



Dr. S.G. Balamurugan

M.S., M.Ch., M.A., FRCS., Ph.D.,

- **SURGICAL ONCOLOGIST - GURU HOSPITAL, MADURAI,**
- **ADJUNCT PROFESSOR - THE TN DR M.G.R MEDICAL UNIVERSITY, CHENNAI,**
- **SECRETARY, ASSOCIATION SURGEONS OF INDIA, TAMILNADU**
- **NABH ASSESSOR**



GOVT RAJAJI HOSPITAL - MADURAI




GOVT ROYAPETTAH HOSPITAL - CHENNAI

CANCER TREATMENT



Fact
should know **FIRST?**



- 
- A cartoon hand with a black outline and orange skin, pointing towards the text box.
- **I am a CANCER surgeon**
 - **I have completed my cancer surgery with R0 resection-satisfied loco regional clearance**
 - **Pt will get cure by my surgery?**



Patient needs adjuvant treatment as per protocol

IS OPERATING SURGEON REALLY A **PROGNOSTIC FACTOR?**

YES

IS OPERATING SURGEON REALLY A **PROGNOSTIC FACTOR**?

Surgeon as a prognostic factor in the management of Head & Neck Cancer.

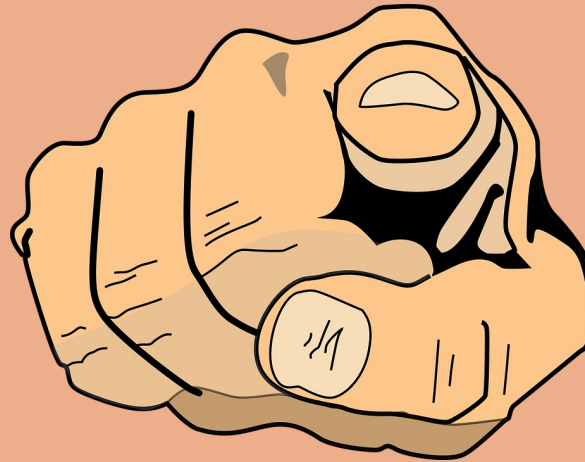
Surgeon's skill and expertise matters not hospital volume



there is a difference....

ONCOLOGICAL OUTCOME

YOUR RESPONSIBILITY



ACHIEVING BEST OUTCOME

HOW CAN REACH THE **BEST OUTCOME?**



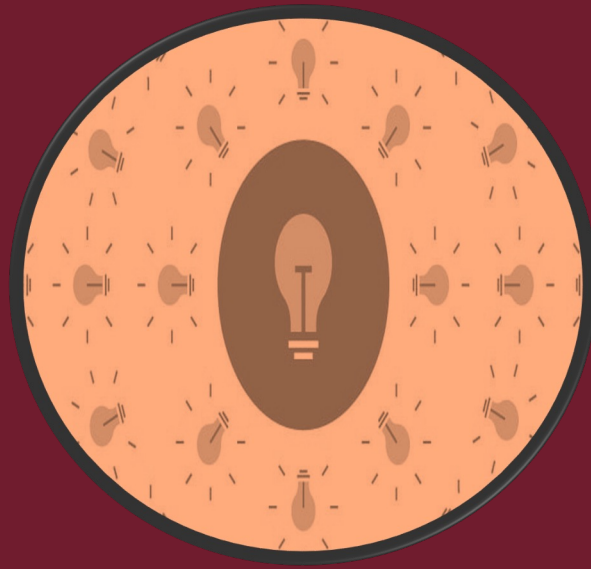
AIM- ONCOLOGY

Cure the cancer

Minimize the treatment related complications

SAFETY MARGIN IN IS NARROW





CONCEPT

WHAT IS HEAD&NECK CANCER

- Head and neck cancers are derived from the mucosal epithelium in the oral cavity, pharynx and larynx and para nasal sinus
- Are known as head and neck squamous cell carcinoma (HNSCC)

WHAT IS ORAL CANCER

The oral cavity is the portion of the aerodigestive tract from the vermillion border of the lips to the junction of the hard and soft palate and the circumvallate papillae of the tongue.

30% of all head and cancer

SITES AND SUBSITES

- This region anatomically includes the
 - lips,
 - buccal mucosa,
 - gingiva,
 - floor of mouth,
 - anterior two-thirds of the tongue,
 - hard palate, and
 - retromolar trigone region
- Commonest CANCER
 - male - tongue
 - female - buccal mucosa
- **Post.tongue and soft palate not included**

CONCEPT IN ONCOLOGY ?



- **DIAGNOSE THE CANCER**

- **EVALUATING THE TUMOR BIOLOGY**

- **STAGING THE DISEASE**

- **ASSESS THE GENERAL CONDITION OF THE PATIENT**

- **FORMULATE THE TREATMENT**



ROAD MAP..

- **Multidisciplinary Tumor Board**
Finalize tumor staging
Formulates treatment plan

WHY MULTIMODAL ATTACK ?

- High success rate
- Toxicity of individual treatment is less
- Treatment efficacy will be high





