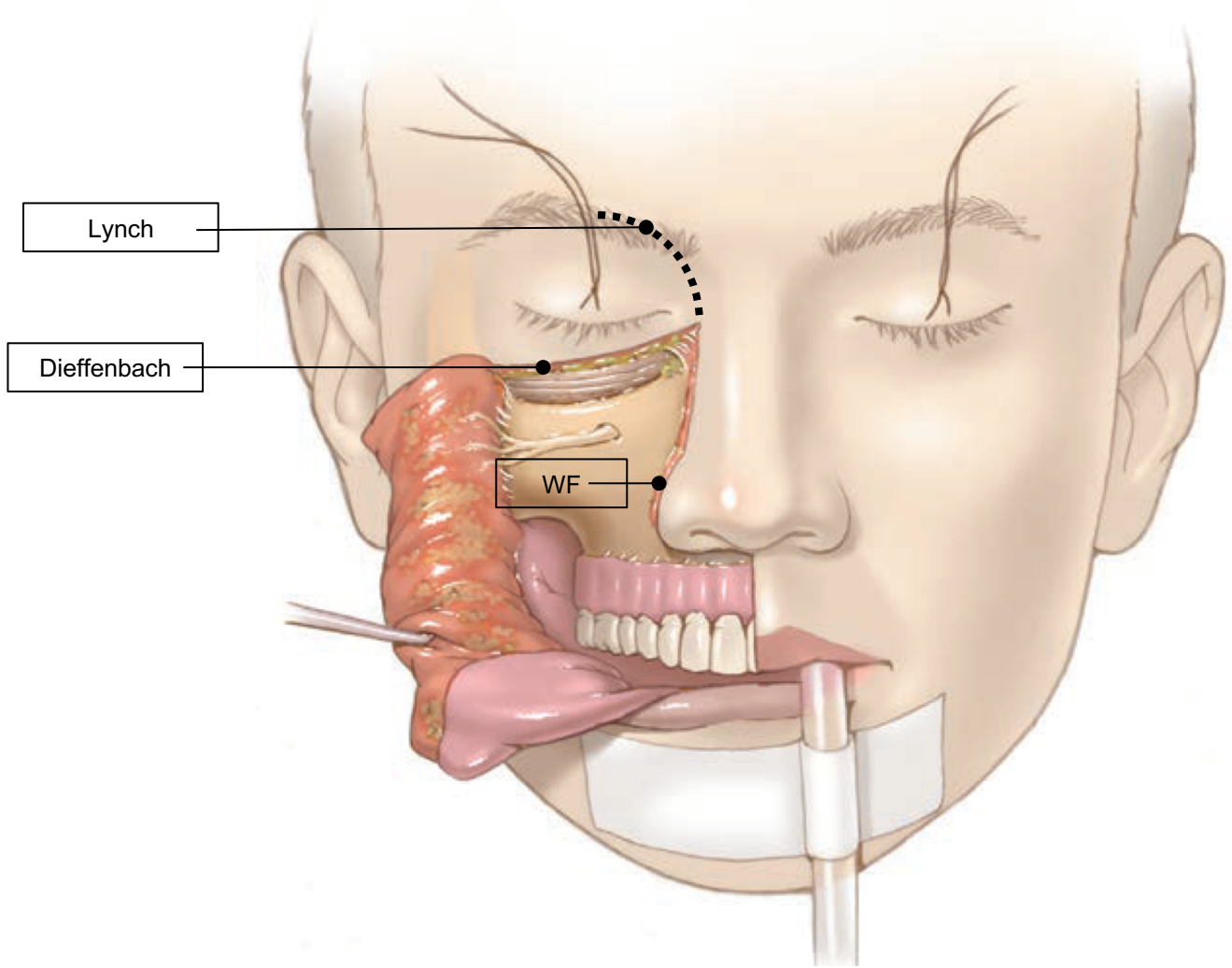


transcervical / transpharyngeal approach



double mandibulotomy approach

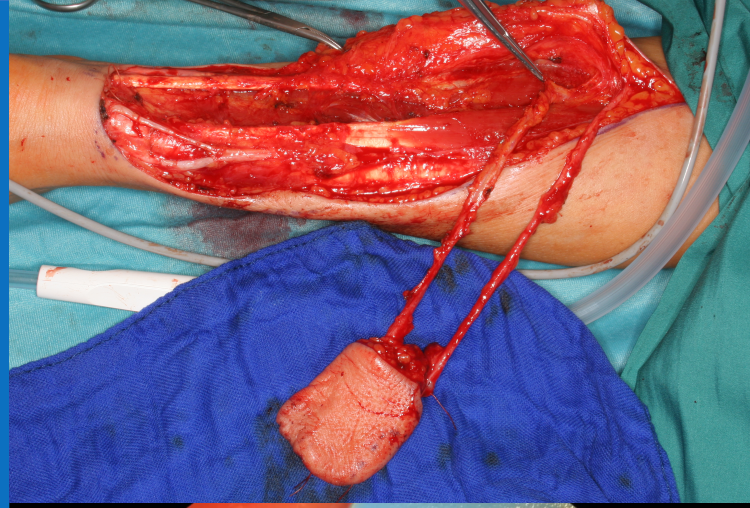
Weber-Ferguson approach

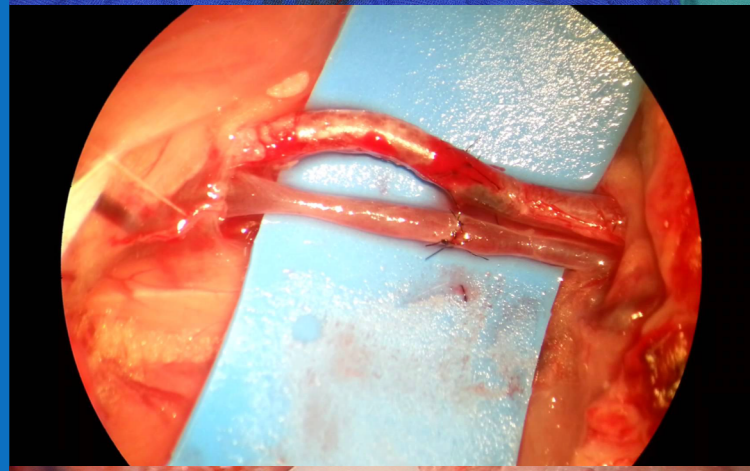


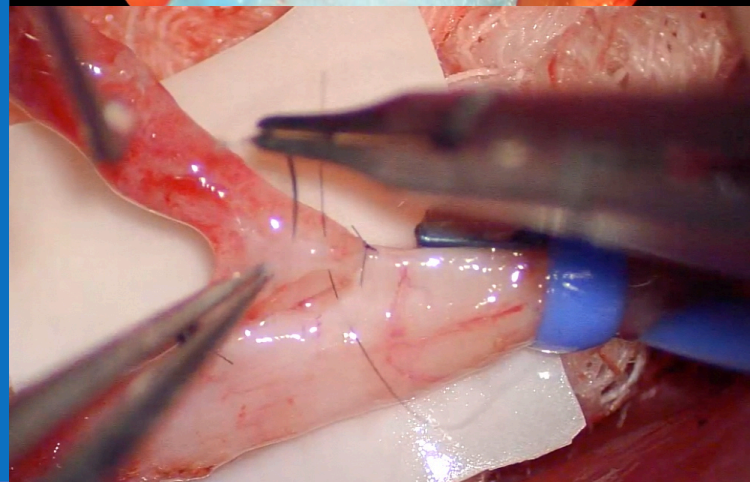
reconstructive ladder

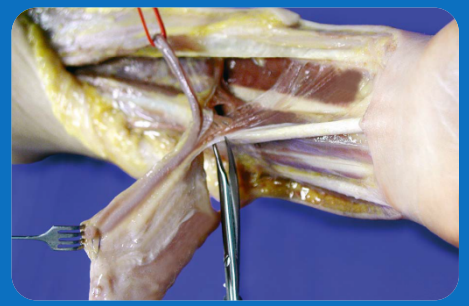
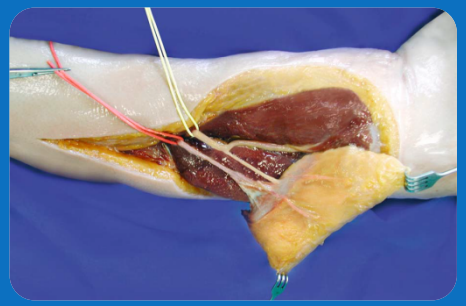
healing by secondary intention
primary closure
skin grafts
local and regional-pedicled flaps
free flaps

microvascular surgery

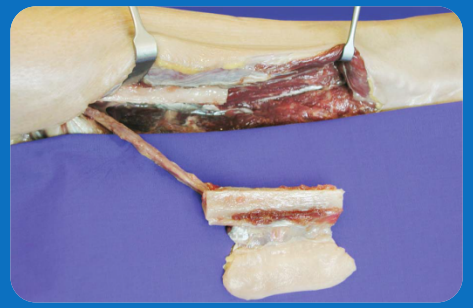
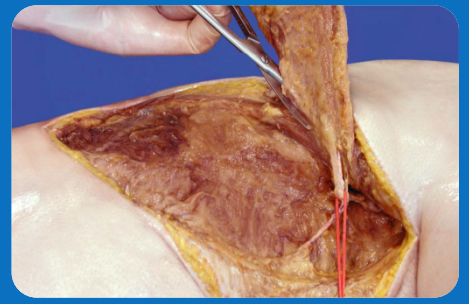
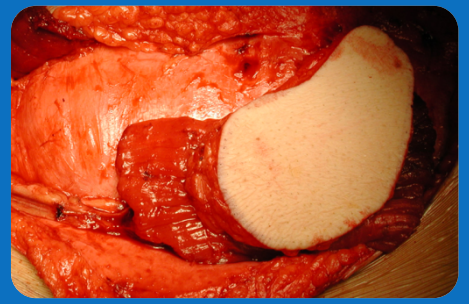
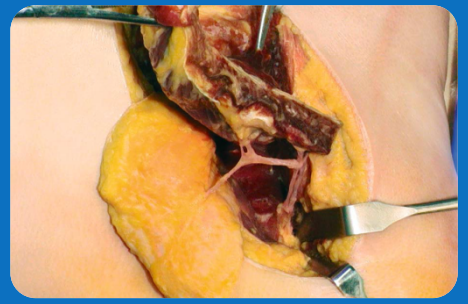







