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1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

- Concentration of highly specialized organs and tissues
 - Topographic division of the oral cavity
 - General rules for reconstruction
 - Special reconstructive demands for each area and organ
- Need for a clear classification of the defect
 - Guide for the reconstructive decision making
 - Preparation for the evaluation of results
 - quality of life
 - functional outcomes

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1) Introduction

2) Anatomy & classification

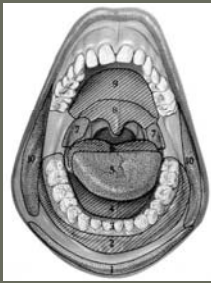
3) General rules

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Topographic division of the oral cavity

- Lip
- Floor of mouth (FOM)
- Internal cheek
- Hard palate
- Soft palate
- Mobile tongue



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Classification of defect

Ulken L. & col Arch Otolaryngol Head Neck Surg, 117, 1991

- Almost exhaustive
 - Bone + Mandibular reconstruction
 - Soft tissue defects
 - Pharynx
 - Tongue
 - Lip
 - Otolaryngologic defects
- But excluding the hard palate

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Classification of defect
Ulken L. & col Arch Otolaryngol Head Neck Surg. 117, 1991

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• Bone

- Mandible
- CMM

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Classification of defect
Ulken L. & col Arch Otolaryngol Head Neck Surg. 117, 1991

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• Bone

• Soft tissues

- Pharynx
- Larynx
- Nasal
- Soft palate
- Hard palate
- Uvula

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Classification of defect
Ulken L. & col Arch Otolaryngol Head Neck Surg. 117, 1991

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- Mandible
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• Bone

• Soft tissues

- Tongue
- Hard palate
- Soft palate
- Uvula
- Pharynx
- Larynx
- Nasal

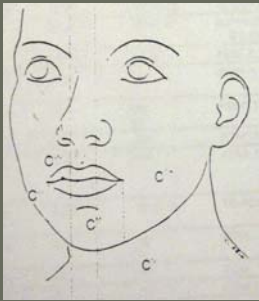
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Classification of defect

Ulken L. & col Arch Otolaryngol Head Neck Surg. 117, 1991

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- Bone
 - Chin - C2-C4
 - Neck - C4
 - Chin - C4
 - Lip - C2-C4
 - Lower lip - C2-C4
 - Lower lip - C2-C4
- Soft tissues
 - Skin



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Classification of defect

Ulken L. & col Arch Otolaryngol Head Neck Surg. 117, 1991

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- Bone
- Soft tissues
- Neurologic
 - Hypoglossal - C12
 - Lingual - C12
 - Inferior alveolar - C12

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Evaluation of results

- 1) Introduction
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- Essential :
 - To assess the efficiency of the reconstructive technique
 - To compare results in between institutions
- Assessment on 2 criteria
 - Subjective = Quality of life questionnaire
 - FOM (10 - 40) 0-100
 - Objective = an universal tool

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Follows the fundamental rules of plastic surgery

- Every reconstructive procedure has 3 goals
 1. Restore the survival of the patient
 2. Restore the plastic and aesthetic of the region
 3. Restore the function of the organ

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1) Assure the survival of the patient

1. Post-operative hemorrhagic accident
 - After oral cavity carcinoma surgery it can be dangerous because of injury of the jugular-carotid vascular axis
 - Measures to prevent hemorrhage
 - 1. Tying suture of the oral cavity to prevent salivary leaks
 - 2. Protection of the vascular axis
 - When ?
 - o After radical neck dissection
 - o In salvage surgery
 - o By which means ?
 - Lateral regional muscular flap (Functional repair)
2. Post-operative Airway patency impairment
 1. Head extension
 2. Airway obstruction

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1) Introduction

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2) Recreate the plastic and aesthetic of the lower 1/3 of the face

- The character of the face is define by the association of hard and soft tissues
 - Hard tissues
 - 1. Composed by bone and cartilage
 - 2. Creating a scaffolding & serving for the face reconstruction
 - 3. Responsible for projection height & contour of the face

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2) Recreate the plastic and aesthetic of the lower 1/3 of the face



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2) Recreate the plastic and aesthetic of the lower 1/3 of the face