APPROACH

PREOPERATIVE ASSESSMENT



ORDER OF EVALUATION

History and physical examination,

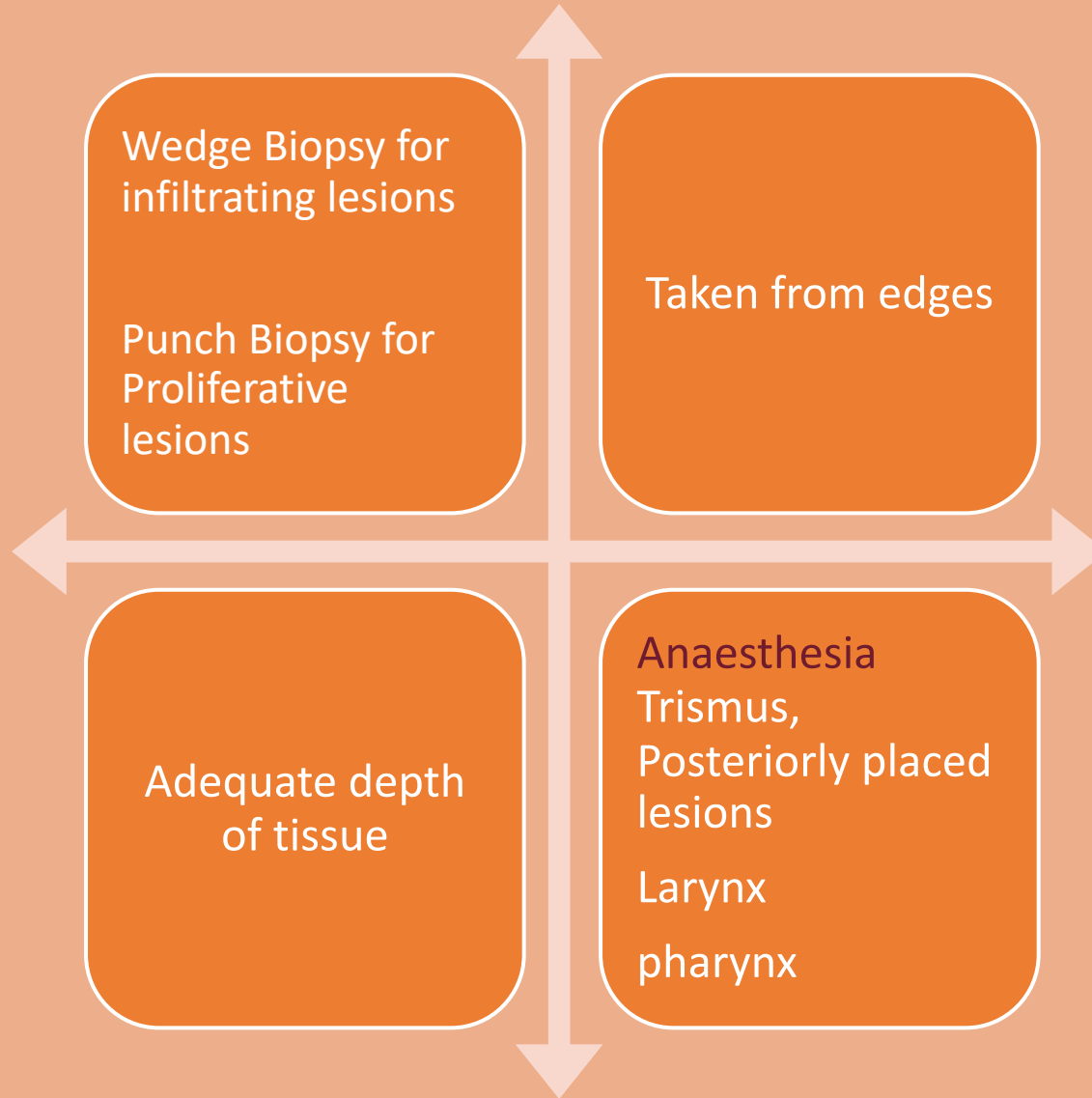
Biopsy for confirmation

Images for assessing the extent

Stage formulation

Treatment planning in tumour board

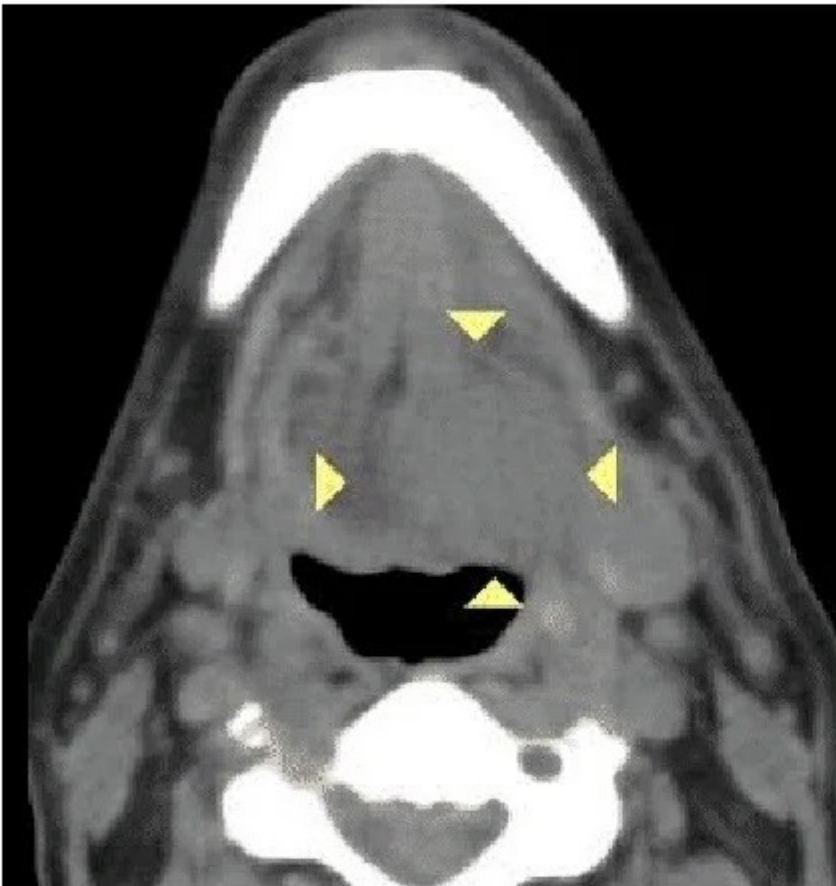
CONFIRMATION OF DIAGNOSIS



LOCAL ASSESSMENT

- CLINICAL
- CT SCAN
- MRI SCAN

PET CT - RECURRENCE



CT Scan



PET Scan

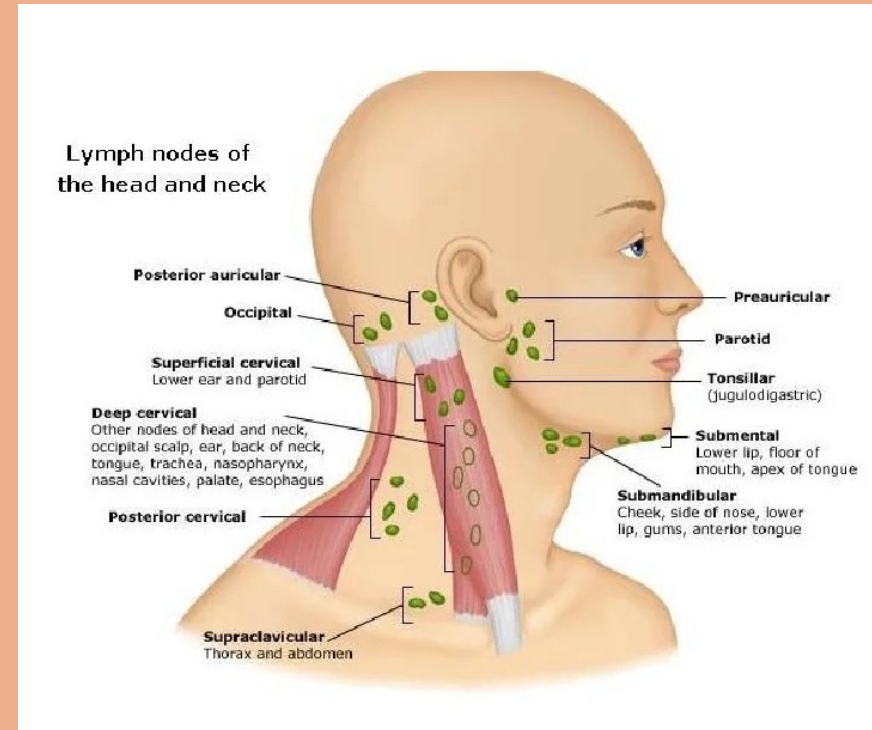
METASTATIC WORKUP

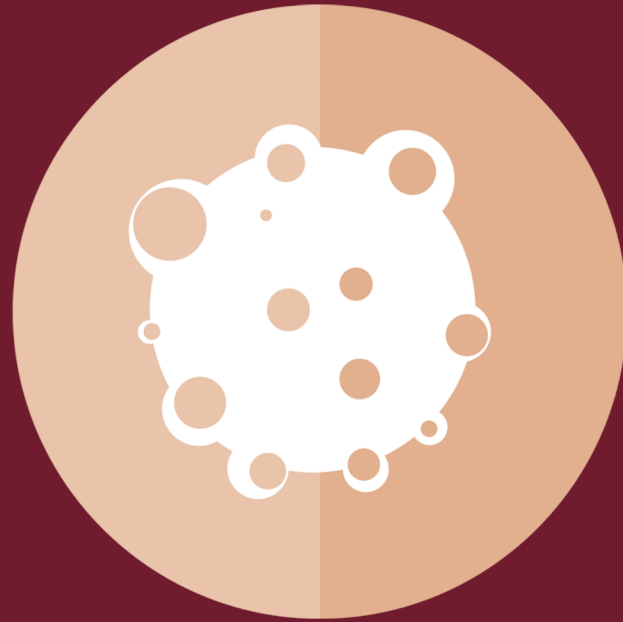