microvascular surgery

goals of free flap reconstruction

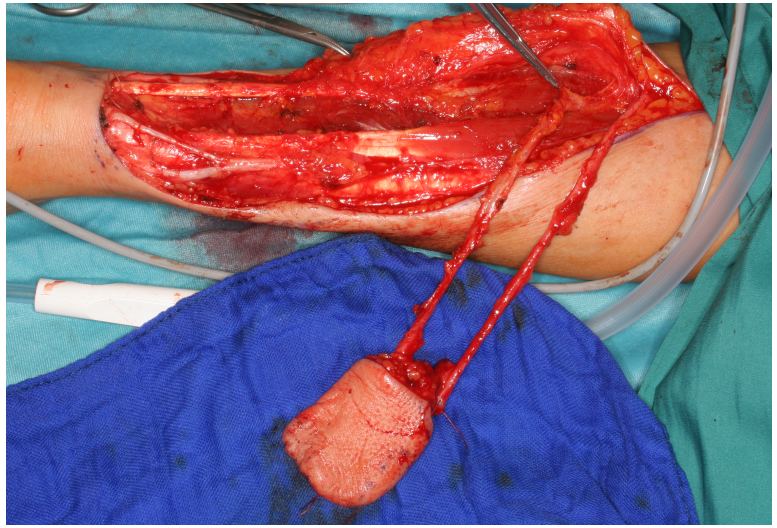
restoring
continuity

restoring
function

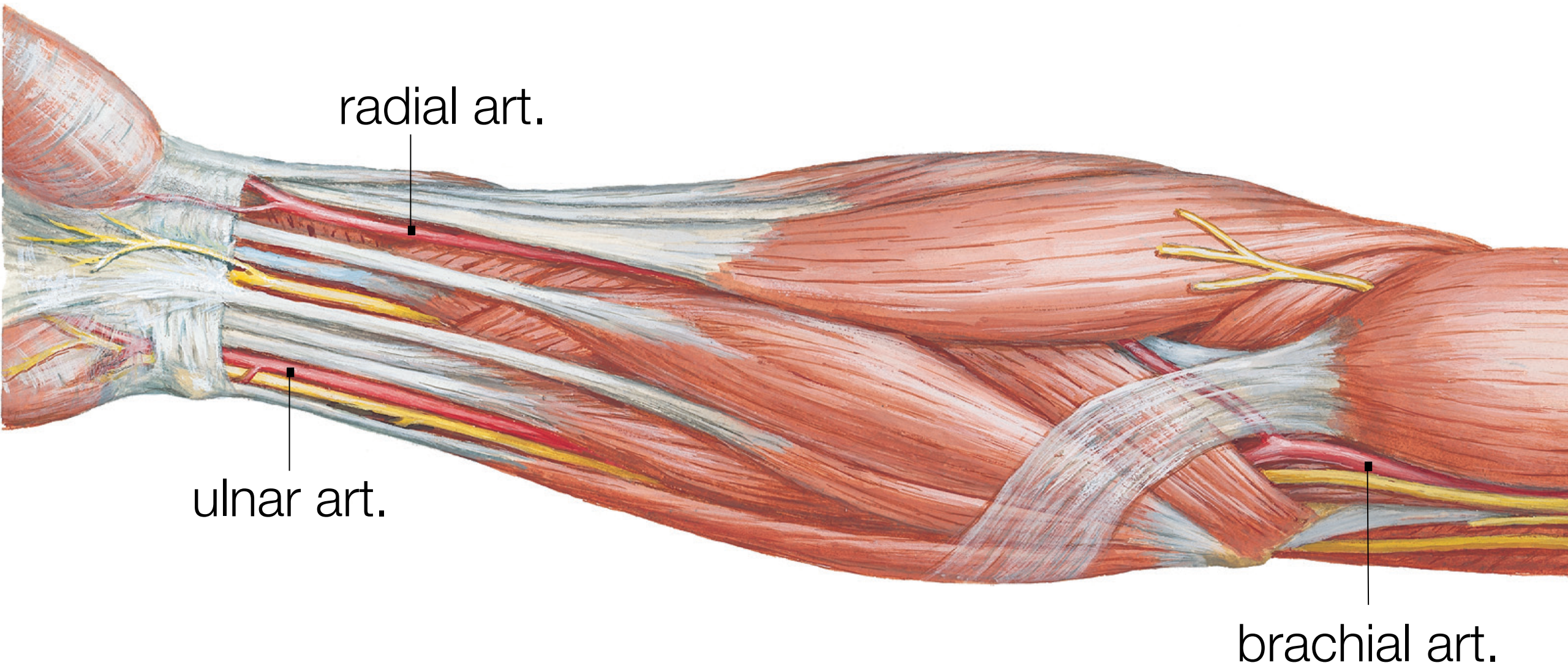
restoring
facial symmetry

radial forearm flap

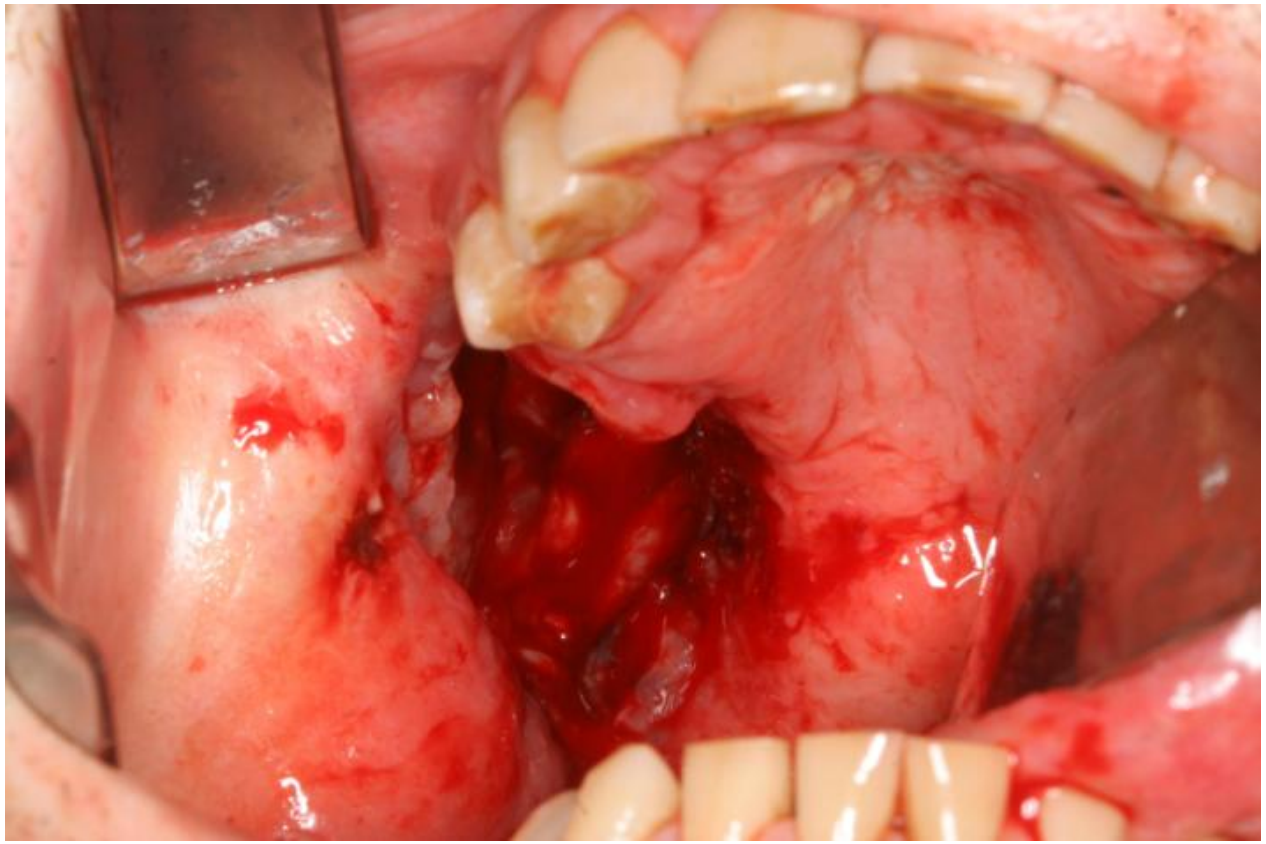
advantages	disadvantages
thin and pliable skin	sacrifice of radial artery
long and large pedicle	poorly aesthetic donor site
constant anatomy	need for skin graft
composite flap: inclusion of bone	risk of pathologic fracture
potential for sensate flap	
2-team approach	
ideal for intraoral lining	

