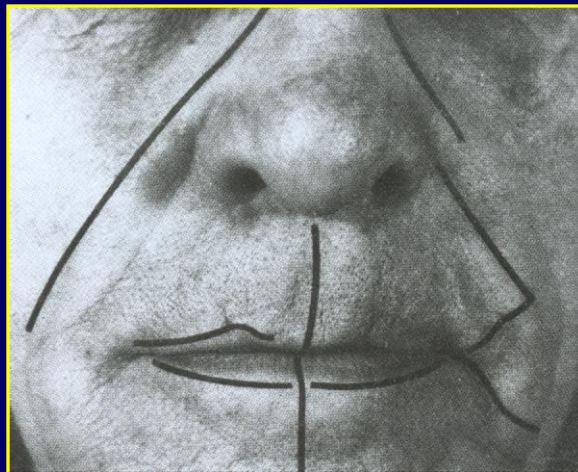
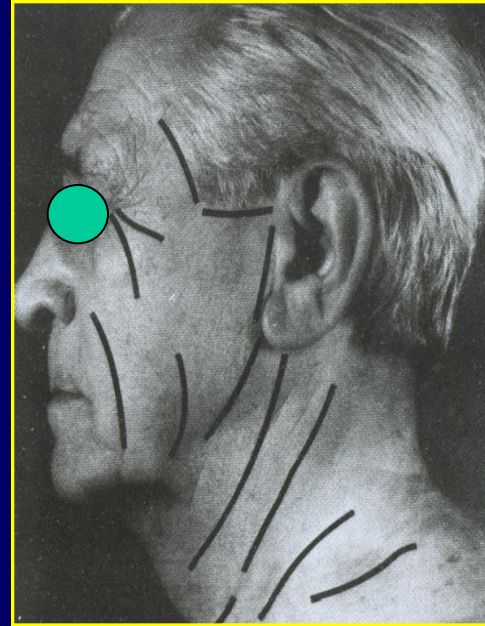
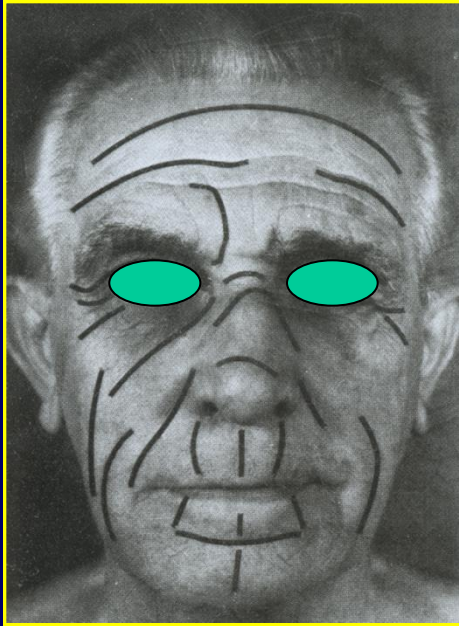


# **Maxillofacial reconstruction in the head and neck region**

# Planning of incisional scars

- perpendicular to the muscular tension lines
- Langer lines of the skin
- anatomic structures

# Skin incisions on the face

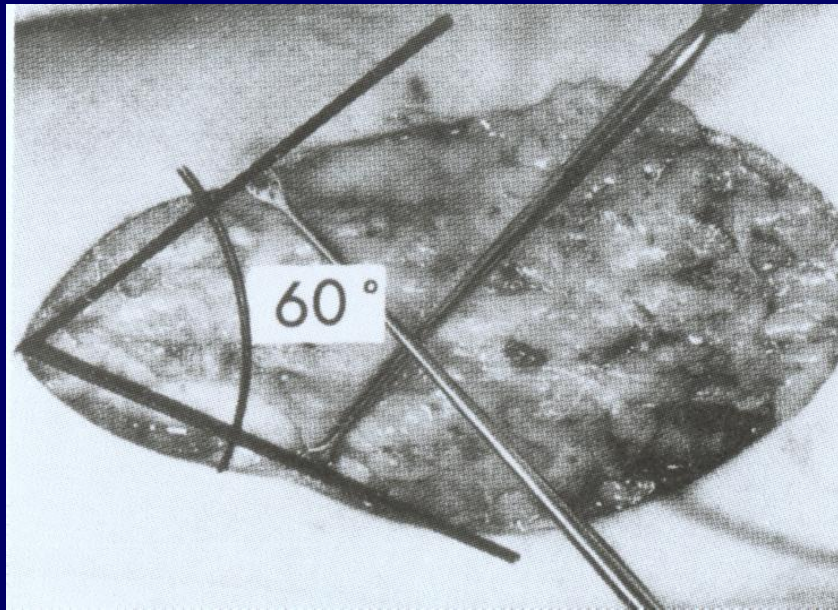


# Basic principles of the wound closure

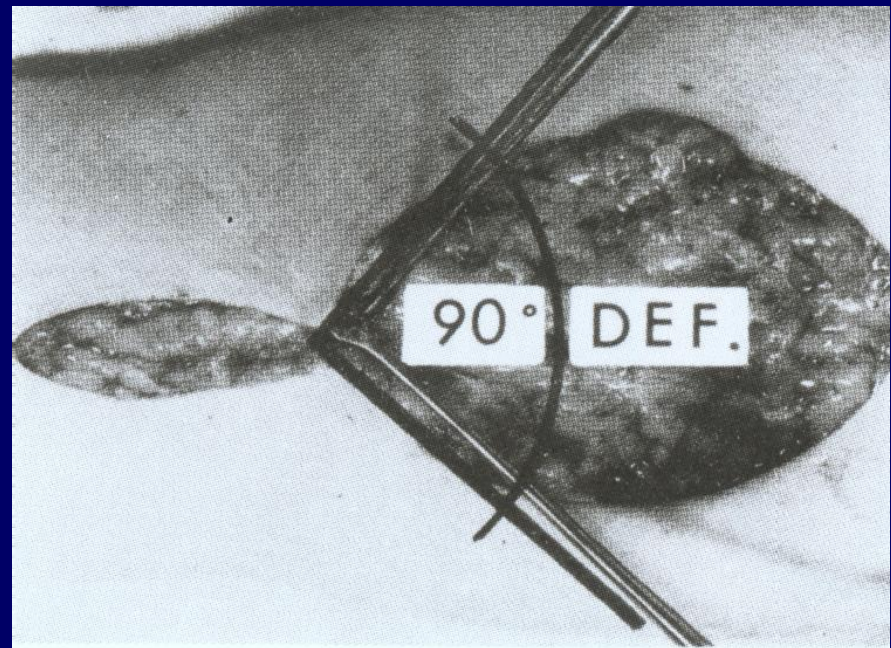
- débridement and wound cleaning
- hemostasis
- drainage
- tension free closure of the skin layers

# Closure of the skin defects

- the angle of the wound  $< 60^\circ$ , simple closure of the skin layers
- the angle of the wound  $> 60^\circ$ , closure of the skin with flaps