- The character of the face is define by the association of hard and soft tissues
 - **Hard tissues**
 - Composed by teeth and cartilage
 - Creating a scaffolding & serving as the basic infrastructure
 - Responsible for projection height & contour of the face
 - **Soft tissues**
 - Including muscles in terms of the face covered by the skin
 - Responsible for the mobility, the expression and the definition of the face

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2) Recreate the plastic and aesthetic of the lower 1/3 of the face



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2) Recreate the plastic and aesthetic of the lower 1/3 of the face

- The character of the face is define by the association of hard and soft tissues
- Each of these components have to be reconstructed independently to avoid major aesthetic sequelae
 - The bone reconstruction
 - The maxilla
 - The palate = the average mandible side of the upper maxilla
 - The chin coverage

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1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
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- Palate

2) Recreate the plastic and aesthetic of the lower 1/3 of the face

- The character of the face is define by the association of hard and soft tissues
- Each of these components have to be reconstructed independently to avoid major aesthetic sequelae
- Golden rules & workhorse techniques
 - Bone reconstruction
 - Maxilla
 - Mandible

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2) Recreate the plastic and aesthetic of the lower 1/3 of the face

3 parameters	Orbital floor	Mandible
Pressure applied	0	+++
Contamination	0	+++
Irradiation	0/+	0/+
Type of bone graft	Free bone graft	Vascularized bone graft

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2) Recreate the plastic and aesthetic of the lower 1/3 of the face

- The character of the face is define by the association of hard and soft tissues
- Each of these components have to be reconstructed independently to avoid major aesthetic sequelae
- Golden rules & workhorse techniques
 - Bone reconstruction
 - When to use bone graft / reconstructed bone flap
 - Microsurgical techniques for Mandible & tongue-recovery after
 - Soft tissues coverage
 - Regional fascial flaps for aesthetic reconstruction

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1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

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2) Recreate the plastic and aesthetic of the lower 1/3 of the face

- The character of the face is define by the association of hard and soft tissues
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 - Regional fascial flaps for aesthetic reconstruction

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1) Introduction


2) Anatomy & classification

3) General rules


4) Regional specificities

- Mandible
- FOM
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2) Recreate the plastic and aesthetic of the lower 1/3 of the face



Tension lines



Anatomic Units

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1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
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- Palate

2) Recreate the plastic and aesthetic of the lower 1/3 of the face

- The character of the face is define by the association of hard and soft tissues
- Each of these components have to be reconstructed independently to avoid major aesthetic sequelae
- Golden rules & workhorse techniques
 - Free flaps
 - When to use free graft: considered lower lip
 - Microsurgical techniques for "Mandible & tongue-mandible ratio"
 - Soft tissue coverage
 - Buccal fat pad flap: no aesthetic sequelae
 - Forehead scalp flap: "There is no better tissue than scalp tissue" (2004)
 - Microsurgical and vascularized local skin flaps

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1) Introduction

2) Anatomy & classification

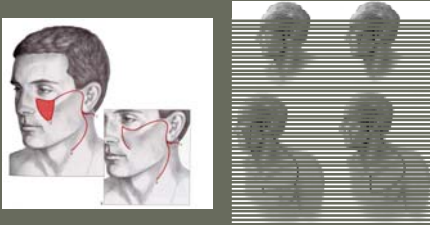
3) General rules

4) Regional specificities

- Mandible
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2) Recreate the plastic and aesthetic of the lower 1/3 of the face

- The cervico-jugal flap



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1) Introduction

2) Anatomy & classification

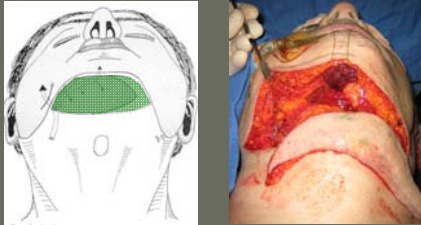
3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

2) Recreate the plastic and aesthetic of the lower 1/3 of the face

- The cervico-jugal flap
- The submental perforator flap



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1) Introduction

2) Anatomy & classification


3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

2) Recreate the plastic and aesthetic of the lower 1/3 of the face

- The cervico-jugal flap
- The submental perforator flap
- The supraclavicular flap



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1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
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- Palate

3) Restore the function

- No Autologous flap have the characteristic of oral tissues
- The Golden rules are:
 - Restore and help the function of the remaining organs
 - Functional cheek with oral tissues (FOM) – Buccinator Flap has the best oral tissue replacement
 - The tongue is often the better
 - Avoid the softening and the swelling effect