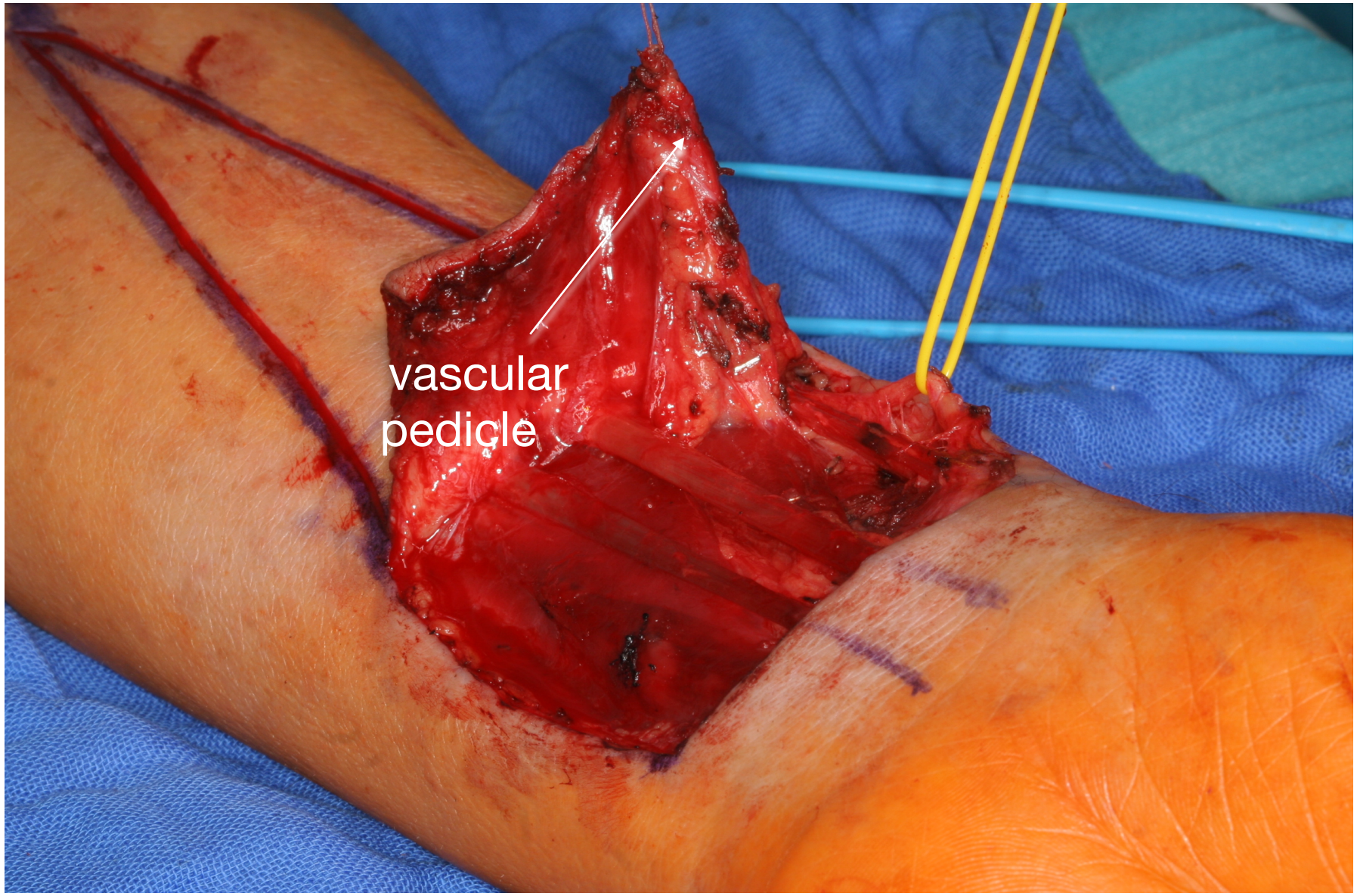


Topographic anatomy of the forearm



preoperative evaluation: Allen test




vascular
pedicle

comparison of soft tissue flaps

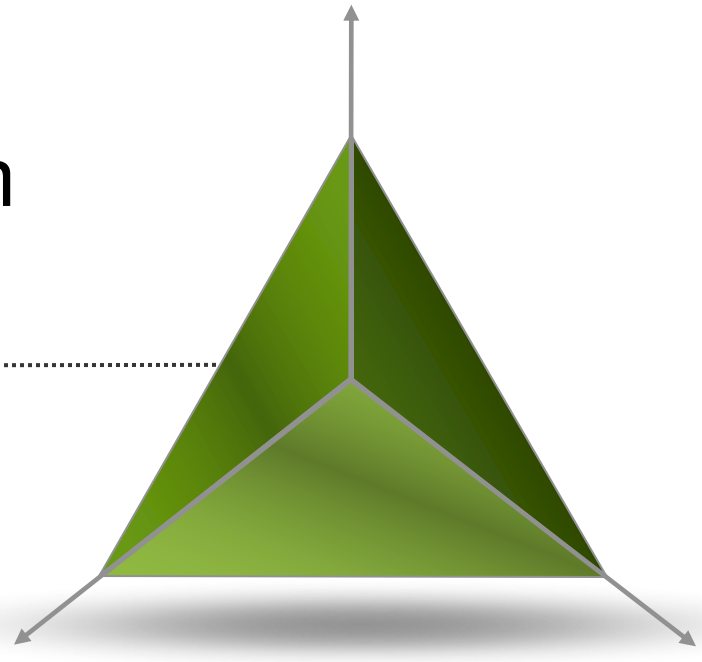
	ALT	radial forearm	latissimus dorsi
Dissection	Moderate	Easy	Easy
Anatomy	Variety	Constant	Constant
Thickness	Moderate	Thin	Thick
Thinning potential	Yes	No	No
Pedicle length	Long	Long	Long
Pedicle caliber	Large	Large	Large
Donor site morbidity	Low	High	Low

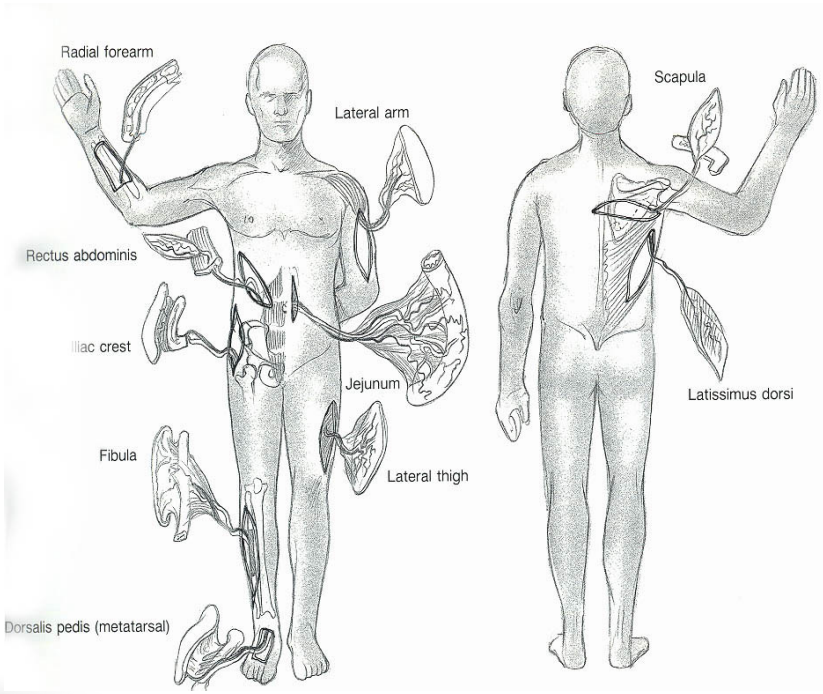
Bone free flap options

Fibula

Radial forearm

Femur



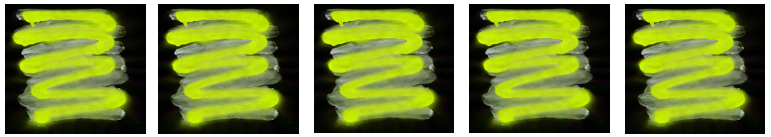


Iliac crest

Scapula

Comparison of bone flaps

Bone lenght

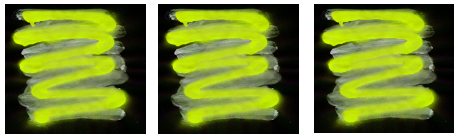
Fibula  (25 cm)

Iliac crest  (14 cm)

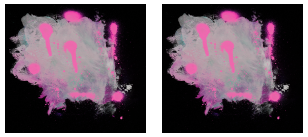
Scapula  (14 cm)