Based on the natural history of the disease, images of the common site of metastasis are to be done.

- **CT lung**

NODAL METASTASIS

- In HEAD & NECK cancer lymph nodal involvement is a regional disease and having prognostic significance
- In Thyroid cancer lymph nodal involvement is not a prognostic factor





BIOLOGY OF CANCER

TUMOR BIOLOGY

- **WHAT IS?**
- **BEHAVIOUR OF THE TUMOUR**
(aggressive vs indolent)
- **Dictated by the molecular genetics**

HOW TO EVALUATE?

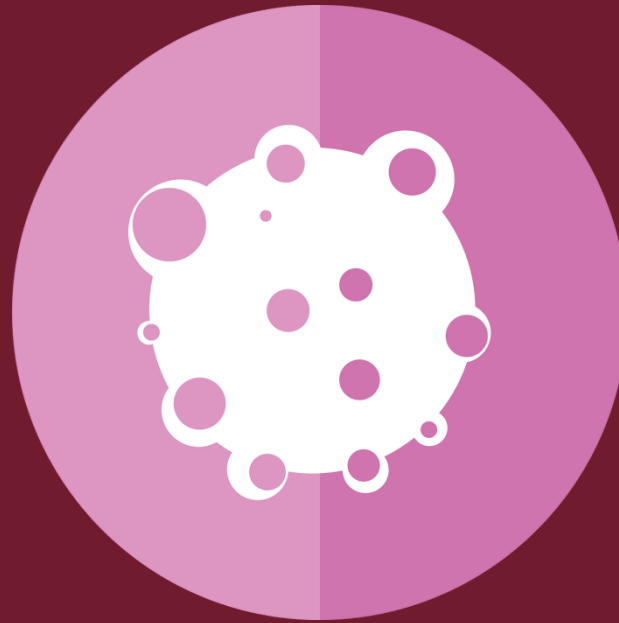
- BY STUDYING THE TUMOR MARKER
- MOLECULAR GENETICS

HOW IT WILL BE HELPFUL?