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1) Introduction

2) Anatomy & classification

3) General rules

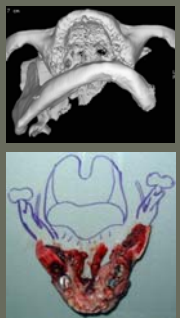
4) Regional specificities

- Mandible
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Specificities of mandibular defects secondary to carcinologic resection

- Long defects
- Two major types
 - Vertical
 - Horizontal
- Associated with large soft tissues resection
- Irradiated tissues

⇒ Reconstruction with vascularized bone flaps



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3 major donor sites

1) Introduction

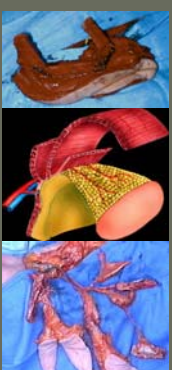
2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
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- Palate

- Fibula
 - Pribaznik C et al. Fibula free flap: A new standard for mandibular reconstruction. Plast Reconstr Surg 1989
- Iliac crest
 - Pribaznik C. The free microvascular fibula: transfer to head and neck. Br J Plast Surg 1992
- Scapula
 - Sauerbrey H et al. The scapula: a vascularized flap for mandibular and maxillary reconstruction. Plast Reconstr Surg 1988



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3 major donor sites

With their advantages and drawbacks

1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

Flap	Tissue Composition of the flap			Donor site parameters	
	Bone	Skin paddle	Pedicle	Position	Morbidity
Fibula	A	C	B	A	A
Radius	D	A	A	C	D
Scapula	C	B	B	D	D
Iliac crest	B	D	D	B	C

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Decision making process

3 questions

1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
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- Palate

- Is there any vascular contra-indication for free flap surgery ?
 - Arterio-venous fistula of the neck and lower extremities
 - It may not being revascularization for microvascular anastomosis with microvascularized free regional flap
- Is the bone defect lateral or central ?
 - It may be bone replacement in maxillary
 - It may be bone replacement in mandible
- Is the bone defect alone or associated to soft tissues resection ?
 - It may be bone replacement as the primary goal of reconstruction
 - It may be soft tissue replacement as the primary goal of the reconstruction

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Clinical situation 1

1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

- The answer to the 3 questions
 1. The mandible carries indications for free flap
 2. Limited defect
 3. Resection
- Reconstructive decision
 - Bone reconstruction is not mandatory for the survival of the patient
 - The bone reconstruction improves quality and functional results
 - Bone reconstruction has to be proposed to patient
- Goals of reconstruction
 - Survival of patient
 - Plastic & Aesthetic → social comfort of the flap
 - Functional → restore deglutition & speech capabilities
- First choice free flap
 - Flaps

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Clinical situation 2

1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

- The answer to the 3 questions
 1. The mandible carries indications for free flap
 2. Limited defect
 3. Bone disease
- Reconstructive decision
 - Central defect of the mandible is responsible for severe plastic and functional sequelae
 - Bone reconstruction is mandatory
- Goals of reconstruction
 - Survival of patient → continuity of airway
 - Plastic & Aesthetic → social being quality
 - Functional → restore the deglutition, mastication, deglutition, speech, breathing
- First choice free flap
 - Flaps

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Clinical situation 3

1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

- The answer to the 3 questions
 1. The mandible carries indications for free flap
 2. Limited defect
 3. Bone associated to soft tissue loss (Tongue or buccal wall of mandible)
- Reconstructive decision
 - Bone reconstruction is the primary goal
 - Bone reconstruction is the mandible & it's second goal
- Goals of reconstruction
- Survival of patient = protection of vessels and airways
 - Plastic & Aesthetic → social comfort of the flap
 - Functional → restore deglutition & mastication, deglutition
- First choice free flap
 - Free flap → free flap → free tongue reconstruction
 - Flaps reconstruction
 - Buccal mucosa
 - Internal cheek
 - Tongue

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Clinical situation 4

- 1) Introduction
- 2) Anatomy & classification
- 3) General rules
- 4) Regional specificities
 - Mandible
 - FOM
 - Tongue
 - Internal cheek
 - Palate