Comparison of bone flaps

Bone quality

Fibula 

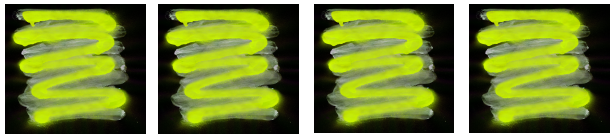
Iliac crest 

Scapula 

Comparison of bone flaps

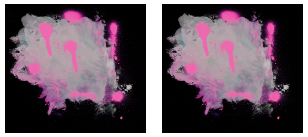
Bone contouring

Fibula



Iliac crest

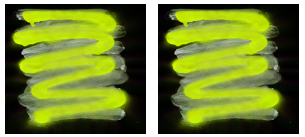
Scapula



Comparison of bone flaps

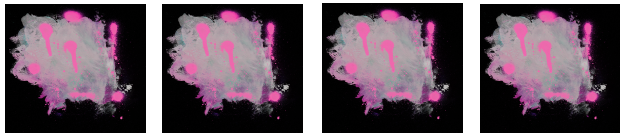
Amount of soft tissue available

Fibula

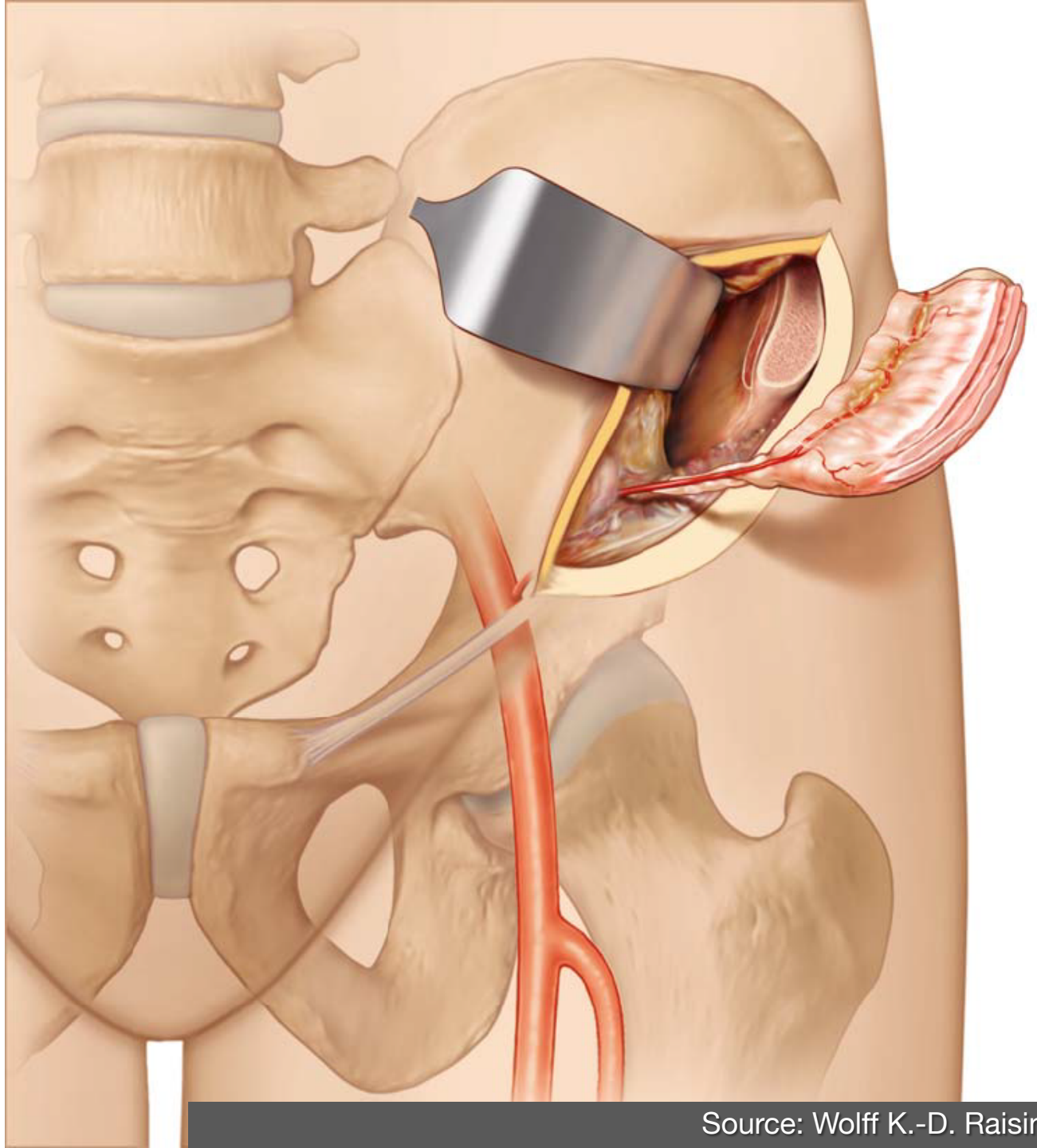


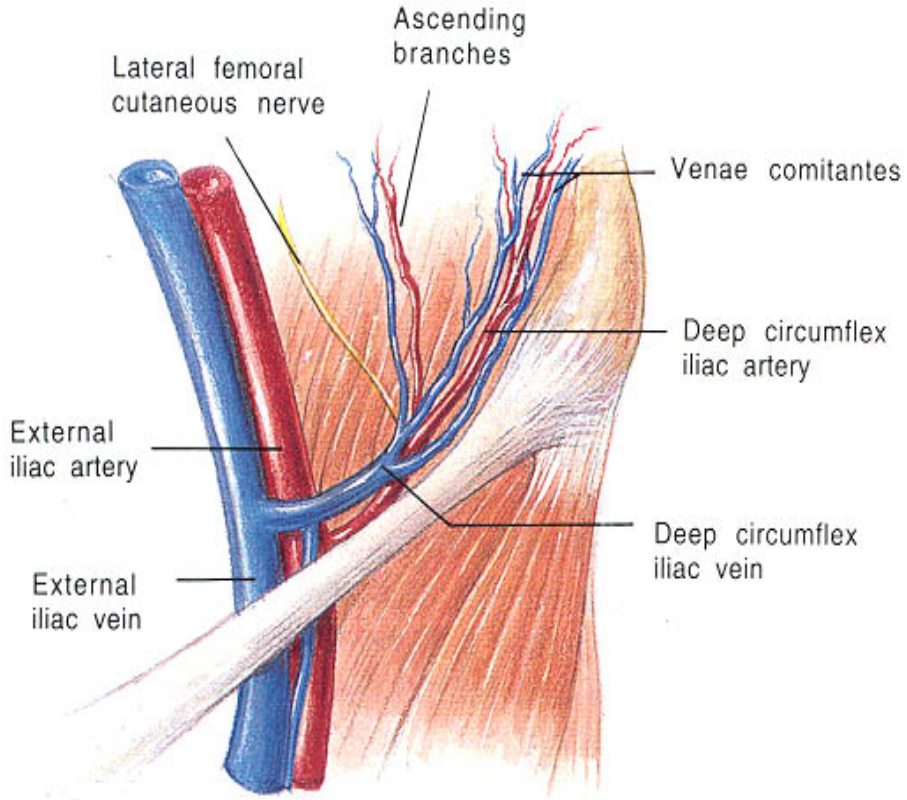
Iliac crest

Scapula



Iliac crest flap





Source: Wolff K.-D. Raising of Microvascular Flaps- A Systematic Approach

Flap harvesting was described in anatomical studies by Taylor in 1979

Introduced for mandibular reconstruction by Urken in the 1990’s

Brown described its use for maxillary reconstruction in 2000

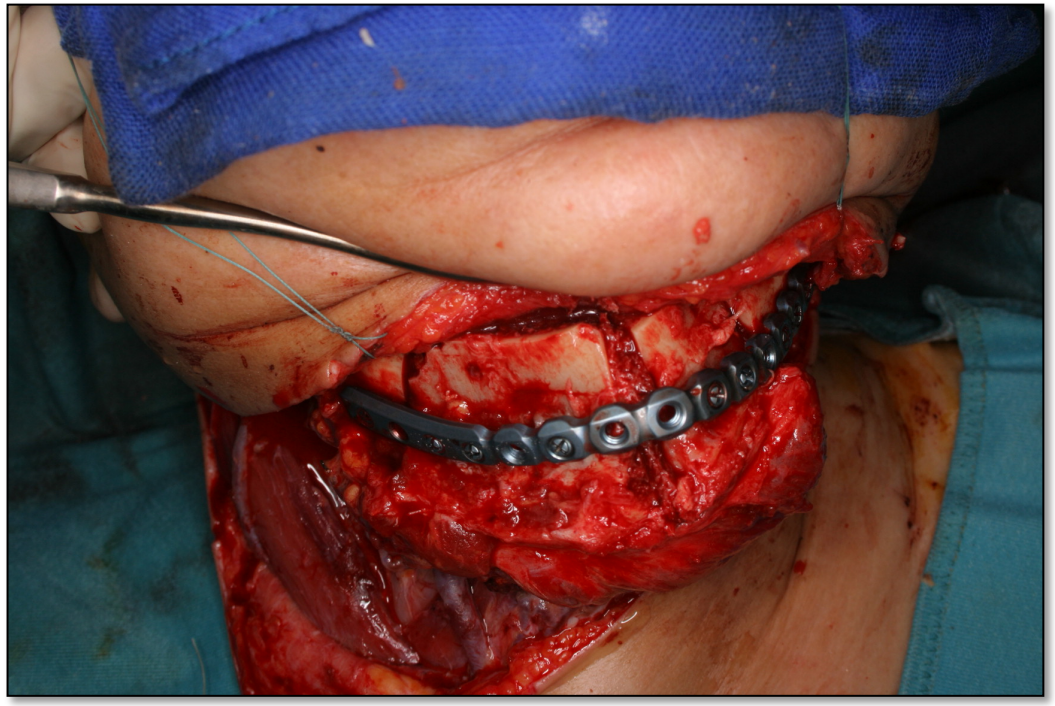
Advantages

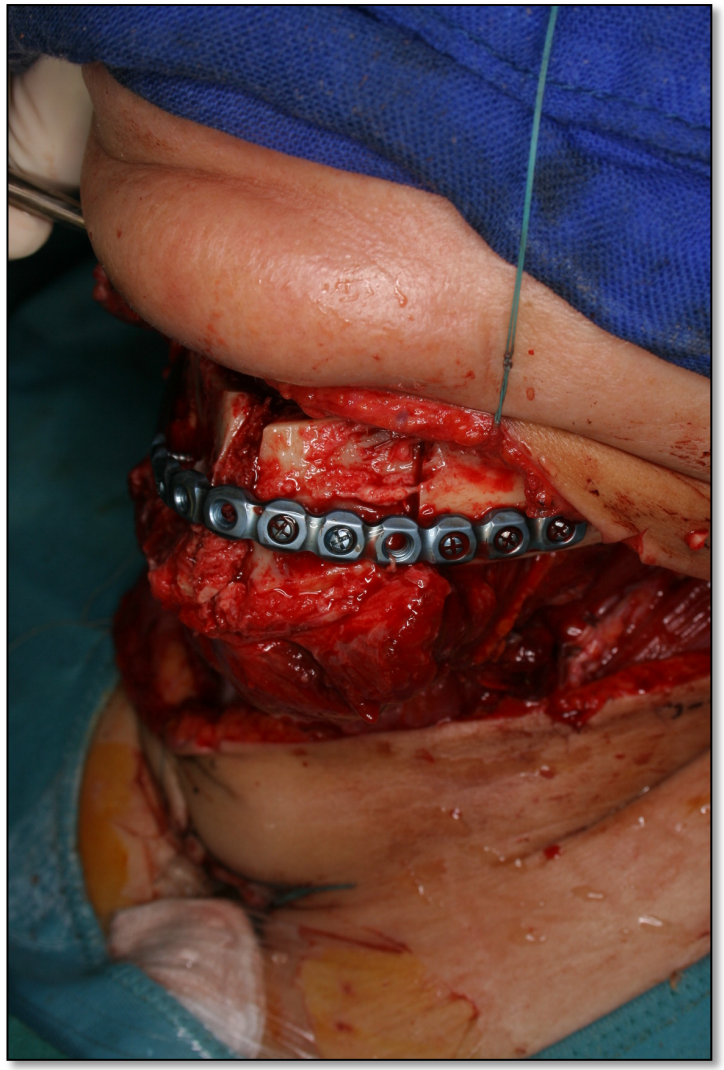
- ✓ Excellent bone quality
- ✓ Sufficient bone for implant placement
- ✓ Two-team approach

Disadvantages

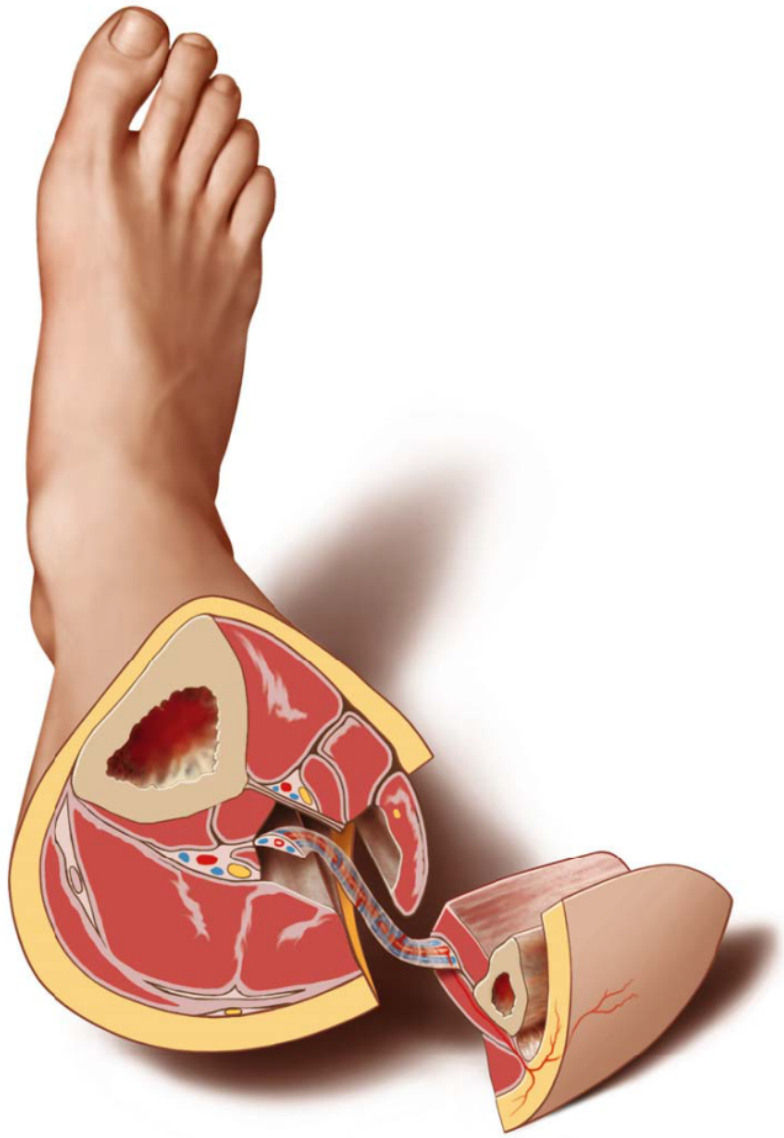
- ✓ Moderate donor-site morbidity
- ✓ Poorly mobile soft tissue component
- ✓ Reliability of the skin paddle has been questioned