- ASSESS THE PROGNOSIS
- PLAN FOR TARGETED THERAPY

**ANY BIOLOGICAL FACTOR
INFLUENCE THE OUTCOME,**

IT IS INCORPORATED IN THE STAGING



ONCOLOGY PRINCIPLE

TREATMENT OPTIONS

STAGE 1 & 2

Less than 4 cm and node negative
no bone , skin , nerve invasion

surgery or R.T

STAGE 3 & 4

surgery and R.T

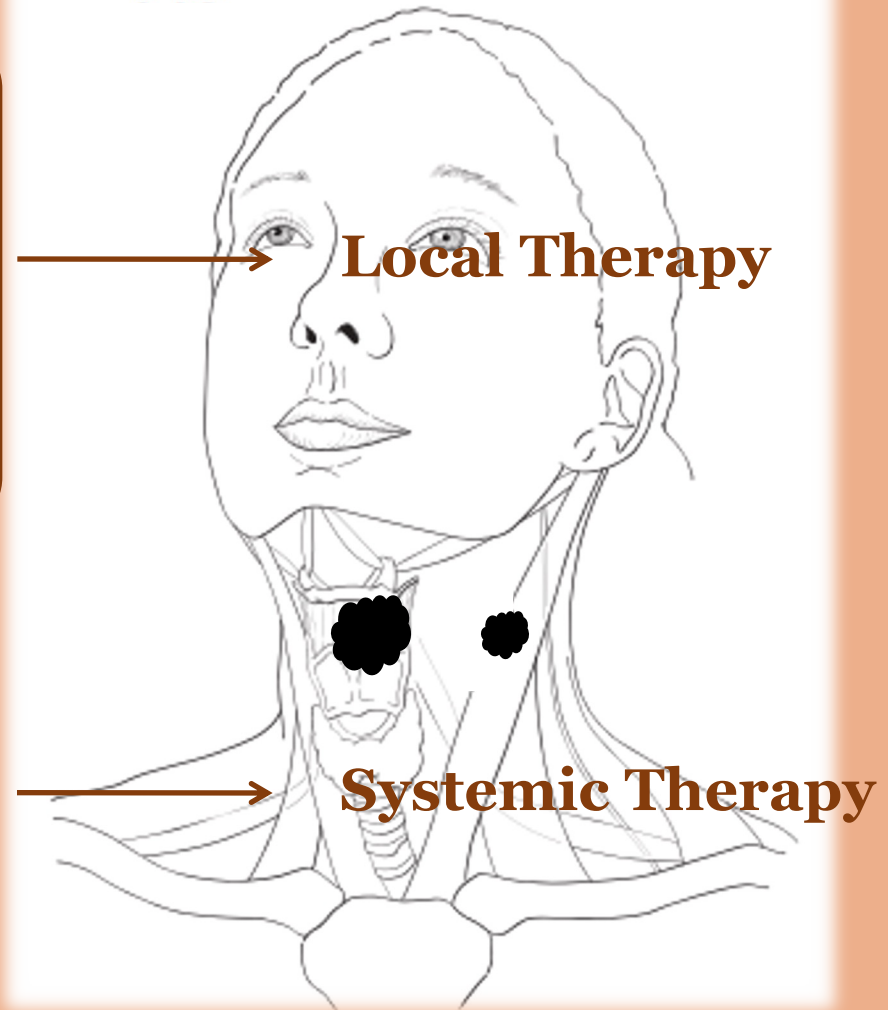
Primary Tumor (Local Disease)



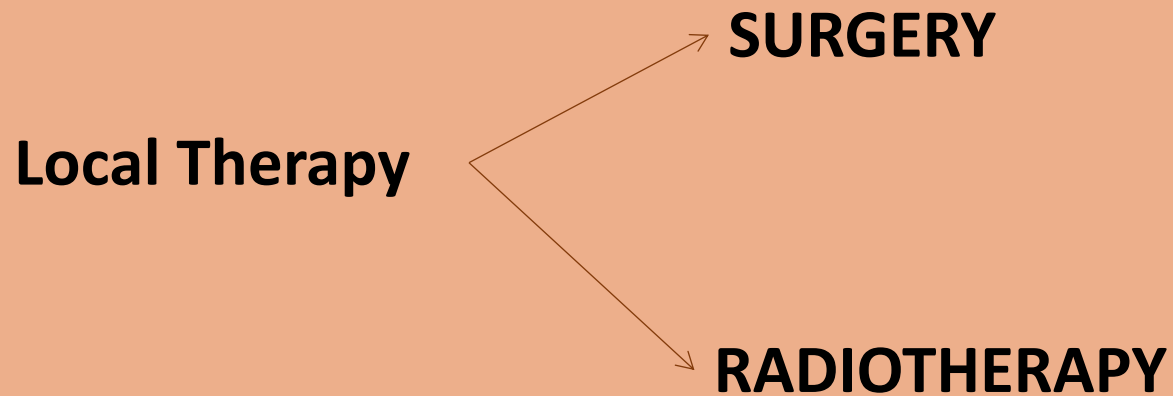
Lymph Node (Regional Disease)



Lung Mets (Systemic Disease)



LOCOREGIONAL CONTROL



ADVANTAGES OF SURGERY OVER RT



- 1 Accurate staging is possible.
- 2 Treatment duration- short
- 3 Patient satisfaction by removing the tumour.

T 1 2 3

N 1 2

T 4

operable

N 3

M

inoperable



SURGICAL PRINCIPLE

Achieving R₀ Resection –

Excision of tumor with wide clearance & lymphadenectomy
With appropriate reconstruction

R

ESECT

ECONSTRUCT

EHABILITATE

- It does not compromise

Radicality of resection

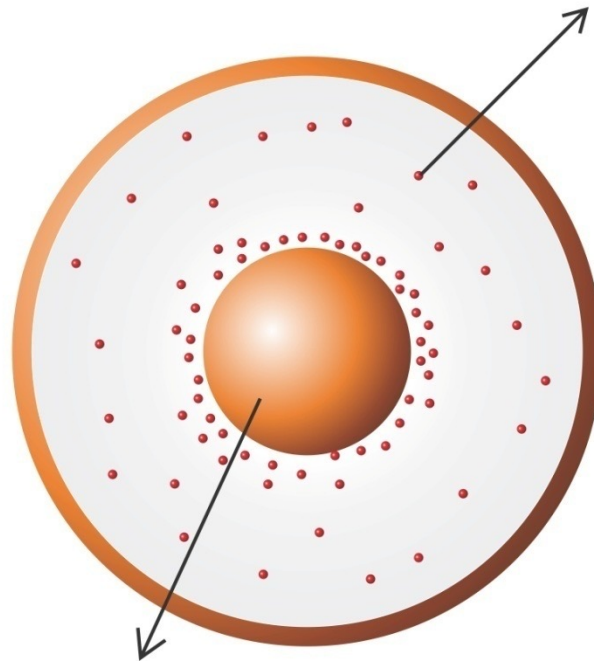
SURGERY

For most solid tumours, surgery remains the definitive treatment.