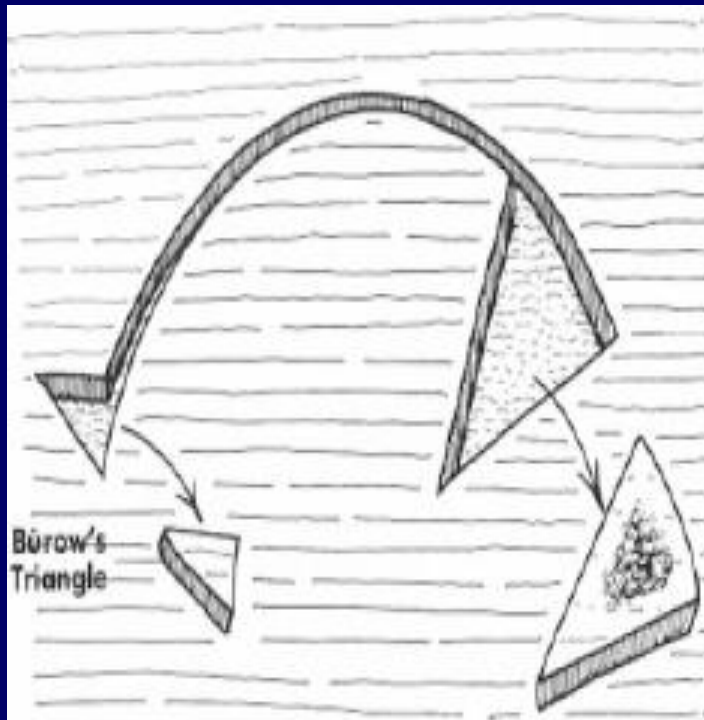
the angle of the wound



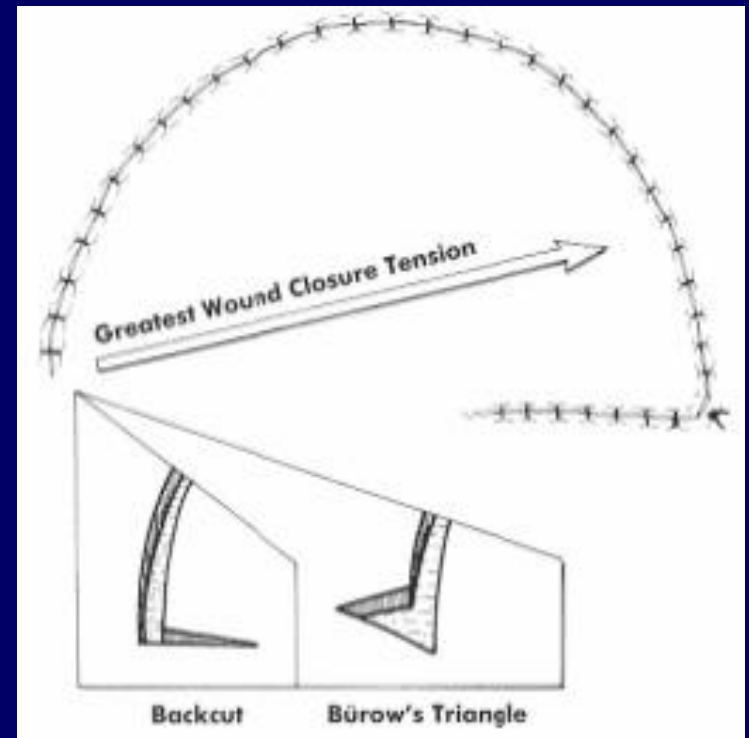
# Closure of the skin defects

- local, rotation flaps, pedicled flaps



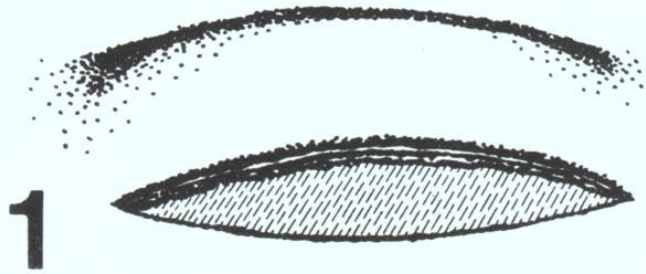


rotation flap

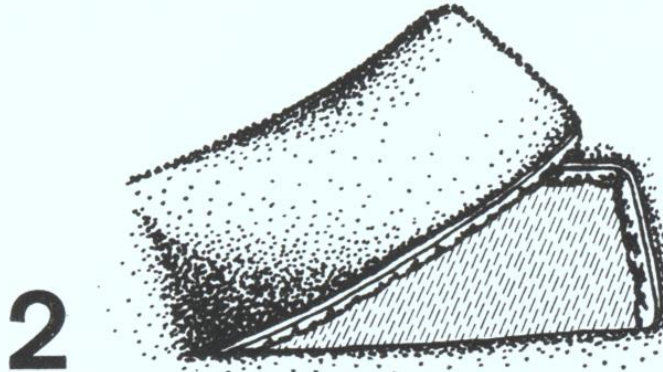




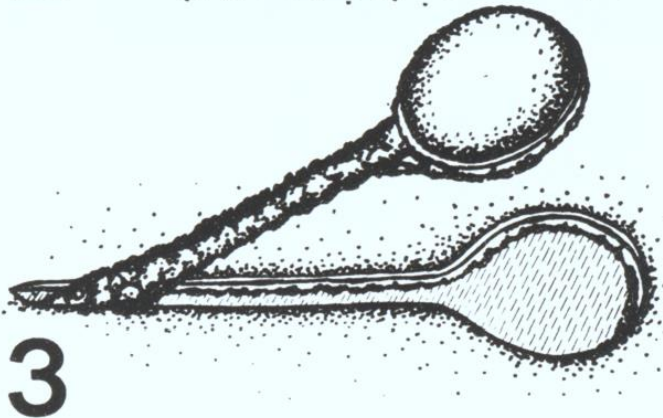
**A**



bipediced „bridge” flap



monopedicled flap



monopedicled „island” flap

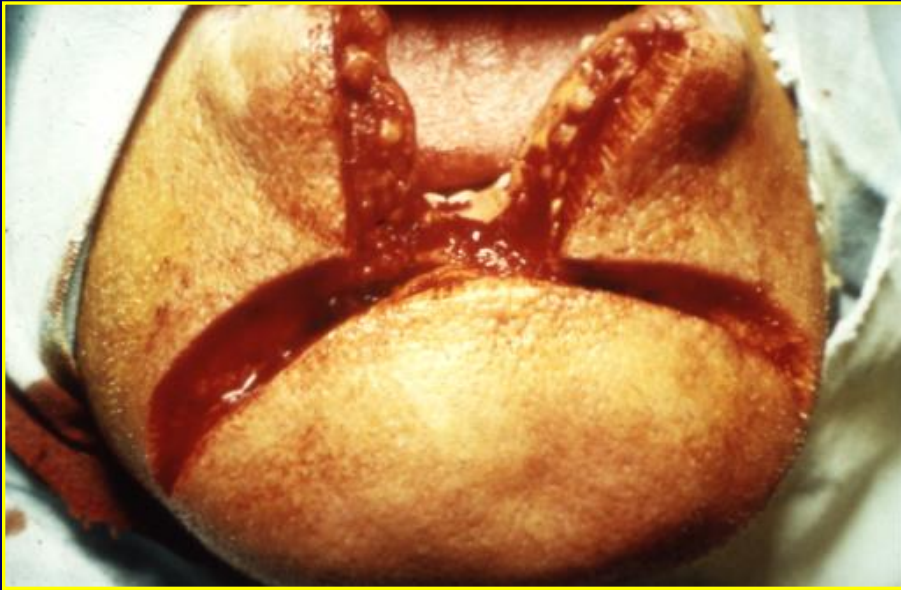


„Z” plasty



„Z” plasty

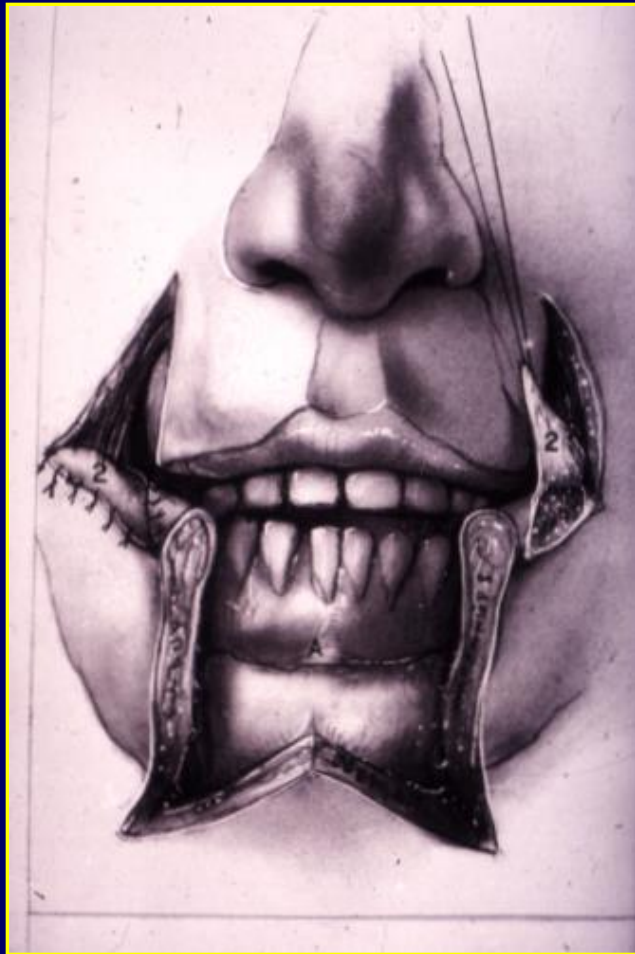




quadrat excision







Grimm plasty



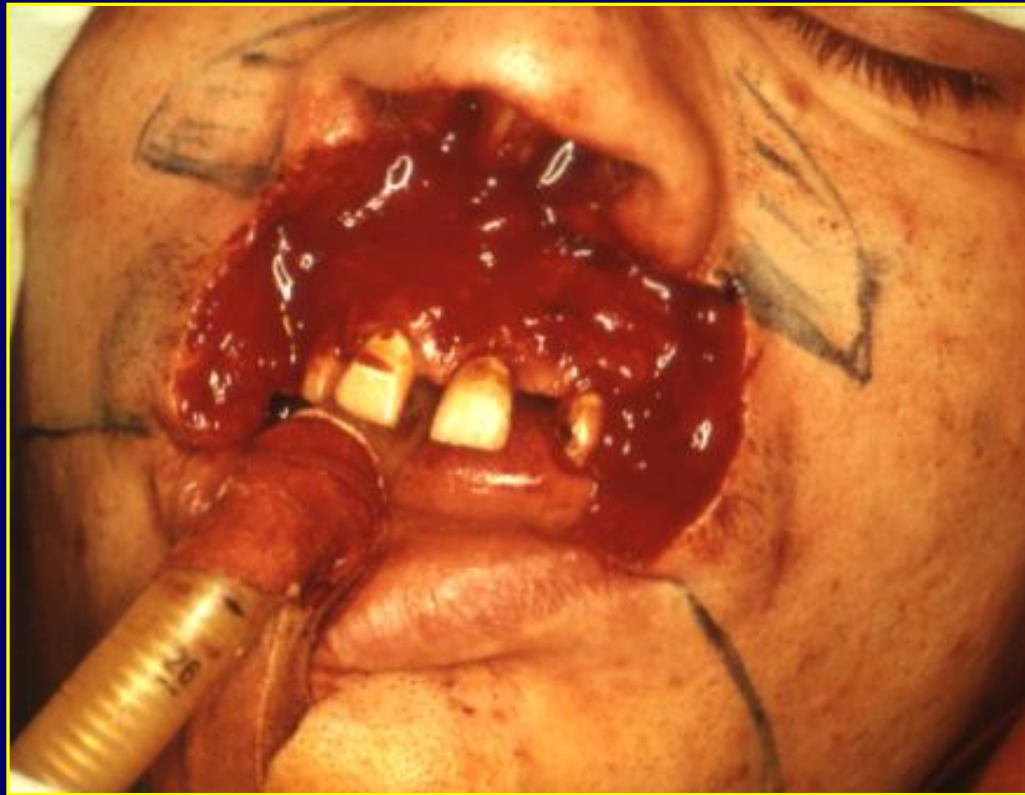


Grimm plasty