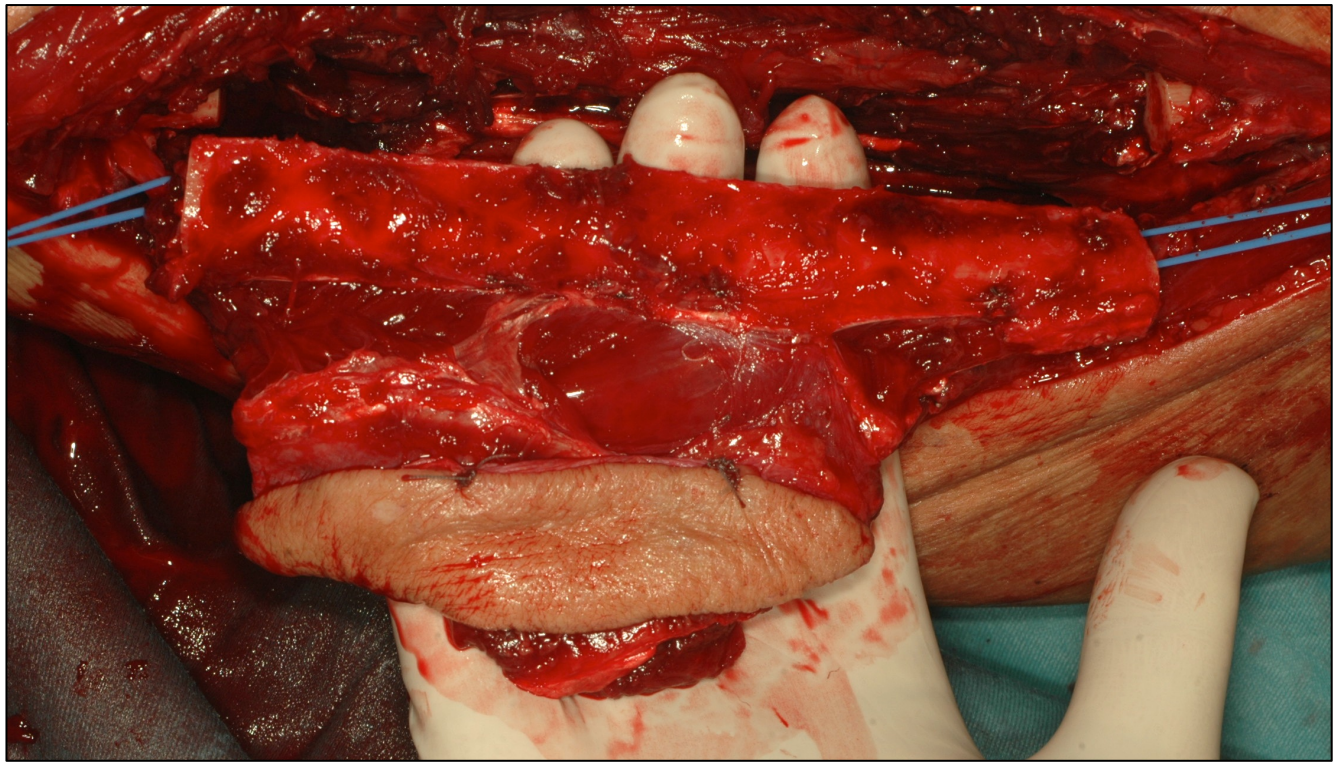
Iliac crest flap



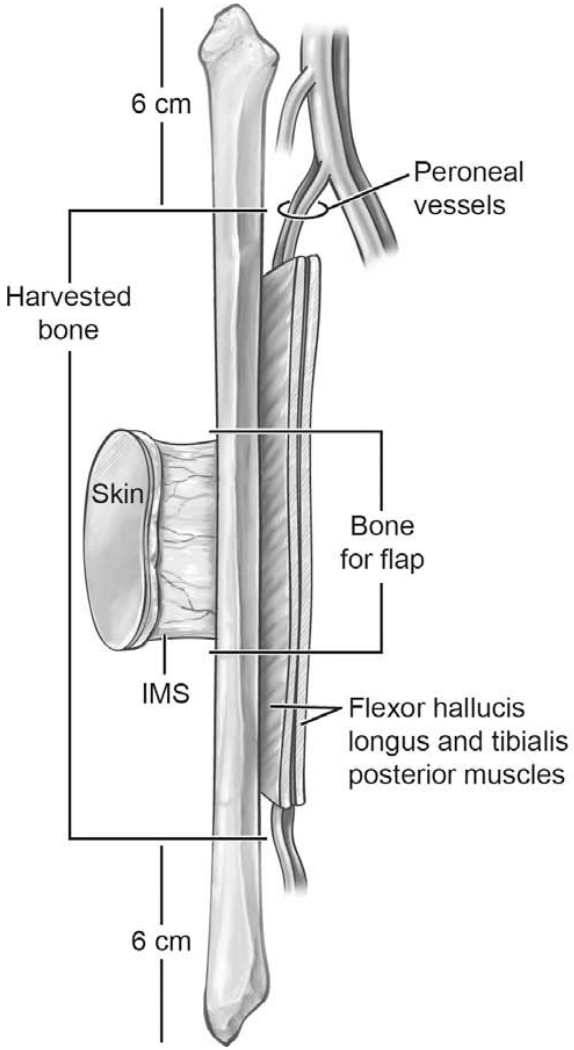


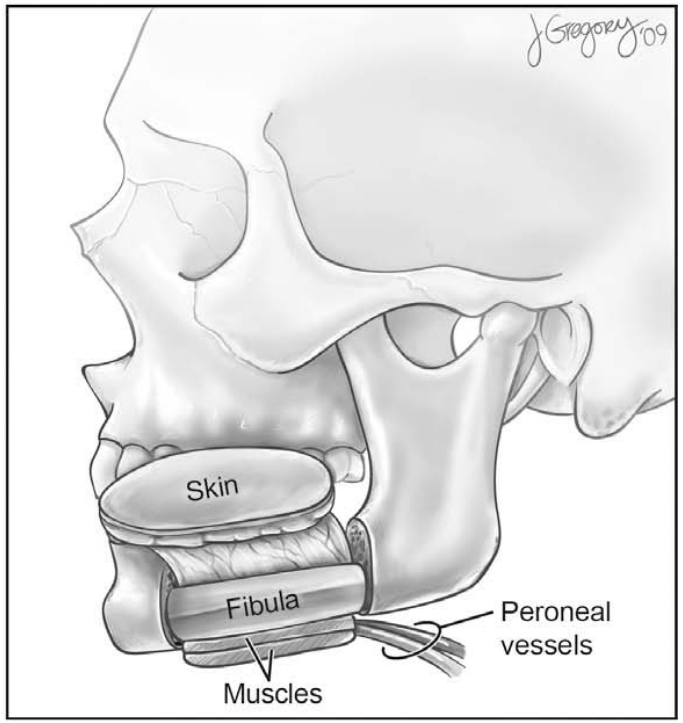
Fibula flap





Fibula flap



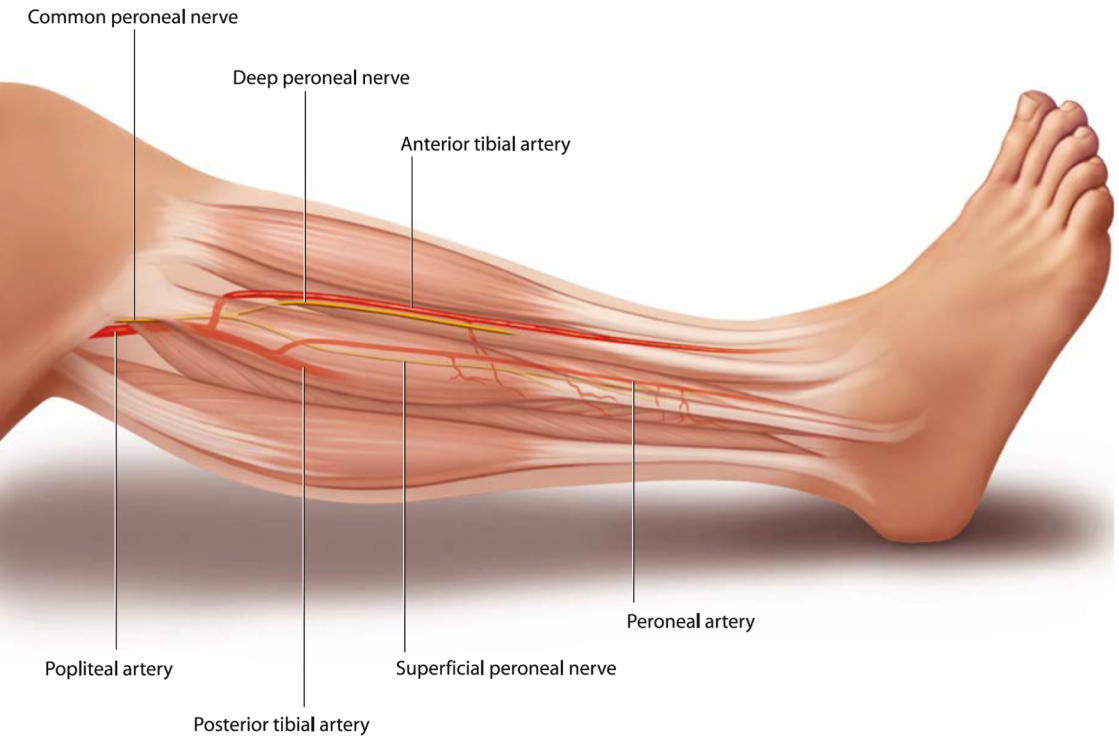


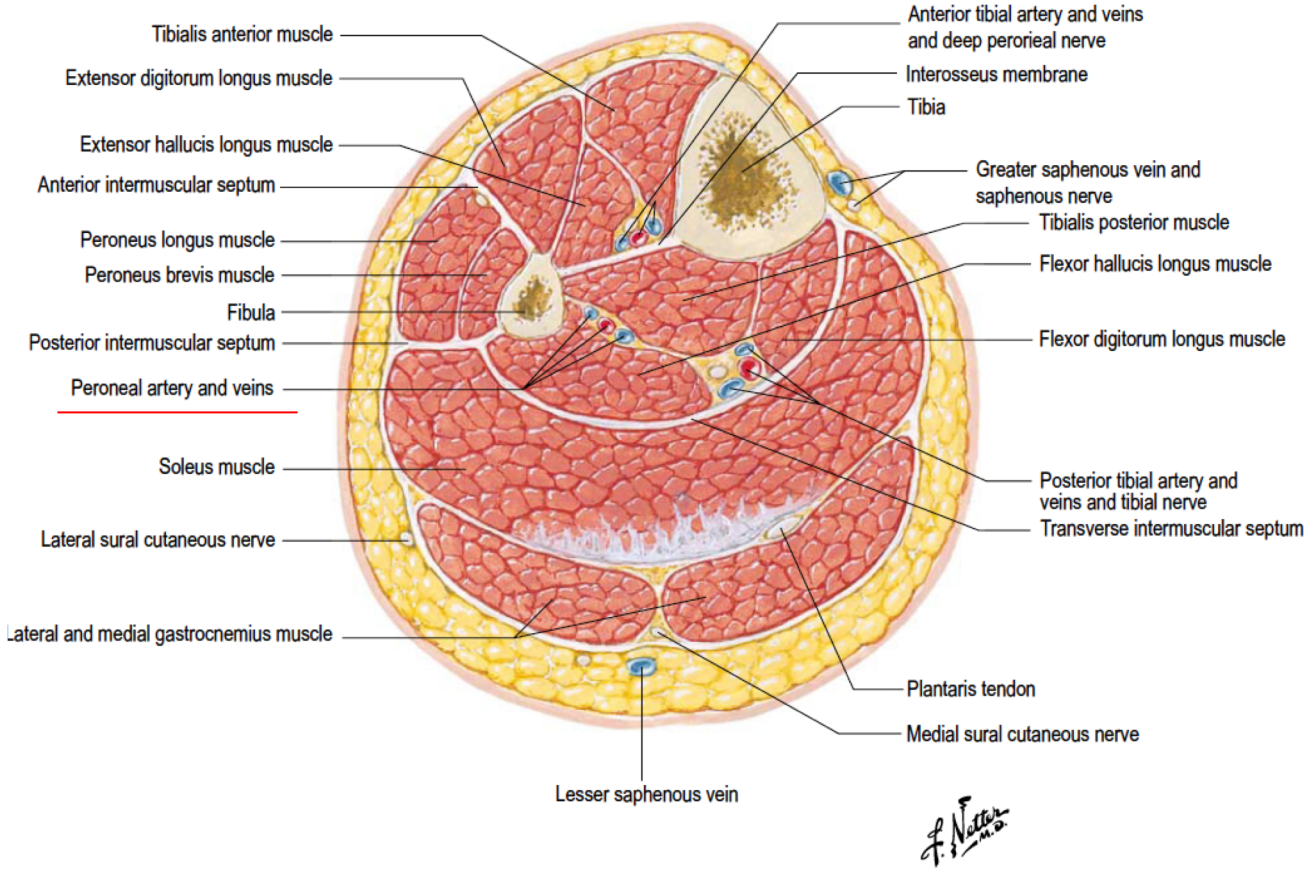
- ✓ originally described by Taylor in 1975
- ✓ popularized by Hidalgo for mandibular reconstruction in 1989