Onco Surgery comprises of

- Removal of primary disease
- Removal of regional node

Microscopic Cancer



Macroscopic Cancer

SURGICAL PLAN

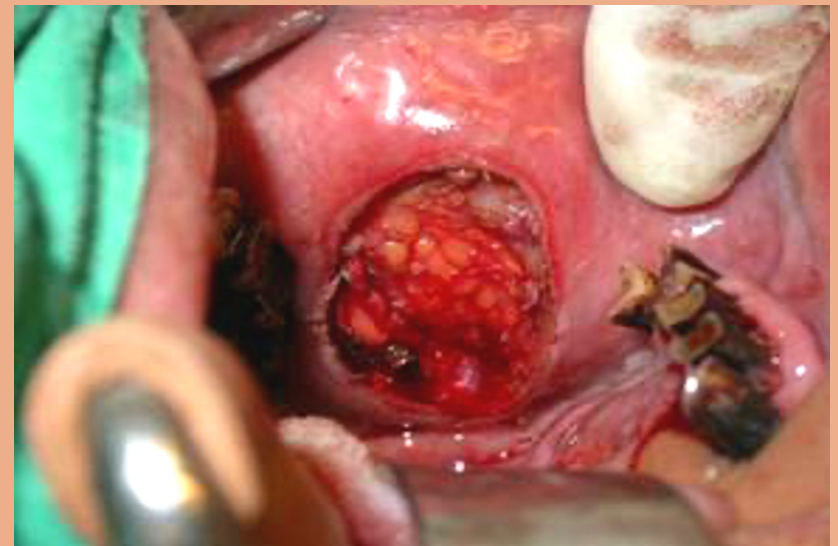
Consists of Five Steps:

- How to ACCESS the lesion ?
- What is the extent of resection ?
- How to handle the Mandible ?
- How to manage the Neck ?
- How to reconstruct ?

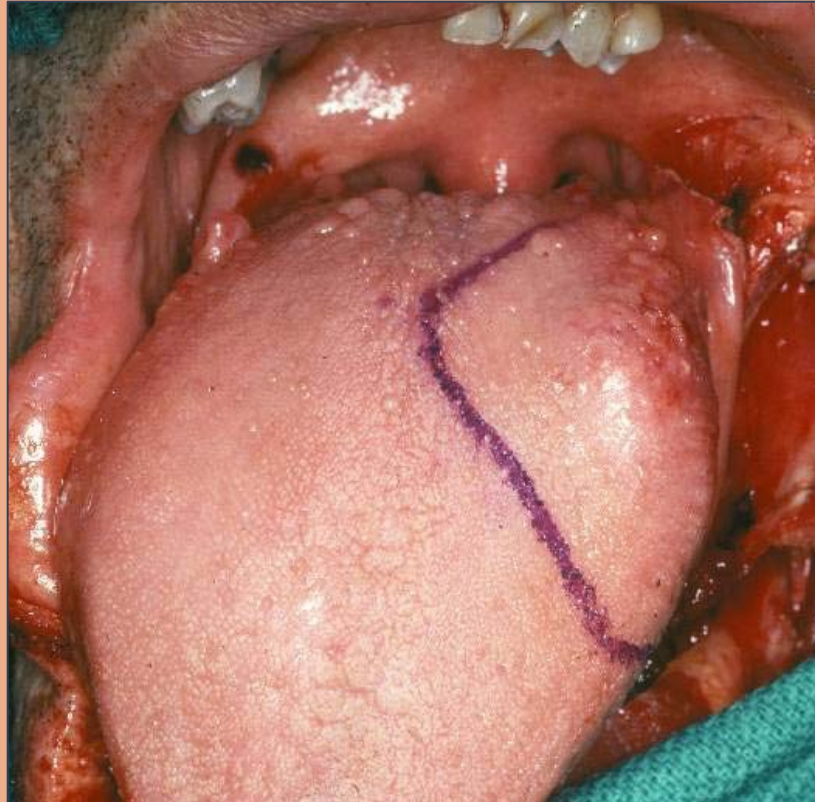
NOMENCLATURES

- Wide excision
- Wedge resection
- Hemiglossectomy
- Partial glossectomy
- Sub total glossectomy
- total glossectomy
- Palatoalveolar excision
- Partial maxilectomy