- The answer to the 3 questions
 1. The vascular territory responsible for free flap
 2. General defects
 3. Flaps associated with each vascular territory (region, flap)
- Reconstructive decision
 - Flaps used with different considerations are both primary goals
 - Complete reconstruction is mandatory
- Goals of reconstruction
 - Survival of patient → overall reconstruction strategy
 - Function & aesthetics → overall body goals
 - Functional → restore the primary, reconstructive, degenerative, speech, breathing
- First choice free flap
 - The single flap will not do the job properly
 - 1 flap with sacrifice of some goals
 - 2 free flaps

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Decision making process

- 1) Introduction
- 2) Anatomy & classification
- 3) General rules
- 4) Regional specificities
 - Mandible
 - FOM
 - Tongue
 - Internal cheek
 - Palate

- The goals of reconstruction
 1. Survival of patient
 - Tight packing of the oral cavity
 2. Function & aesthetics
 3. Respiration
 - Allow free movement of the mobile tongue and dental occlusion
 - Restore the contact between mobile tongue and teeth
- First choice flap
 - The single flaps
 - Local mandible flap (FOM) and buccinator
 - Free flaps defects
 - Local tissue transposition flap (Internal cheek)
 - Tissue transposition flap (Free flap, pharyngeal flap)

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Specificities of tongue defects secondary to carcinologic resection

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 - Internal cheek
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- Anatomy of the tongue
 - Divided in 2 parts: oral and laryngeal
 - Mobile tongue (MT)
 - Base of the tongue (BT)
 - Dividing in 3 segments: superior
 - Mobile tongue (MT) → oral cavity
 - Base of the tongue (BT) → laryngopharynx
- Relation of the tongue with neighborhood organs
 - Close relations with other oral cavity, laryngopharynx & airway compartments
- Carcinologic resection does not respect anatomic divisions
 - Global tongue reconstruction will be required

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1) Introduction

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4) Regional specificities

- Mandible
- FOM
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Specificities of tongue reconstructive procedure

- The tongue is a
 - Unique organ in the body
 - Highly specialized in every context & essential functions (breathing, speech, eating)
- Consequence for the reconstruction = remain humble
 - The reconstructive options are limited
 - Aimed to restore the function of remaining organs
 - Restore the remaining functions
 - The most tongue procedures goes often the best results (Dr. Conrad Roth, *Chirurgische Mundheilkunde*, 1998)

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Function of the tongue

- Mobile tongue (MT) = mobility
 - First phase of deglutition
 - Division posteriorly (velum 7, 8, 9)
 - Taste (due to its mobility)
 - Sensitivity (lingual nerves)
- Base of tongue (BT) = Bulk
 - Divides upper phase (velum of deglutition)
 - Division posteriorly (velum 6, 8, 9, 10)
 - Compression (mastication)
 - Swallowing
 - Airway protection

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Goals of reconstruction

- Assure survival of the patient
 - Maximal preservation
 - Airway protection & deglutition
- Recreate Plastic & aesthetic of the face
- Restore Function
 - Mobile tongue (MT) = Mobility
 - Restore the contact between tongue and FOM to avoid the swallowing defect
 - Restore the contact between tongue & the air tongue contact
 - Restore sensibility & sensitive nerve innervation in lingual nerve
 - Base of tongue (BT) = Bulk
 - Restore contact with the posterior tongue to avoid swallowing defect
 - Restore the airway protection
 - Language preservation

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Flap proposed for reconstruction

1) Introduction

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- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

- Mobile tongue
 - Local free flap = FPMR, Buccinator
 - Local free flap = submental
 - Free flap = upper/lower esophageal
 - Pharyngeal free flap

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Forearm flap for mobile tongue (MT) reconstruction

1) Introduction

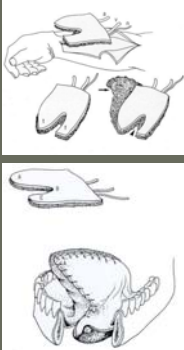
2) Anatomy & classification

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- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

- Specificities
 - Thin & pliable
 - Vascular
- Indications
 - Pharyngoesophageal with FPMR resection
 - Buccinator flap



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Flap proposed for reconstruction

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4) Regional specificities

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- Palate

- Mobile tongue
 - Local free flap = FPMR, Buccinator
 - Local free flap = submental
 - Free flap = upper/lower esophageal
 - Pharyngeal free flap
 - Buccinator free flap