Fibula flap

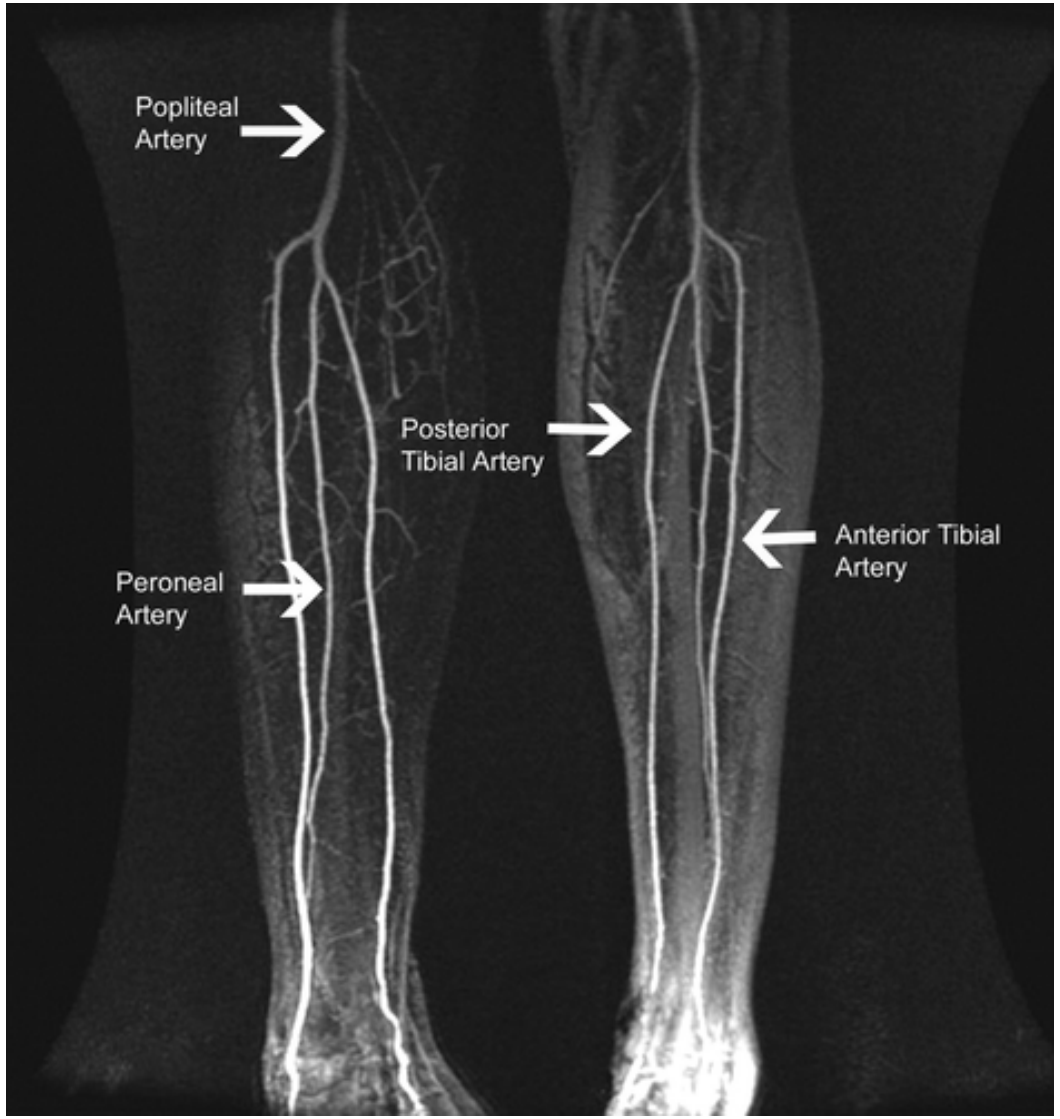
Advantages	Disadvantages
Up to 25 cm of bone available	Skin paddle small
Long pedicle (up to 12 cm)	Poorly aesthetic donor site
Constant anatomy	Need for skin graft
Potential for sensate flap	Reduced function of ankle joint
2-team approach	
Minimal morbidity	
Adequate for dental implants	
Skin paddle thin and pliable	