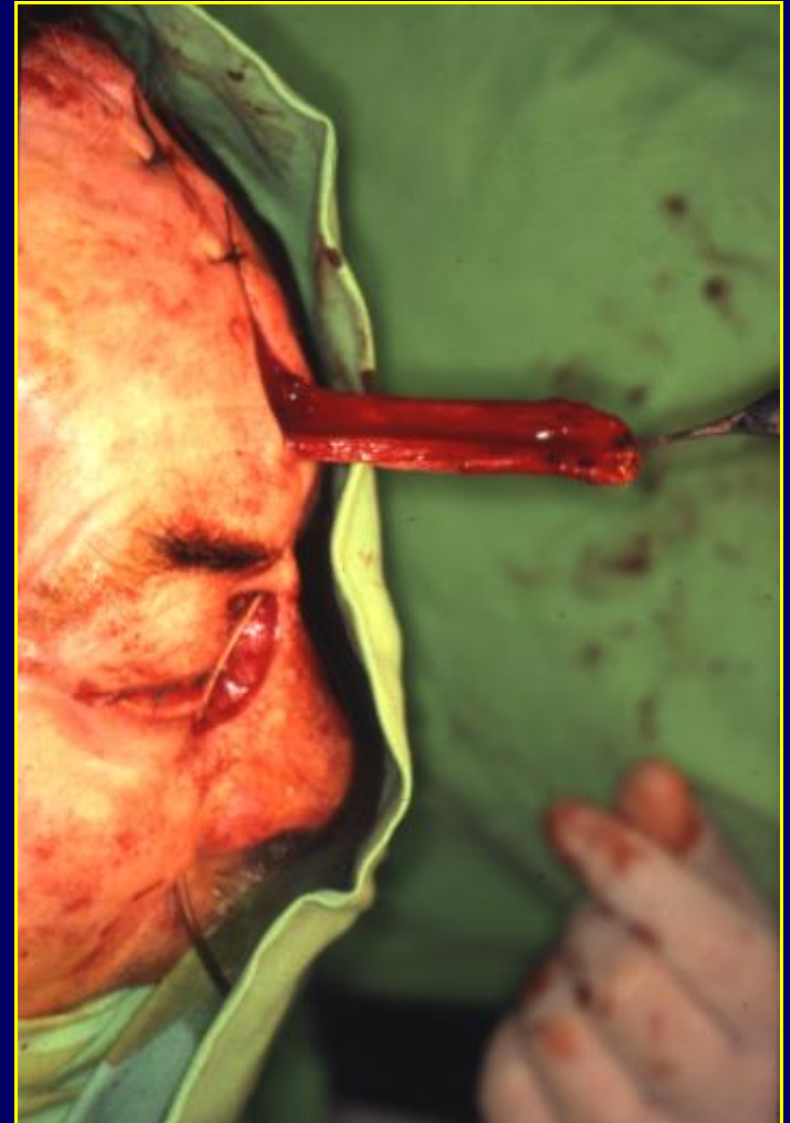








„monopedicled”  
forehead flap





„monopedicled”  
forehead flap



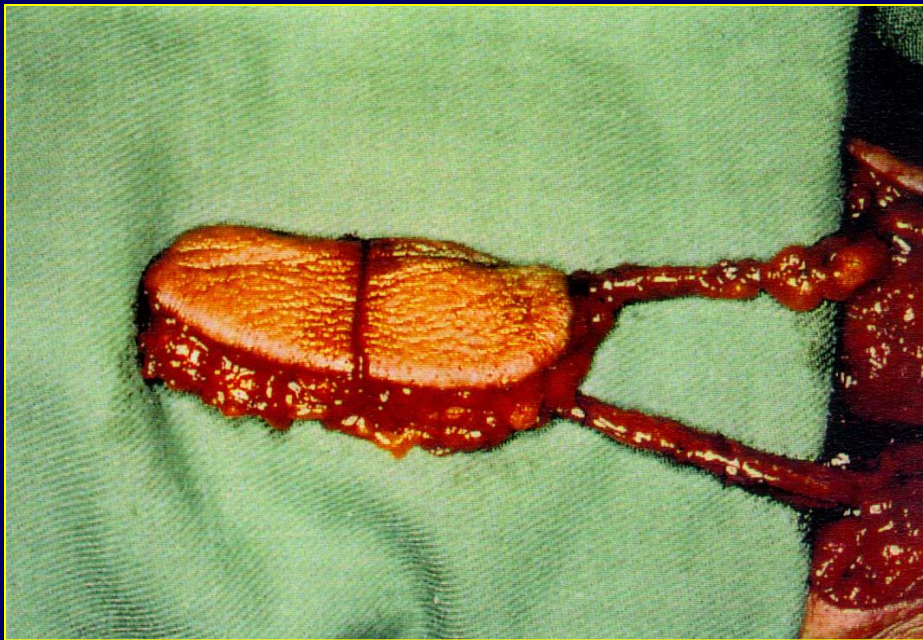
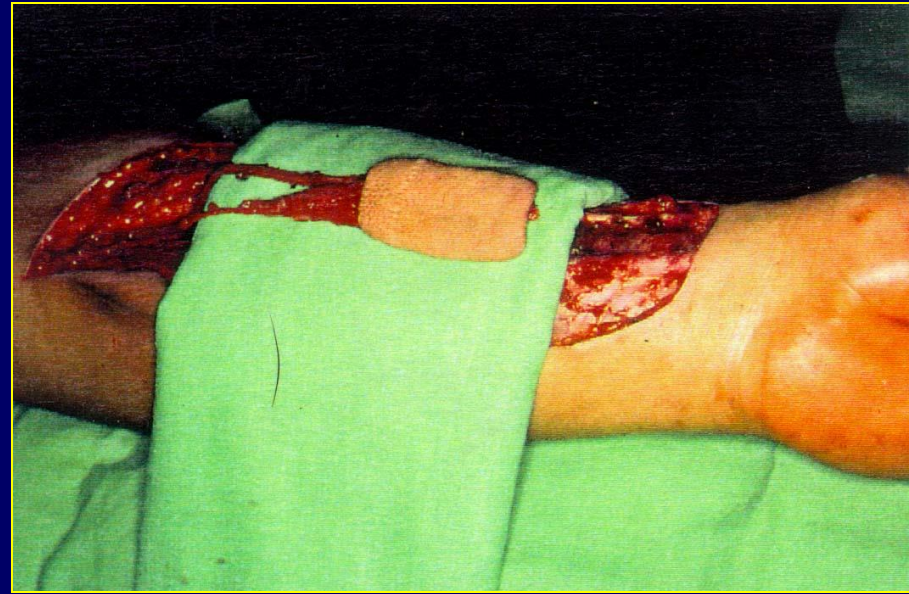
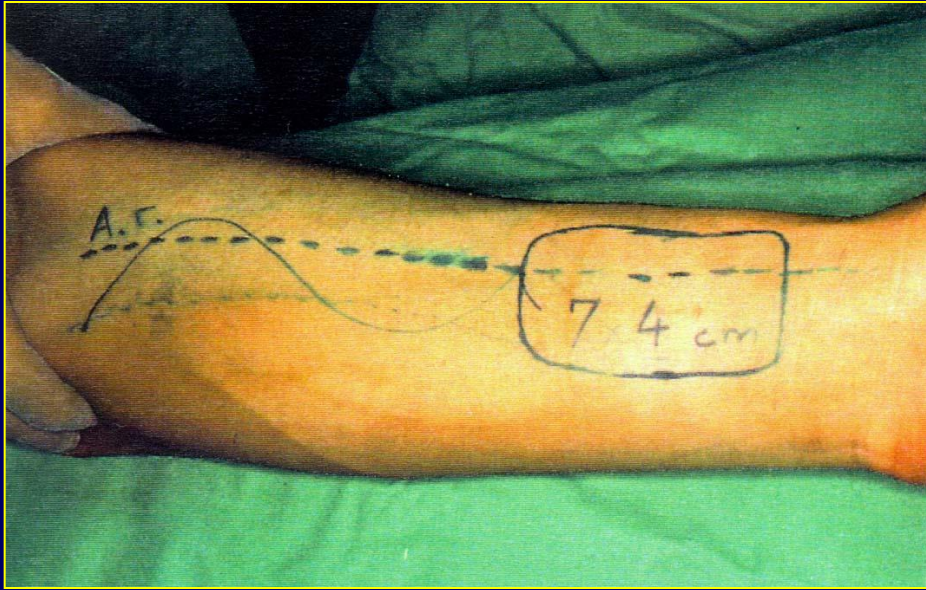


# Closure of the defects of the maxillofacial region

- Free flaps 1.
  - split thickness dermal grafts
  - full thickness, dermal or composite grafts (ie, full-thickness skin with perichondrium, with or without cartilage)

# Closure of the soft tissue defects of the maxillofacial region

- Free flaps 2.
  - microvascular flaps
  - fasciocutaneous,
  - myocutaneous
  - osteo-myocutaneous



„chinese” flap  
(fasciocutaneous flap)

# Reconstruction of the bony defects of the maxillofacial region

- **Indication:**
  - preprosthetic surgery
  - reconstructive surgery
  - prevention



# **The cause of the bony defects:**

- Trauma**
- Tumor (after oncological resections)**
- Developmental disorders(clefts)**
- Osteoradionecrosis, infections**
- Atrophy**

# Type of the bony defects:

## Localisation

neuroskeleton

facial skeleton

mandible

maxilla

## Size of defect

absence in  
continuity

no absence in  
continuity

# Bone substitution materials

		metals
	biotolerant	ceramics
alloplastic	bioinert	carbon
	bioactive	HA
		Algipore