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Flap proposed for reconstruction

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- Mobile tongue
 - Local fascial flap → FAPPM, Buccinator
 - Local muscle flap → sublingual
 - Free Flaps → adipose tissue (mentalis)
 - Pharyngeal free flap
 - Anterior tibial flap
- Base of the tongue
 - Local muscle flap → sublingual
 - Free Flaps →
 - Latissimus dorsi free flap


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Free latissimus dorsi musculo-cutaneous flap for base of tongue (BT) reconstruction

Thompson, J. et al. 1977

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 - Palate

- Specificities
 - Bulk
 - Muscle innervation
 - Not suitable bulk with taste (BTT)
- Indications
 - Base of tongue carcinoma
 - Tongue dysplasia
 - Laryngeal suspension



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Flap proposed for reconstruction

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 - Palate

- Mobile tongue
 - Local fascial flap → FAPPM, Buccinator
 - Local muscle flap → sublingual
 - Free Flaps → adipose tissue (mentalis)
 - Pharyngeal free flap
 - Anterior tibial flap
- Base of the tongue
 - Local muscle flap → sublingual
 - Free Flaps →
 - Latissimus dorsi free flap
 - Pharyngeal free flap
 - Anterior tibial free flap

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Free rectus abdominis musculo-cutaneous flap for base of tongue (BT) reconstruction
Wang, H. H. et al. J Oral Maxillofac Surg. 1998; 56(12):1385-1390

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- Specificities
 - Back
 - Donor site (transverse incision)
 - Flaps and vascular pedicle
 - Ankle back neck line (ABN)
- Indications
 - Base of tongue resection
 - Total glossectomy
 - Laryngeal suspension

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Flap proposed for reconstruction

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- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

- Mobile tongue
 - Local island flap = FOM, Buccinator
 - Local island flap = submandibular
 - Free flap = upper lip, buccinator
 - Free flap = buccinator
 - Free flap =
- Base of the tongue
 - Local island flap = submandibular
 - Free flap =
 - Free flap =
 - Free flap =

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Clinical application and indications

1) Introduction

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3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

- Classification of the defect (Liken L. & col Arch Otolaryngol Head Neck Surg. 1971; 103:11)
- Groups of defects according with the indication of reconstruction
 1. Mobile Glossectomy
 1. Group = T1a
 2. Group = T1b
 2. Hemiglossectomy of BT = Group T2a
 3. Total Glossectomy of BT = Group T2b
 4. Hemiglossectomy of BT = Group T3a
 5. Subtotal Glossectomy = Group T3b
 6. Total glossectomy = Group T3c
- Indication of the reconstructive technique according to the group of defect

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Group I = marginal glossectomy

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- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

- Goal
 - Restore the function of the remaining tongue
- Technique
 - Secondary intention healing
 - Skin graft
 - Pharyngeal flap (FAPPT, tongueless)

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Group II = hemiglossectomy of MT

1) Introduction

2) Anatomy & classification

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4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

- Goal
 - Restore the mobility of the remaining MT
 - Restore the FOM
 - Restore swallowing
- Technique
 - Free flaps → Bilateral forearm free flap
 - Second choice → microvascular thigh free flap
 - Secondary nerve anastomosis

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Group III = Total glossectomy of MT

1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

- Goal
 - Restore the shape of the MT (dental and lip contact)
 - Support & help to the base of the tongue mobility
 - Avoid the anterior gaiting effect
 - Restore swallowing
- Technique
 - Combined tongue flaps or microvascular thigh flap
 - Secondary nerve anastomosis

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Group IV = hemiglossectomy of BT

1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

- Goal
 - Restore volume without compromising the mobility of the remaining BT
 - Closure flap with stable volume
 - Restore consistency
- Technique
 - Free flaps + microvascular thigh flap

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Group VI = Total glossectomy

1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

- Goal
 - Bring stable volume
 - Preserve the volume + functional consistency
 - Restore consistency
- Technique
 - Free flaps + microvascular
 - Second choice + microvascular thigh flap

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Reconstruction des glossectomies totales *Groupe TG*

- But
 - Répondre au volume stable avec structure de forme
 - Restaurer la consistance
 - Prévenir les séquelles
 - Prévenir les douleurs
- Moyen
 - Appliquer les principes généraux de la chirurgie
 - Améliorer les résultats fonctionnels