Surgical anatomy: vascular pedicle

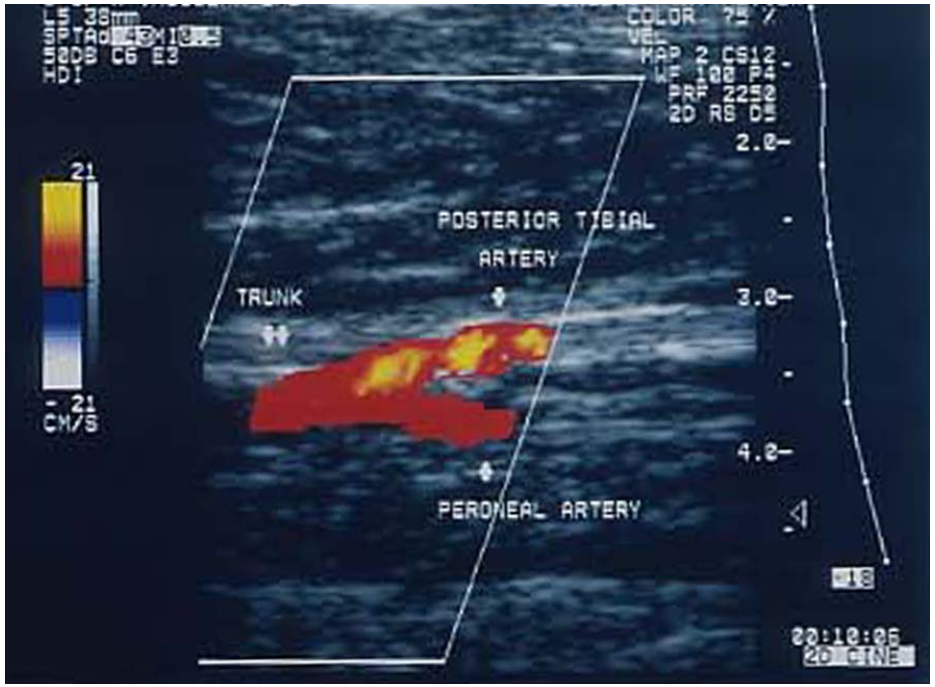


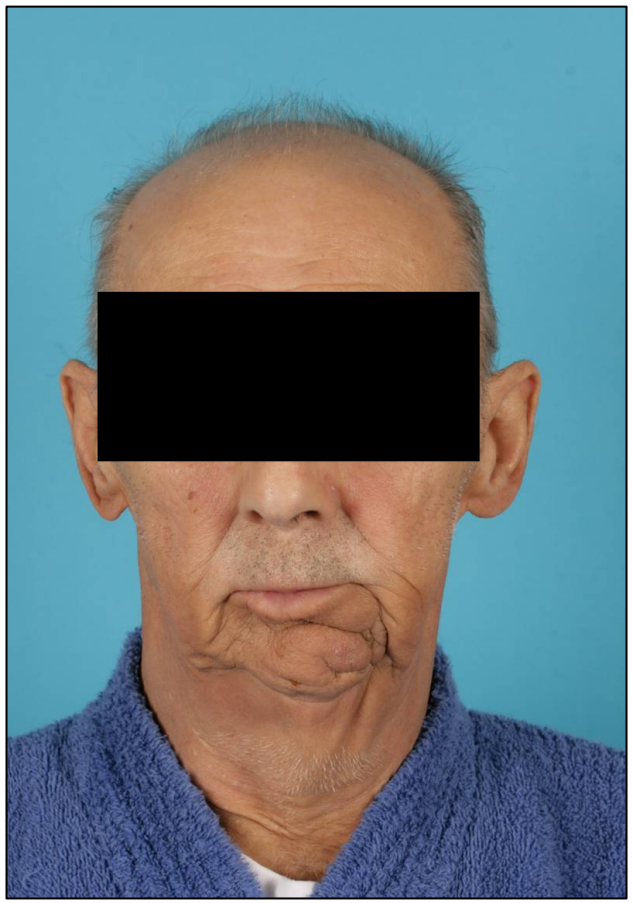


Preoperative evaluation



- ✓ magnetic resonance angiography
- ✓ color doppler flowmetry



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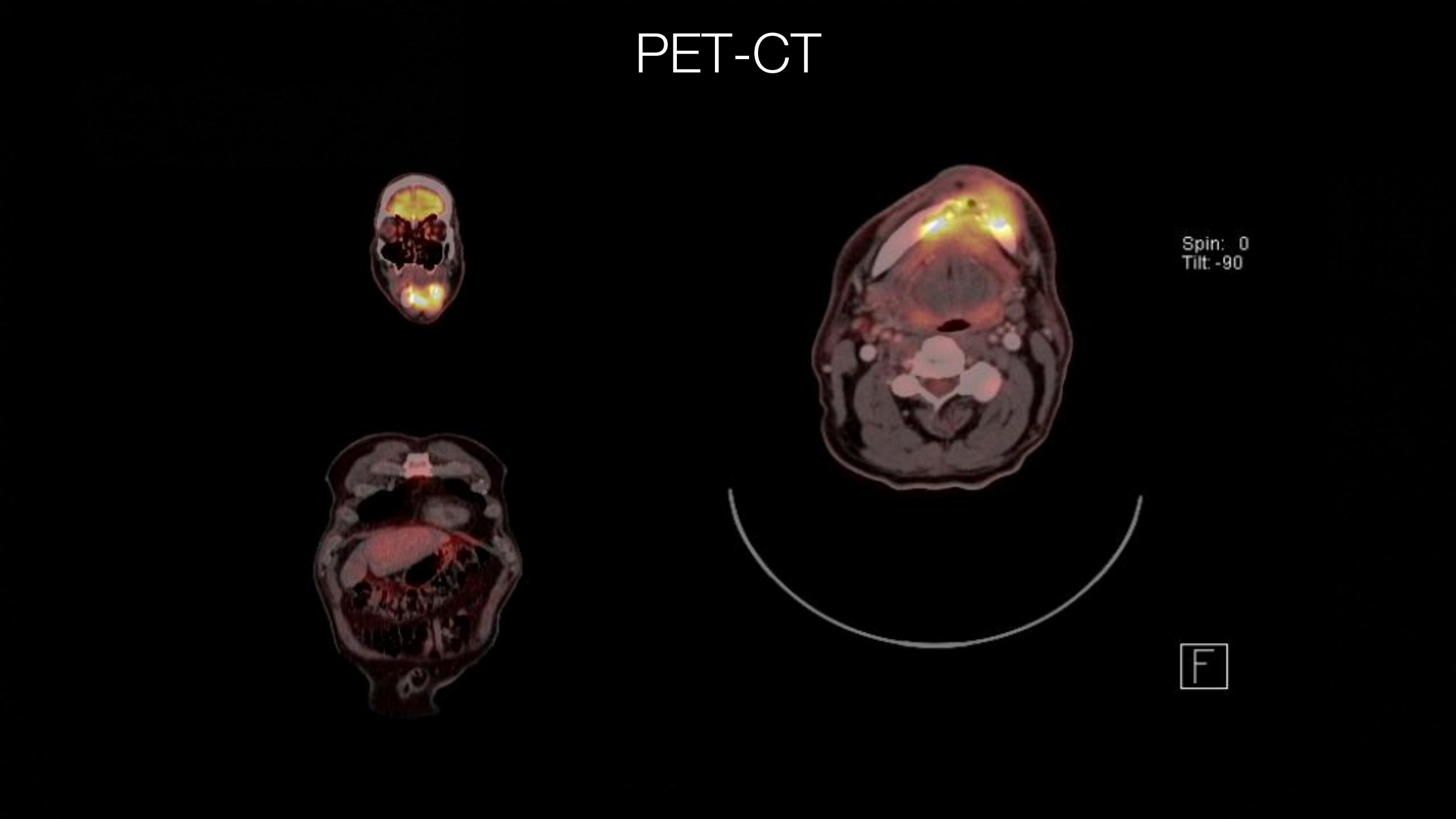
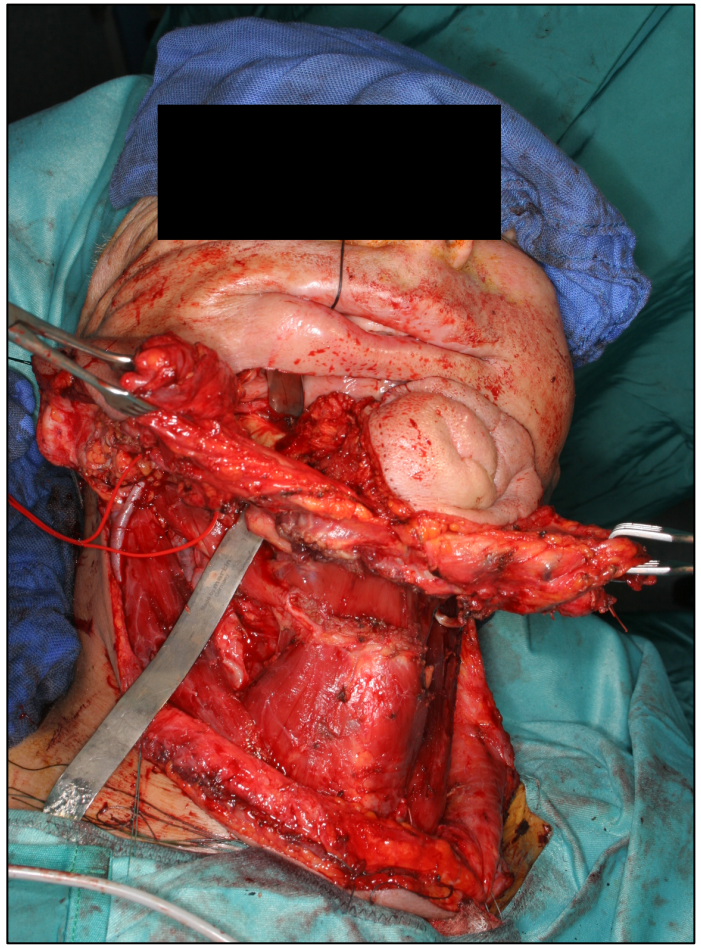
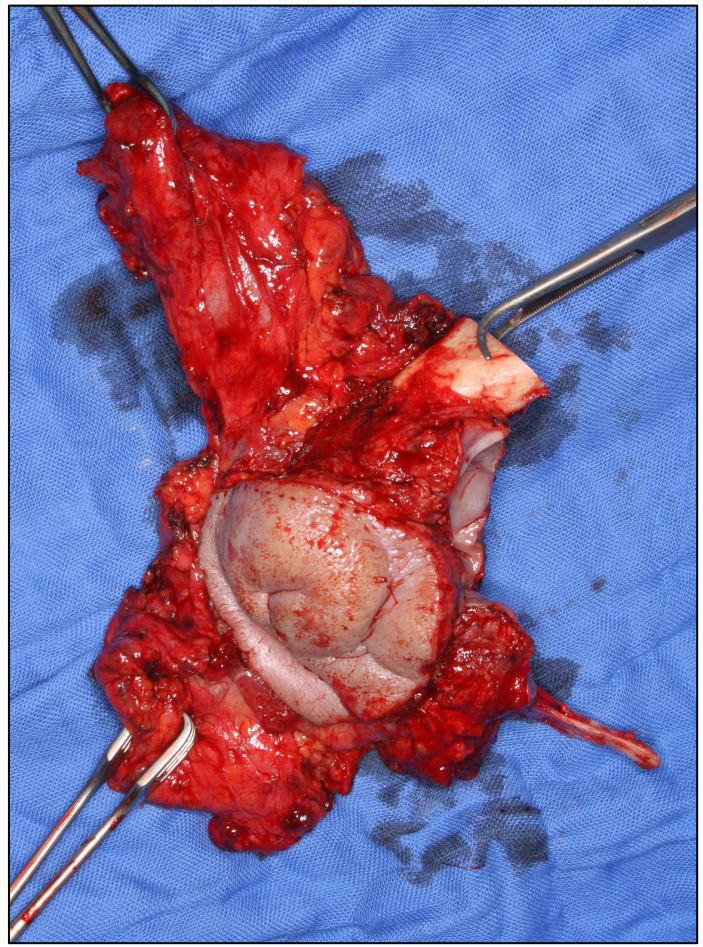
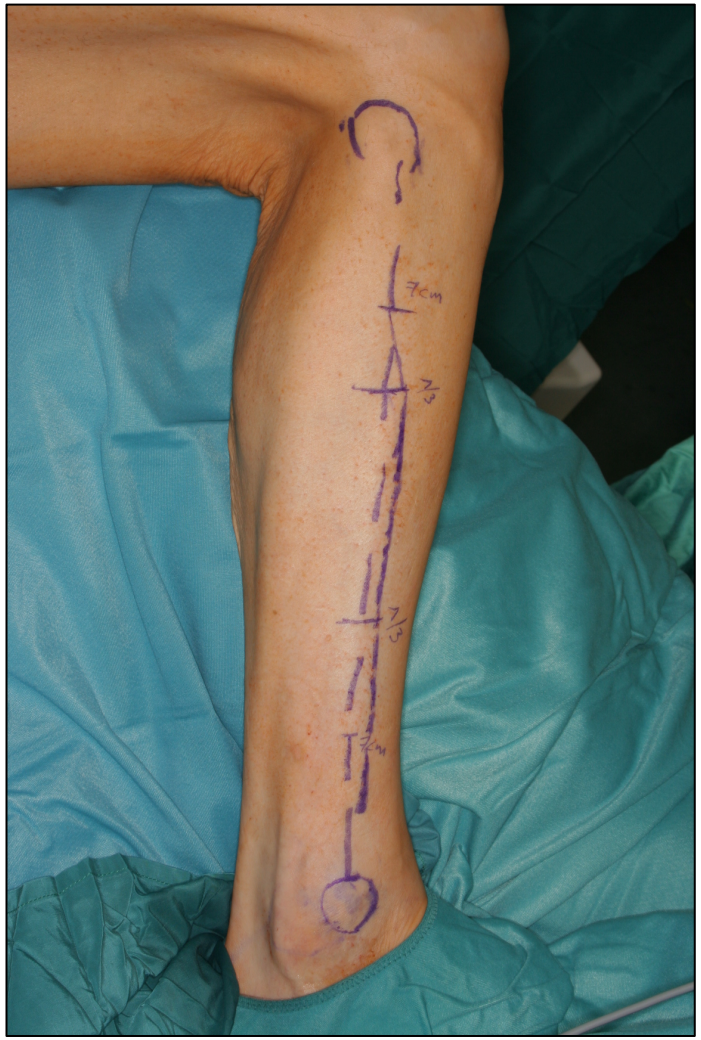
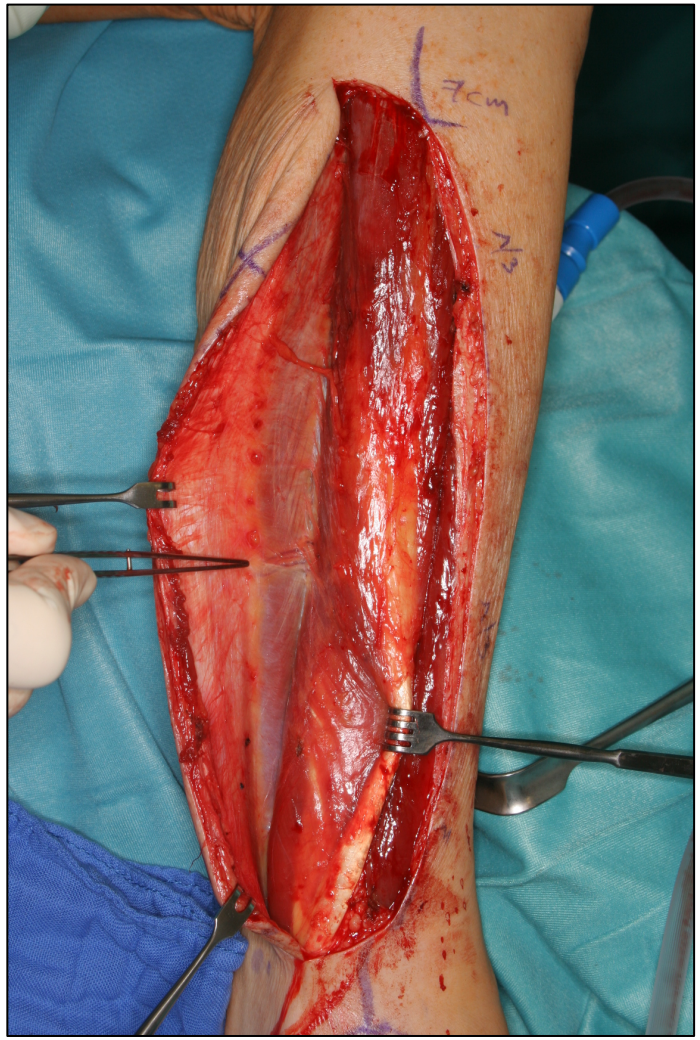