# Bone replacement materials

autogenous bone  
transplantation

**mandible**

**chin**



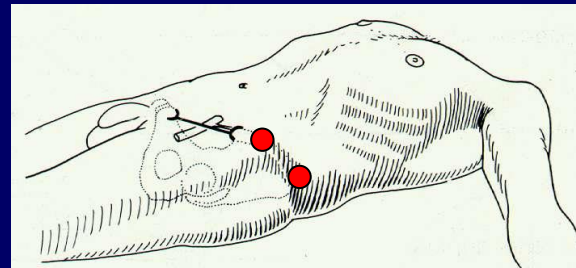
**ramus**



**tibia**

**rib**

**iliac crest**



# Bone replacement materials

microvascular bone  
transplantations

iliac crest

fibula

scapula

radius

# Osteodistraktion

# Reconstruction with alloplastic material

**Osteosarcoma**

**Mandibular resection**

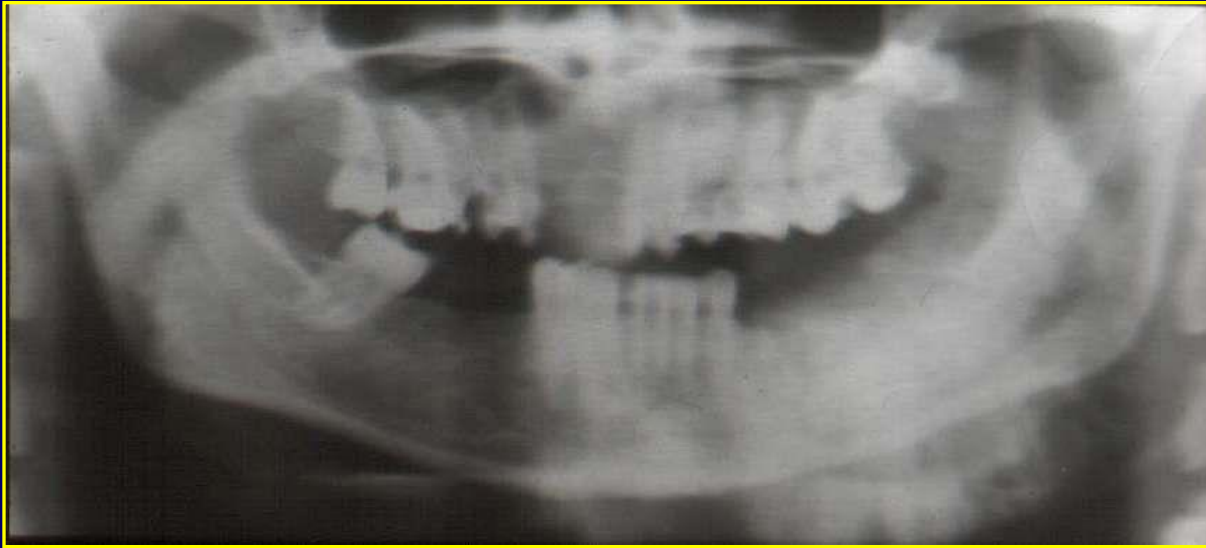
**Temporary reconstruction  
(Ti plate+  $\text{Al}_2\text{O}_3$  ceramy)**