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Goals and workhorse technique of the reconstruction

- Assure survival of the patient
- Recreate plastic and aesthetic
 - Good hair coverage flap over through and through incision
- Restore the function
 - The tongue must bring it down
 - Allow wide spectrum movement from closed to deep opening without constant tension
 - Large flap paddle is necessary
 - Place scars in the oral commissure to avoid commissure flap
 - Free flaps + anastomosis flap flap

1) Introduction
2) Anatomy & classification
3) General rules
4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

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Goals of the reconstruction

- Assure survival of patient
- Recreate plastic and aesthetic
 - Good hair coverage + PMJ pillar
 - Soft tissue coverage +
 - Good movement if possible for lip and nose reconstruction
- Restore function
 - Close the buccal pouch and nasal commissure
 - Restore the contour of the nasal cavity
 - Avoid velopharyngeal insufficiency
 - Prepare dental rehabilitation

1) Introduction
2) Anatomy & classification
3) General rules
4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

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The P parameter

1) Introduction
2) Anatomy & classification
3) General rules
4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

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Class VI

No PM pillar interruption

```

    graph TD
      Q1{Is the PM pillar interrupted?} -- no --> C1[Class VI]
      Q1 -- yes --> Q2{Is the SP interrupted?}
      Q2 -- yes --> C2["1 choice: forearm free flap  
2 choice: prosthesis"]
      Q2 -- no --> C3[Prosthesis]
  
```

VI_h

VI_{hs}

VI_s

1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

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The H parameter is essential

- Defines the PM pillar interruption
- The canine point is the key
 - Measure of the protrusion
 - Forward maxillary inclination
 - Assess the stability of the dental prosthesis

H

1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

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Class I

```

    graph TD
      Q1{Is the PM pillar interrupted?} -- yes --> Q2{Location / canine point?}
      Q1 -- no --> C1[Prosthesis]
      Q2 -- Yes --> C2[FAMM  
free flap]
      Q2 -- No --> C3[Prosthesis]
  
```

I_h

I_{hs}

1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

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Class III

1) Introduction
 2) Anatomy & classification
 3) General rules
 4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

Flowchart for Class III:

```

  graph TD
    Q1{Is the PM pillar interrupted?} -- Y --> Q2{Location/canine point?}
    Q2 --> C3[Class III]
    C3 --> Q3{Is it subtotal?}
    Q3 -- Y --> F[Fibula flap]
    Q3 -- N --> S[Scapulo-dorsal flap]
  
```

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Class IV

1) Introduction
 2) Anatomy & classification
 3) General rules
 4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

Flowchart for Class IV:

```

  graph TD
    Q1{Is PM pillar interrupted?} -- Y --> Q2{Location/canine point?}
    Q2 --> C4[Class IV]
    C4 --> F[Fibula flap]
  
```

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Class V

1) Introduction
 2) Anatomy & classification
 3) General rules
 4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

Flowchart for Class V:

```

  graph TD
    Q1{Is PM pillar interrupted?} -- Y --> Q2{Location/canine point?}
    Q2 --> C5[Class V]
    C5 --> Q3{Other units resected?}
    Q3 -- Y --> R["1 choice = prosthesis  
2 choice = forearm flap + iliac crest graft"]
    Q3 -- N --> CR[Combined rehabilitation]
  
```

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1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

Class II = center of the problem

❖The canine fossae = key point
❖The premaxillar = base of the central structure of the midface

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1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
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- Palate

The V parameter = complete the H

•Interruption of the other pillar
•ZM
•FM

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Influence du paramètre V dans le groupe II

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Class II

1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

Flowchart for Class II classification:

```

    graph TD
      Q1{Is the PM pillar interrupted?} -- Y --> Q2{Location / canine point?}
      Q2 --> C2{Class II}
      C2 --> Q3{Interruption of other pillar?}
      Q3 -- Y --> A1[Scapulo-dorsal flap]
      Q3 -- N --> A2[Prosthesis]
  
```

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Summary

1) Introduction

2) Anatomy & classification

3) General rules

4) Regional specificities

- Mandible
- FOM
- Tongue
- Internal cheek
- Palate

Classification with 3 parameters

Regrouping patients in 6 classes