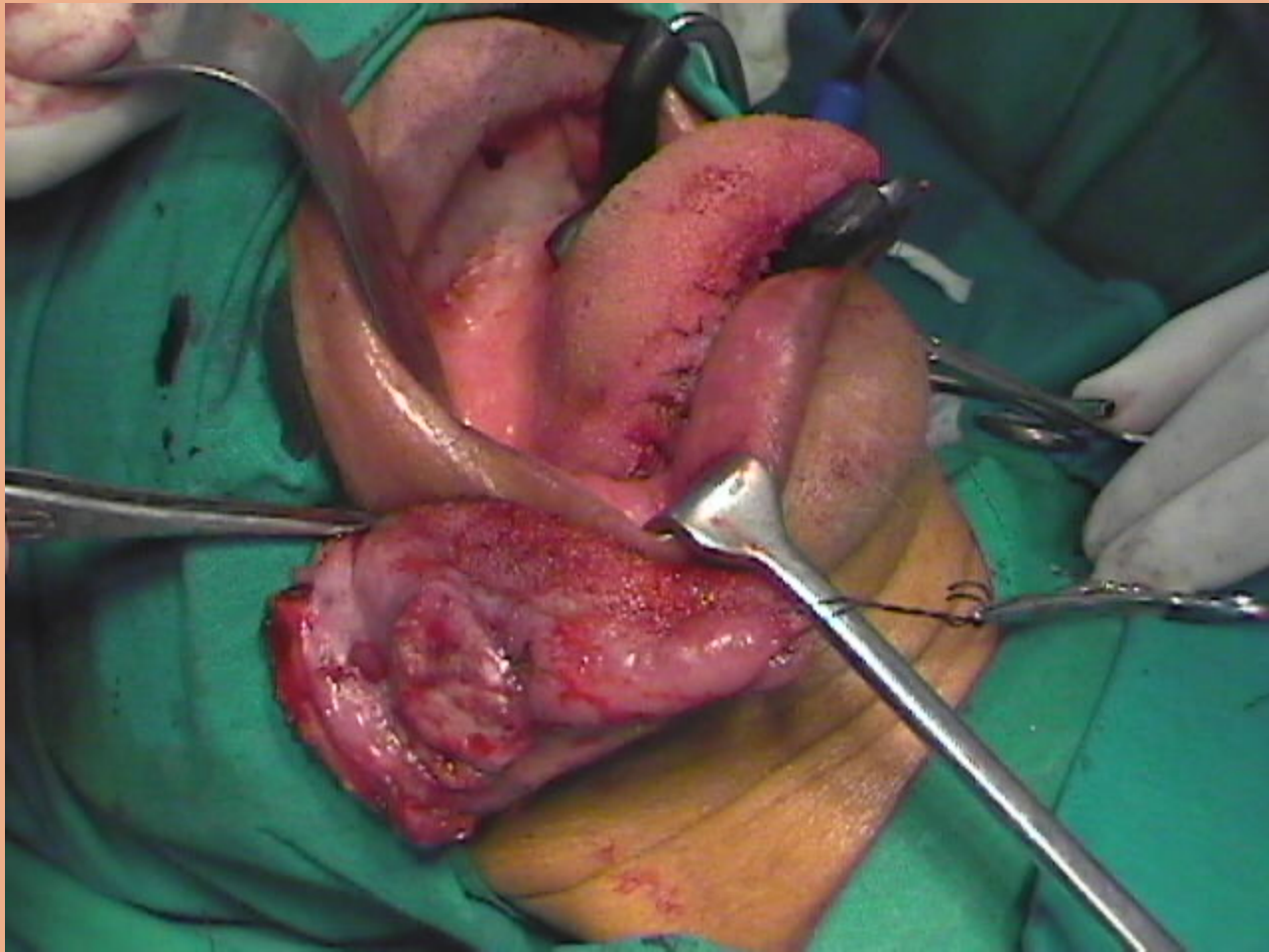
CA BUCCAL MUCOSA WIDE LOCAL EXCISION



WEDGE RESECTION

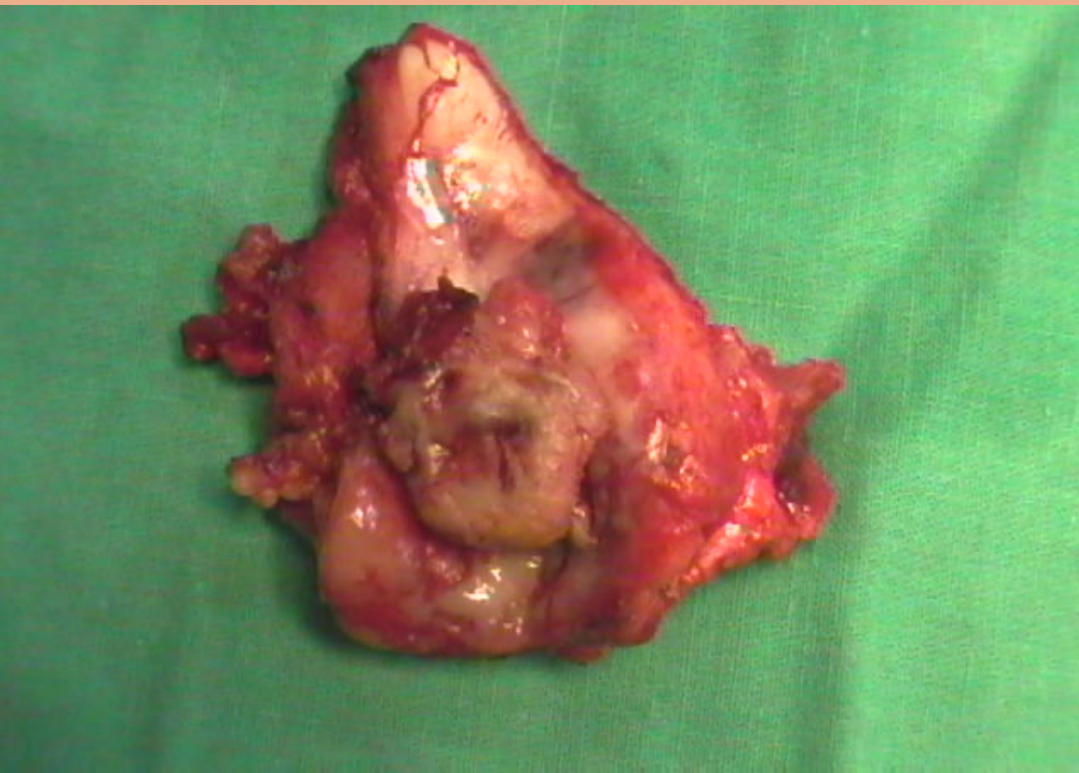


HEMIGLOSSECTOMY





**CARCINOMA
HARD PALATE**



**PALATO-
ALVEOLAR
EXCISION**

MANDIBLE - CLINICAL SITUATION

- **Abutting**
- **Periostium involvement**
- **Superficial erosion**

- **Cortical invasion**
- **Medullary involvement**

TYPES OF MANDIBULECTOMY

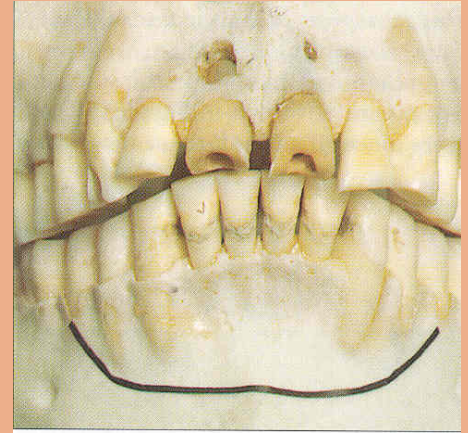
1. Marginal:

Types : Sagittal, Coronal.

Indication: Superficial erosion/close proximity.

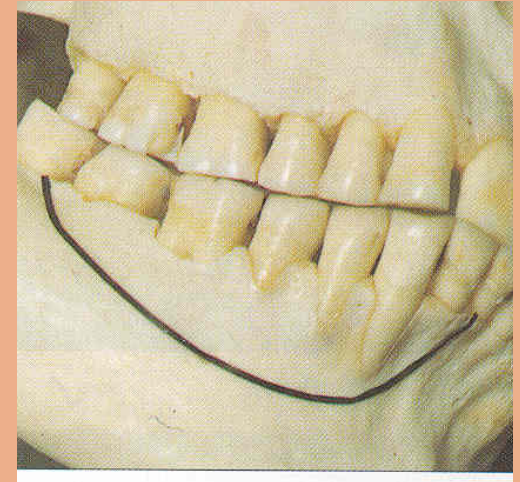
Contraindications: Post RT; Cortical invasion.

High speed drill.



2. Segmental

3. Hemimandibulectomy



ORAL CANCER SURGERY RECONSTRUCTION

BONE DEFECT

- **CENTRAL SEGMENT - MUST**
- **LAT SEGMENT - OPTIONAL**
- **ASCENDING RAMUS - OPTIONAL**



NECK MANAGEMENT

NODAL STATES WITH TUMOR BURDEN

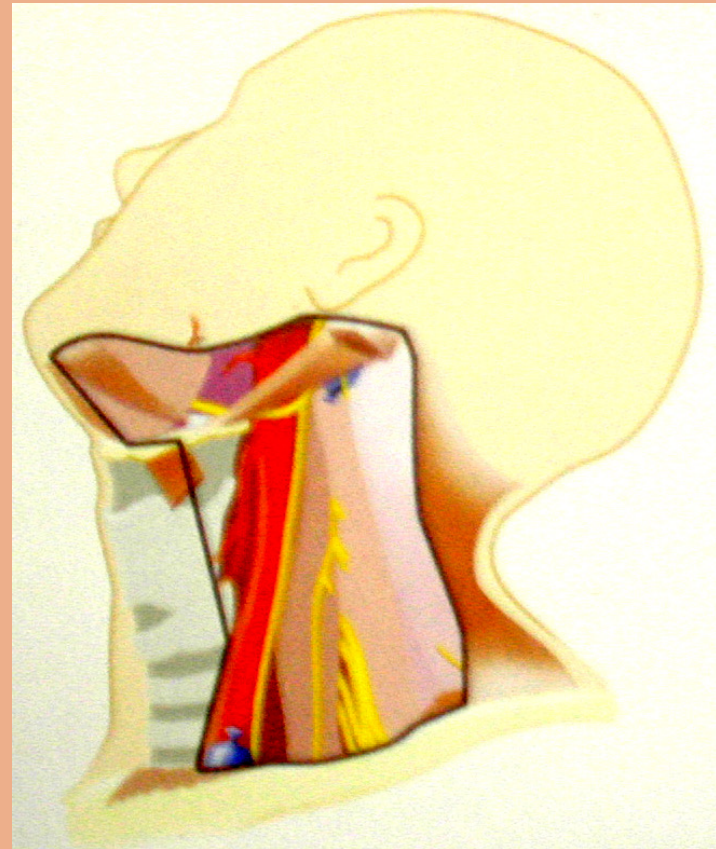
- **Micrometastasis:N0**
 - **Prophylactic block dissection**
- **Macrometastasis:Palpable node**
 - **Comprehensive block dissection +/-RT**
- **Fungating node:**
 - **Palliative treatment**

NECK DISSECTION BASED ON ANATOMY

- **Comprehensive neck dissection**
 - **Radical neck dissection**
 - **Extended radical neck dissection**
 - **Modified radical neck dissection**
- **Selective neck dissection**

RADICAL NECK DISSECTION

- **Boundaries**
 - **Anterior** –
lat border of strap muscles &
opposite ant belly of digastric
 - **Posterior** –
anterior border of trapezius
 - **Inferior** – clavicle
 - **Superior** - mandible