**Chemotherapy**

**Definitive reconstruction  
(Ti plate+ iliac crest)**

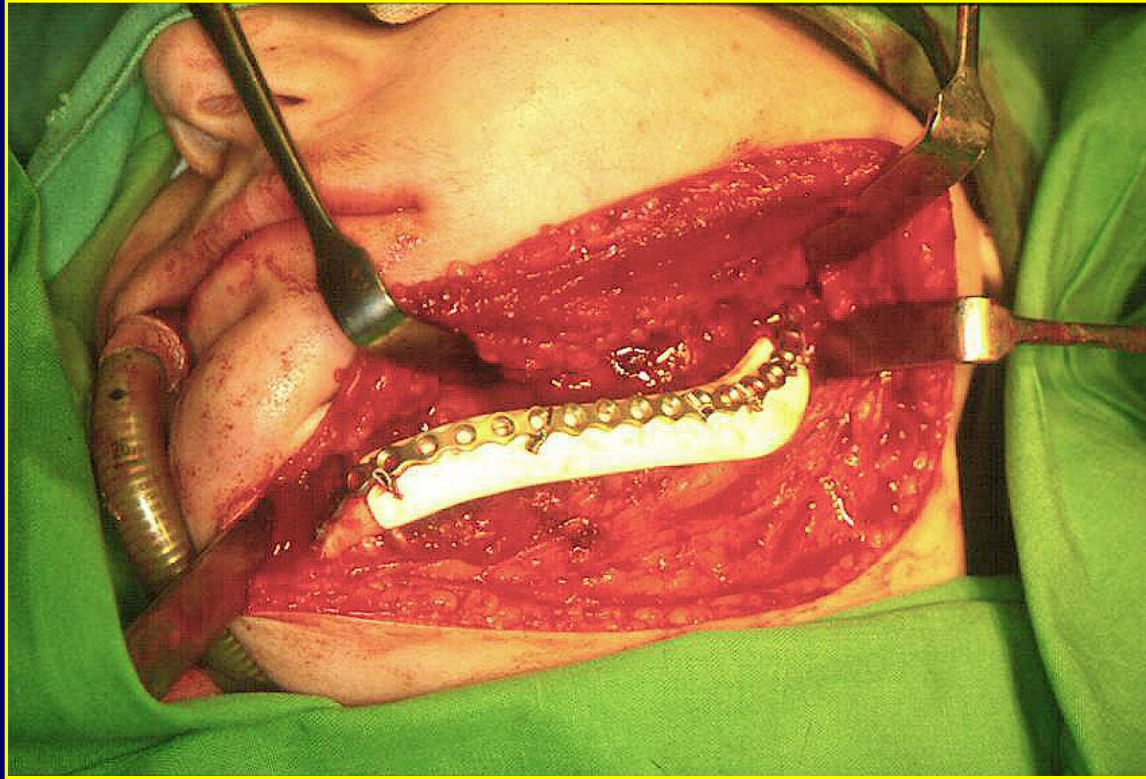






osteosarcoma





# Reconstruction with alloplastic material

**Polytrauma**

**Cad CAM  
planning/manufacturing**

**Titanium implant**



# Reconstruction with alloplastic material

**Polytrauma**

**Cad CAM  
planning/manufacturing**

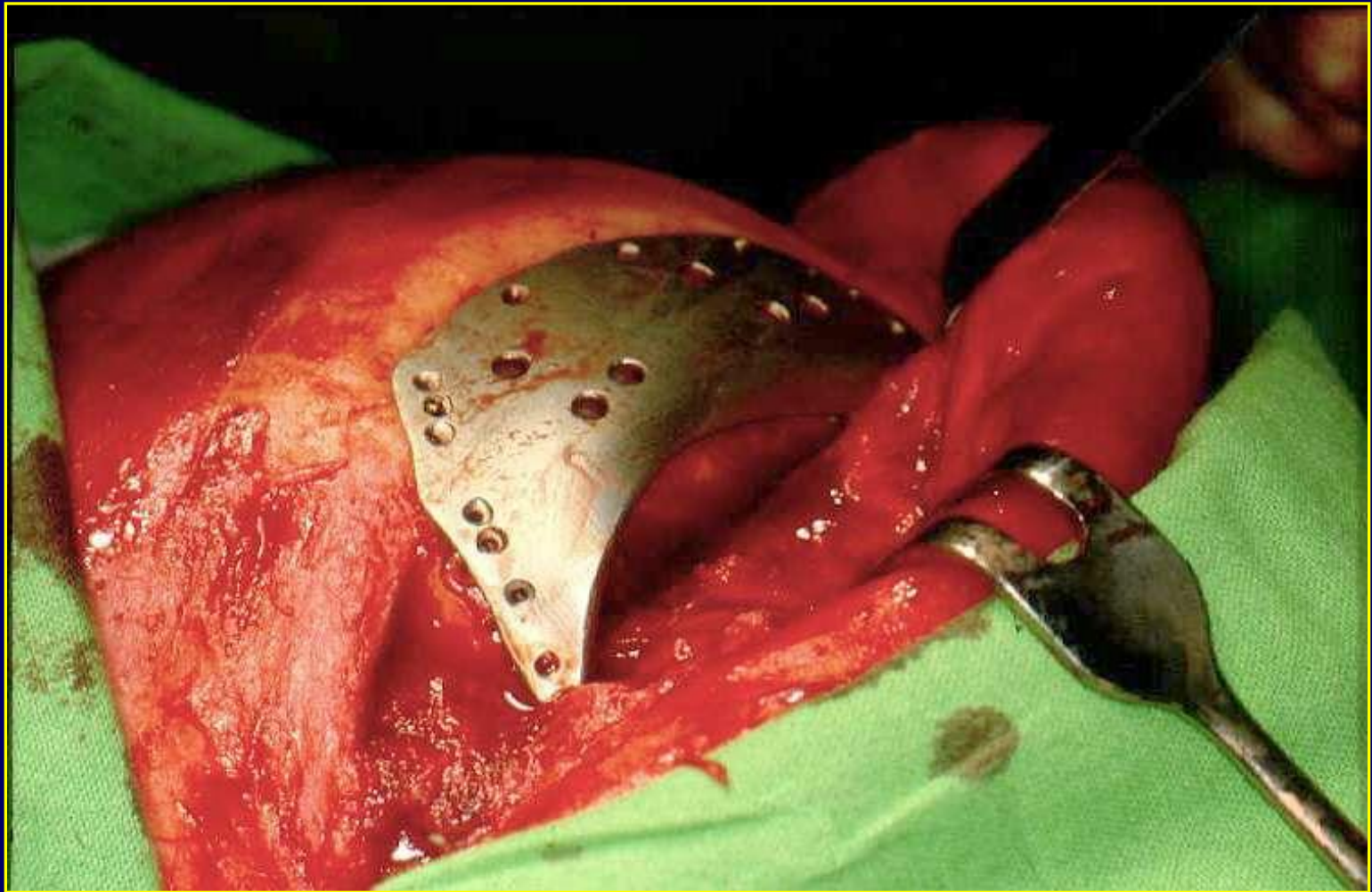
**Titanium implant**



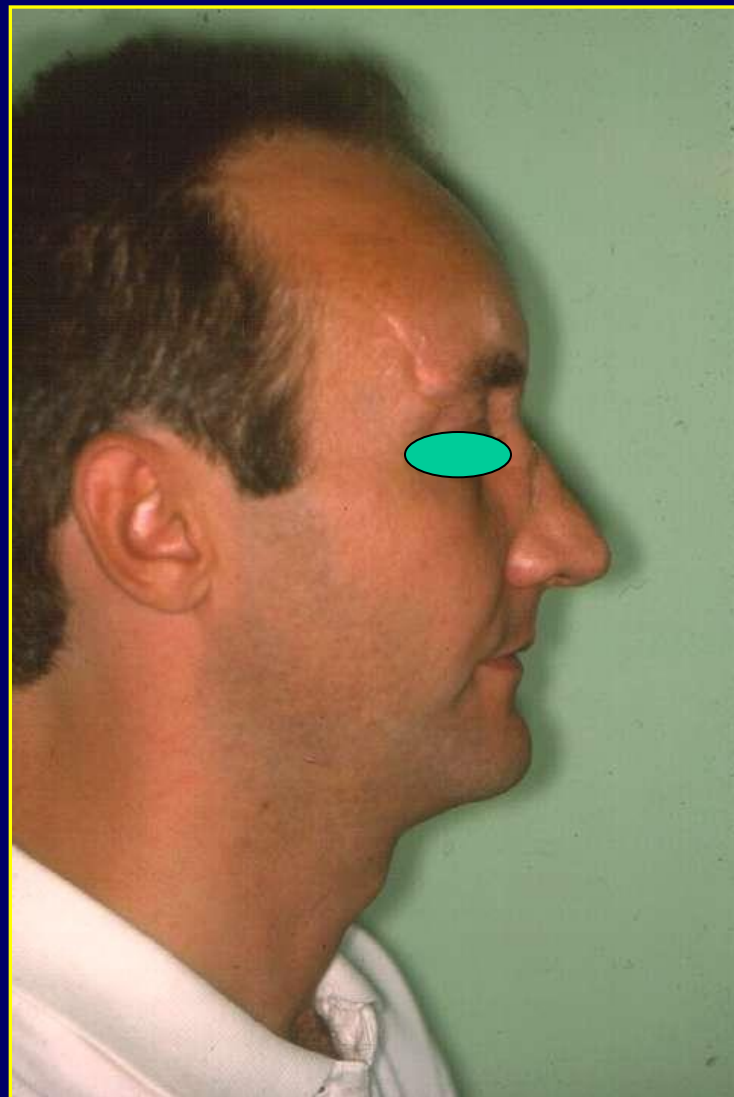












# Reconstruction with alloplastic material

**Carbon / Carbon**



# Reconstruction with alloplastic material

Carbon / Carbon