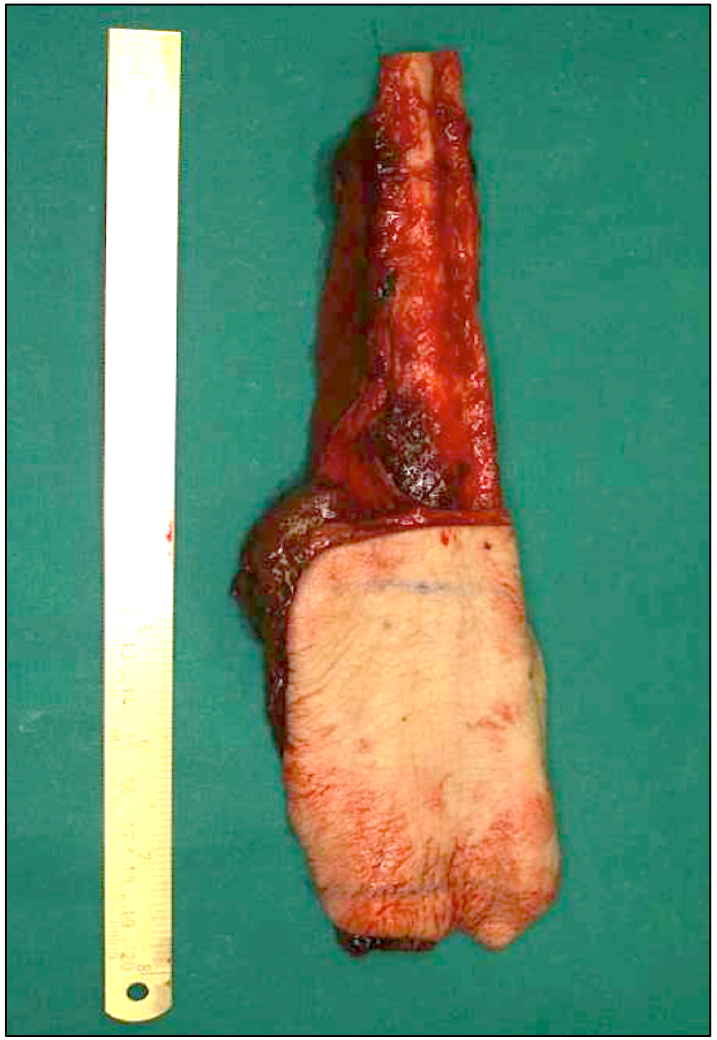

RENTEX WIEN NÖ-K

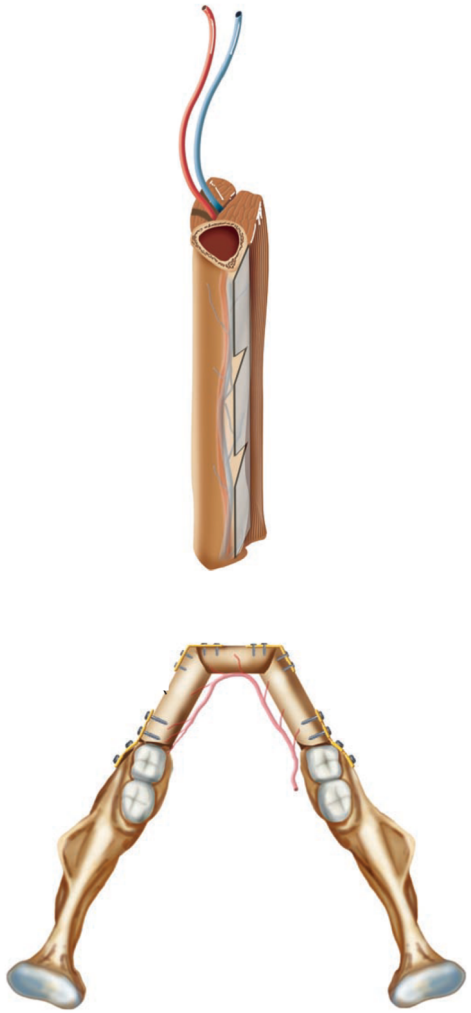


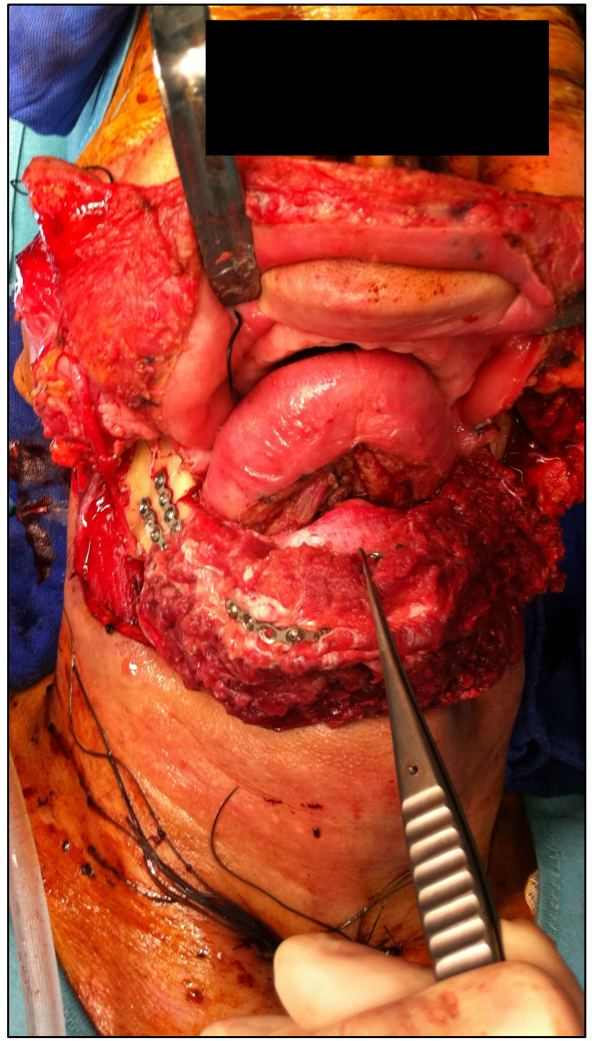


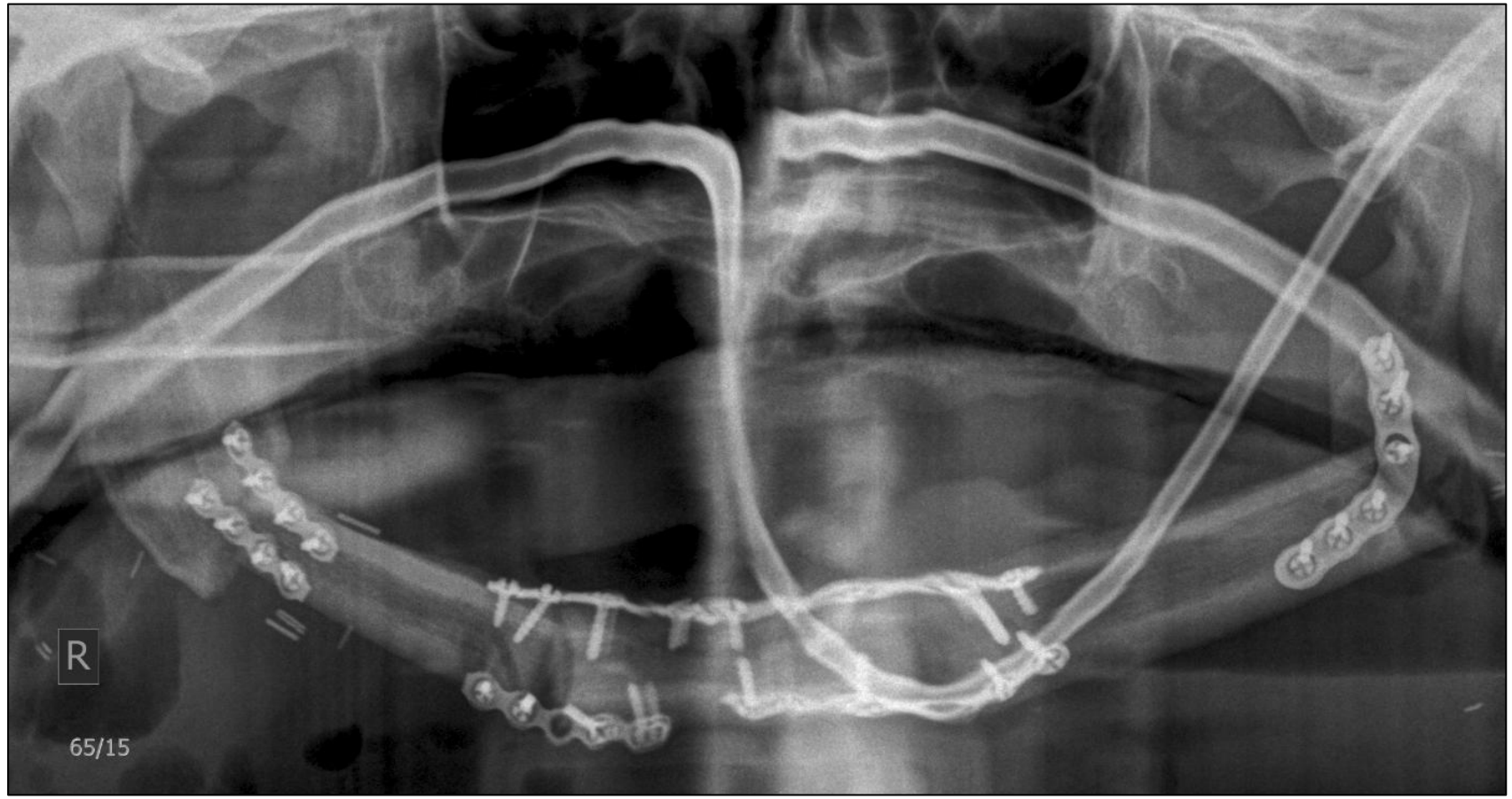

7cm
1/3
1/3
1/3


7cm
1/3





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comparison of bone flaps

	fibula	scapula	iliac crest
Dissection	Easy	Moderate	Difficult
Anatomy	Constant	Constant	Constant
Pedicle length	2-5 cm/up to 10 cm	8-10 cm	8-10 cm
Arterial diameter	2-2.5	2-2.5 mm	1.5-3 mm
Venous diameter	2-4 mm	2.5-4 mm	2-5 mm
Bone length	20-25 cm	10-12 cm	10-15 cm
Amount of soft tissue available	Moderate	Large	Large
Two-team approach	Yes	No	Yes
Donor site morbidity	Low	Low	High

complications of microvascular surgery

recipient
vascular thrombosis
flap failure
fistula
dehiscence
infection
hematoma
seroma

donor
dehiscence
infection
hematoma
seroma
skin graft failure

medical
respiratory
neurological
cardiovascular
renal
gastrointestinal
multiple organ failure
death

vascular thrombosis and free flap failure

patient-specific risk factors

advanced age
smoking
poor general condition
previous radiotherapy
previous surgery

hypercoagulability/thrombophilia
venous insufficiency
peripheral artery disease
diabetes melitus

surgery-related risk factors

poor technique
vessel size mismatch
compression of anastomosis or pedicle
twisting of anastomosis or pedicle
short pedicle
anastomosis under tension

vasospasm of pedicle
infection at anastomosis site
bleeding at anastomosis site
mismatch between type and amount of missing tissue and selected free flap

monitoring of free flaps

near-infrared spectroscopy

laser doppler flowmetry

implantable doppler

microdialysis

clinical monitoring

colour

capilliary refill

turgor

temperature

monitoring island

doppler

handheld doppler

color doppler sonography

minimizing
risks for complications

1. proper patient selection and careful preoperative planning
2. meticulous surgical technique
3. venous couplers
4. double venous anastomosis
5. antithrombotic medication (heparin LMWH aspirin)
6. postoperative monitoring
7. prompt recognition of thrombus formation and revision surgery


Σας ευχαριστώ για την προσοχή σας!