# Reconstruction with alloplastic material

**Carbon / Carbon**



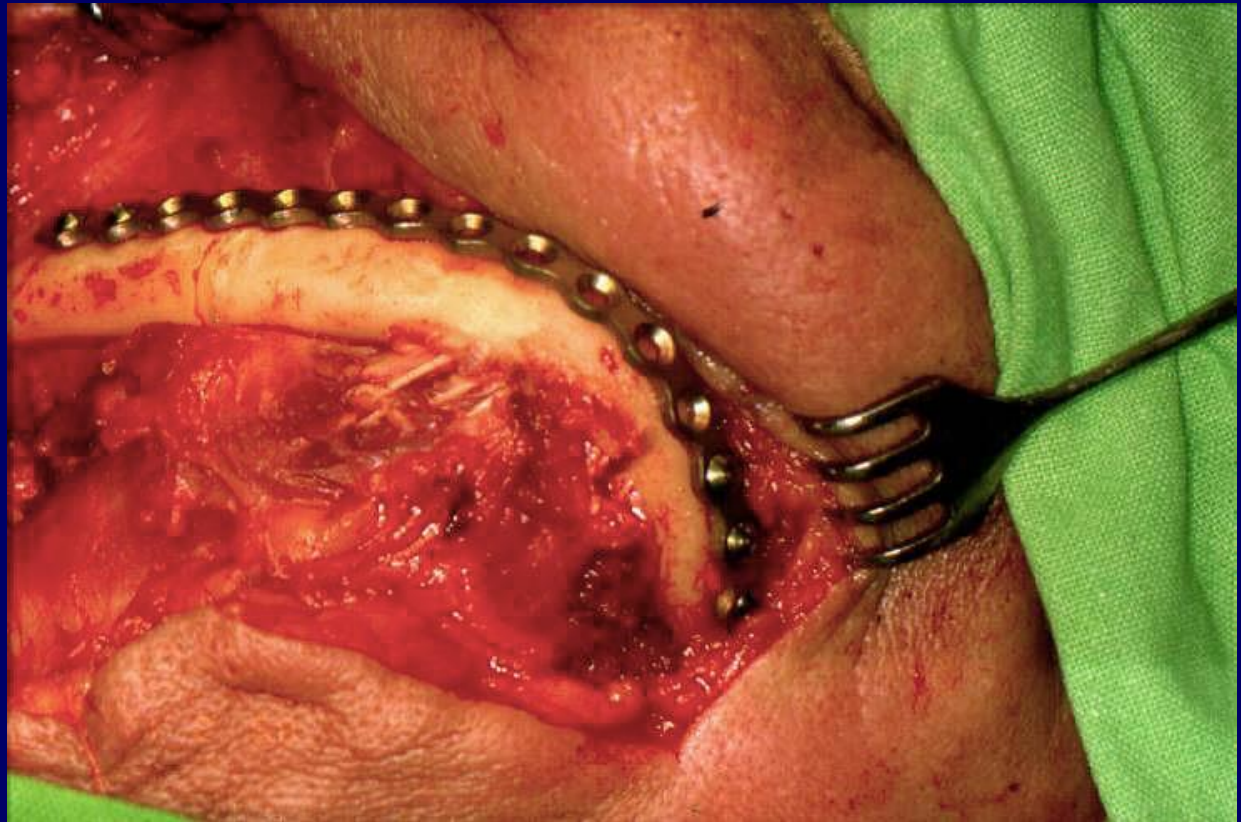
**Carbon / Carbon**

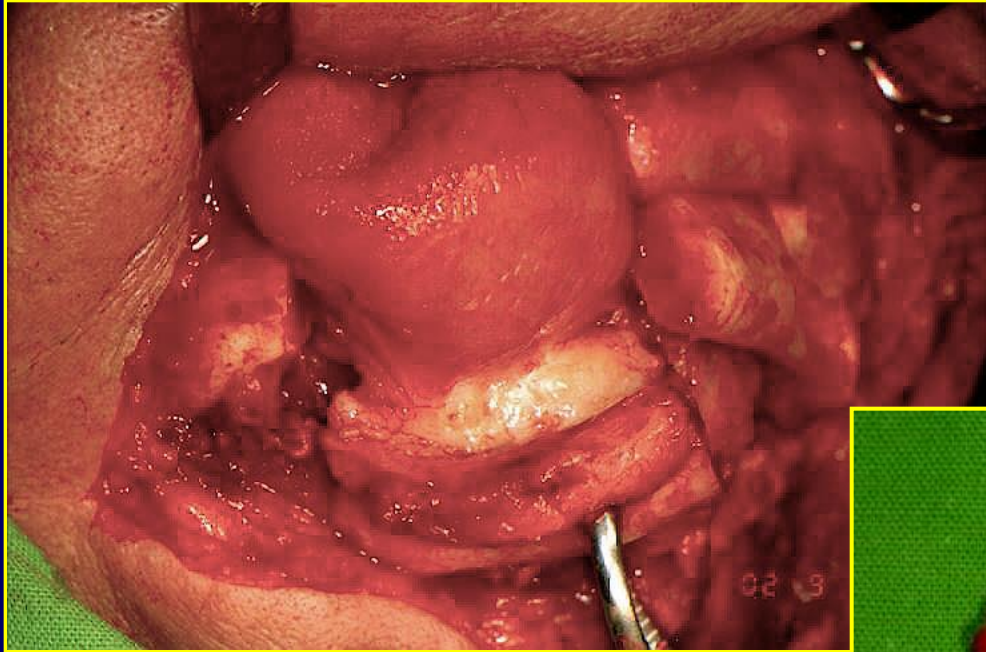




# Reconstruction with alloplastic material

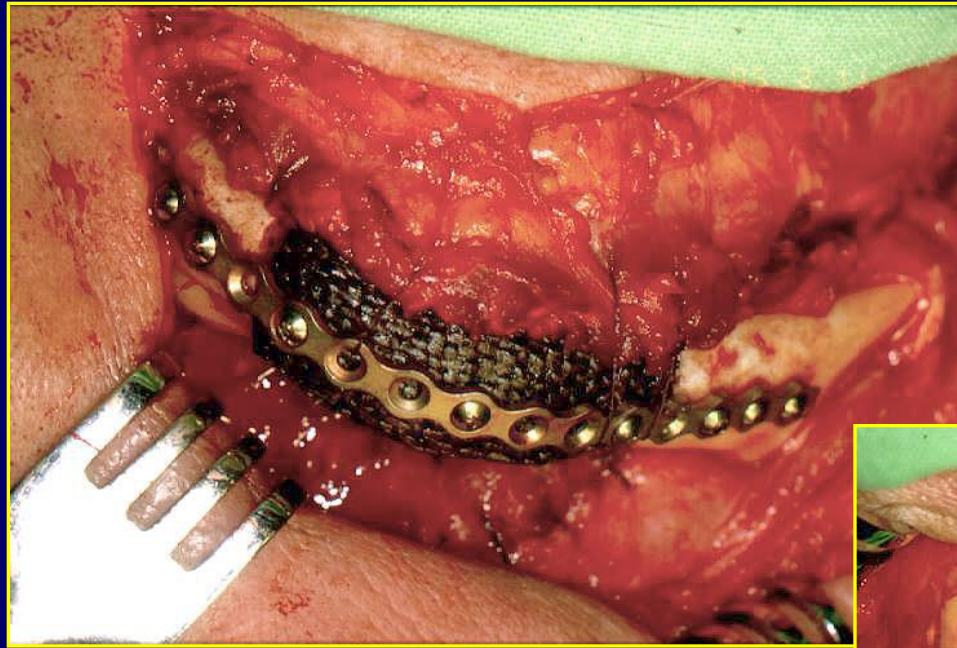
Carbon / Carbon





**Carbon / Carbon**

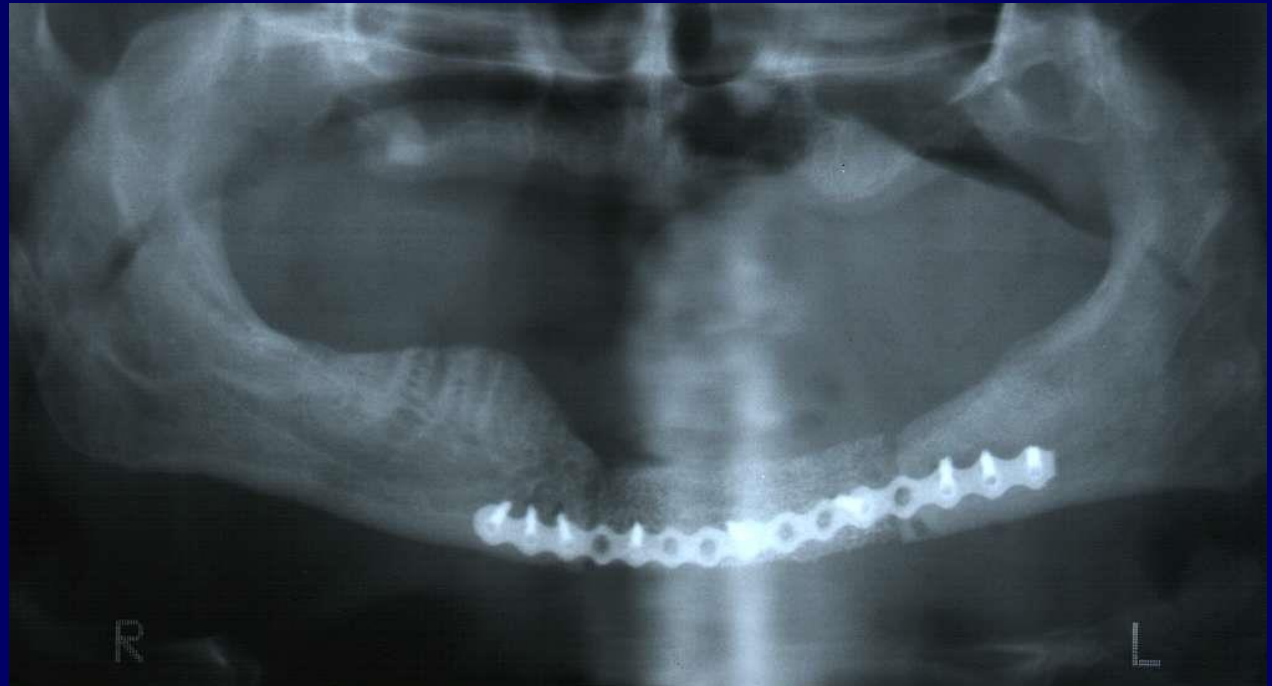






# Reconstruction with alloplastic material

Carbon / Carbon



# Free osteotransplantation from hip

**Posttraumatic ramus  
defect**

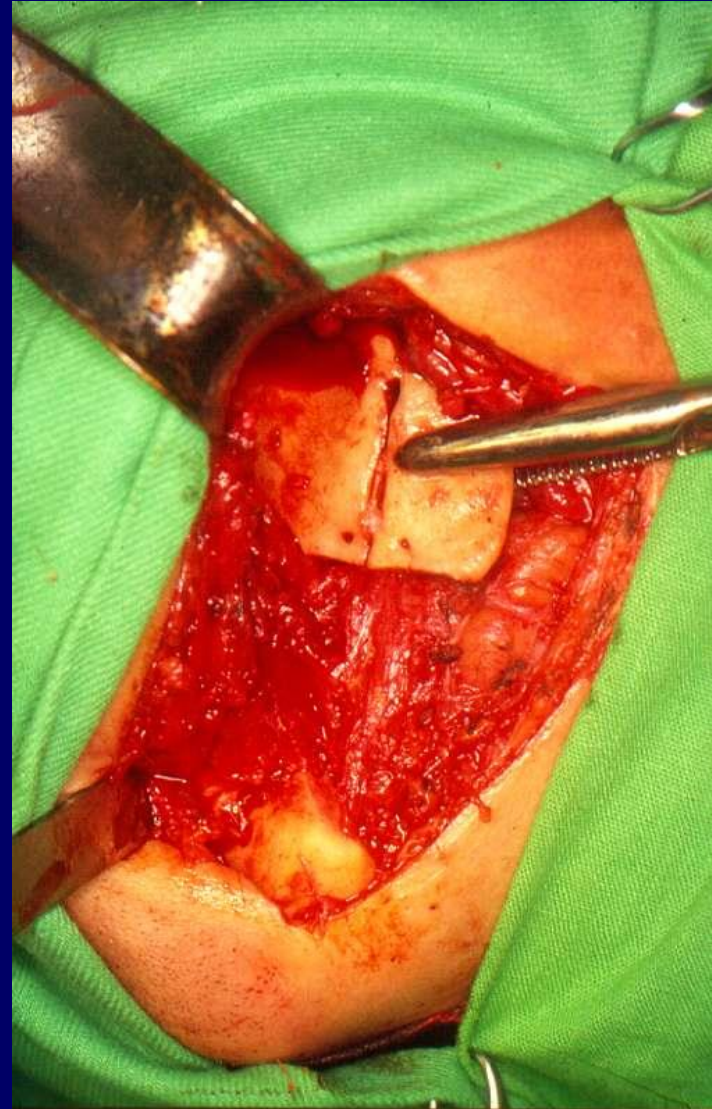
**Reconstruction with free bone  
transplantatum from hip +  
metal plate**



# Free osteotransplantation from hip

**Posttraumatic ramus  
defect**

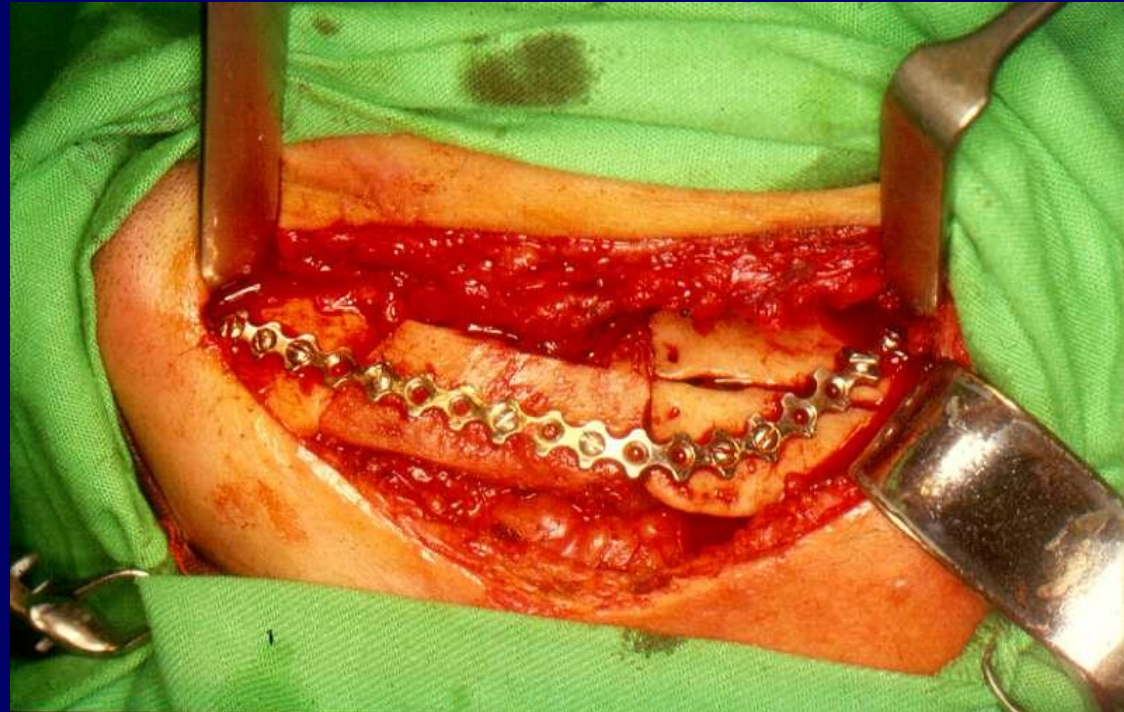
**Reconstruction with free bone  
transplantatum from hip +  
metal plate**



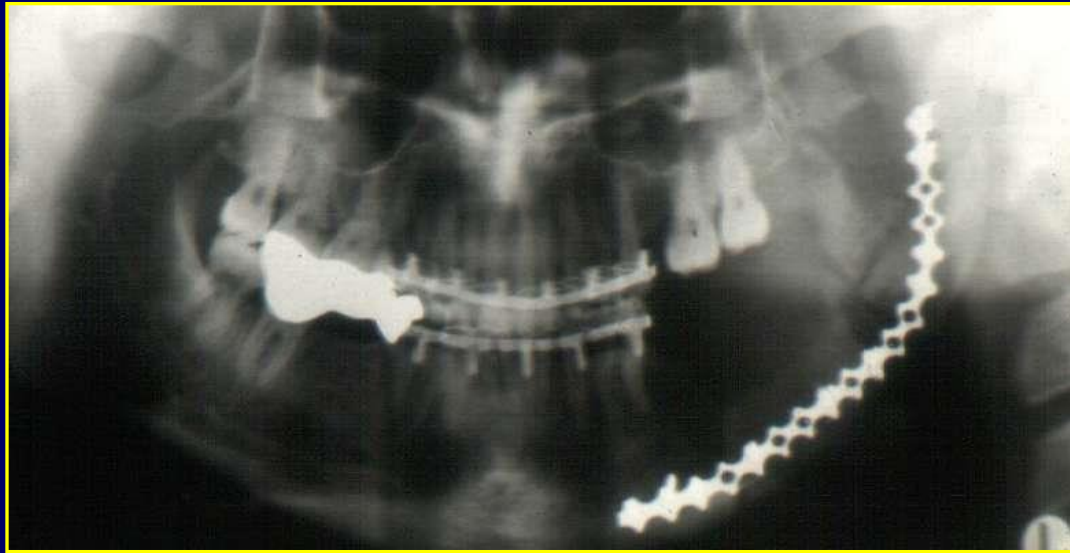
# Free osteotransplantation from hip

**Posttraumatic ramus  
defect**

**Reconstruction with free bone  
transplantatum from hip +  
metal plate**







**Reconstruction with free bone  
transplantatum from hip +  
metal plate**





# Free osteotransplantation from hip