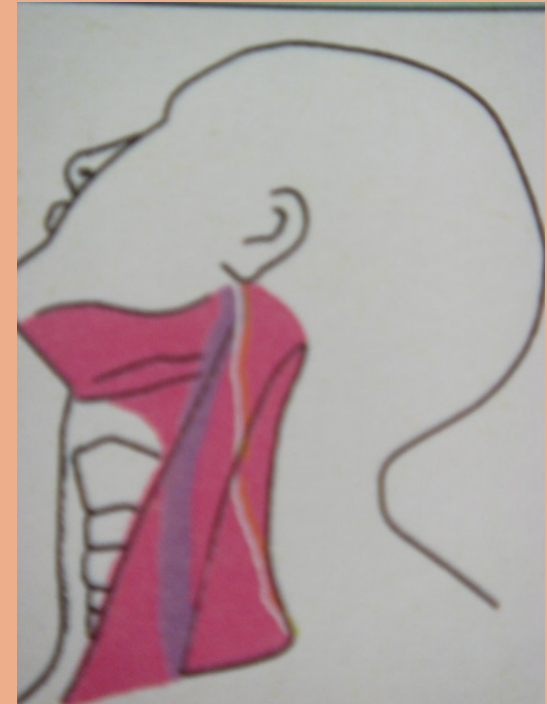
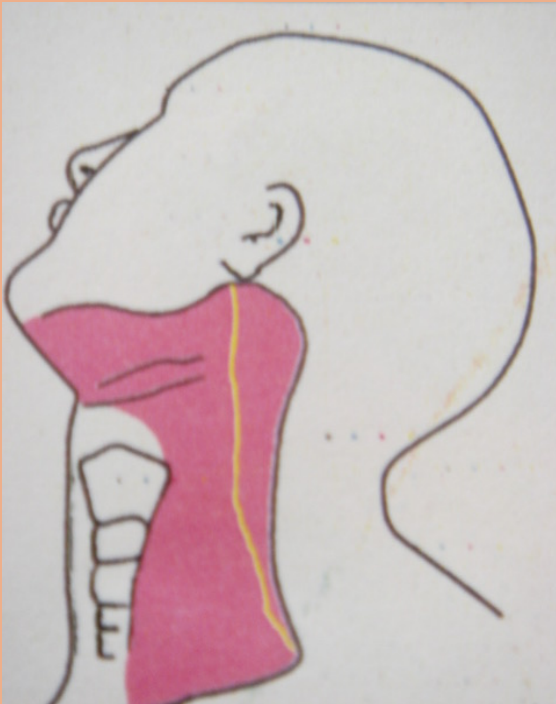


RADICAL NECK DISSECTION



MODIFIED RADICAL NECK DISSECTION

- Type I spinal accessory nerve
- Type II Spinal accessory nerve and Sternomastoid
- Type III SAN, SCM, IJV



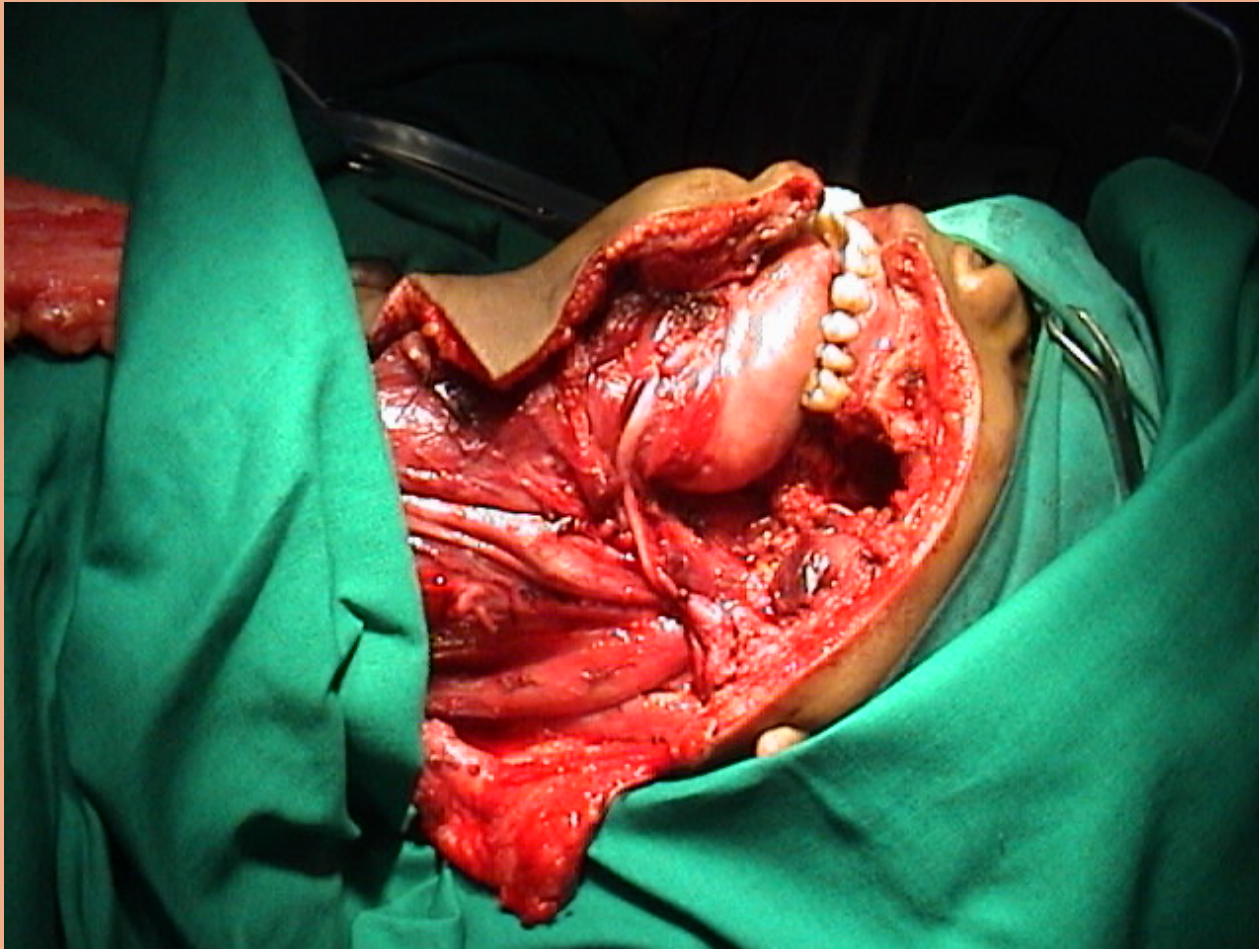
ADEQUATE LYMPHADENECTOMY

HOW MANY NODES?

- **Head & Neck** :

- RND - 10 nodes
- SND - 6 nodes
- Thyroid - 6 nodes

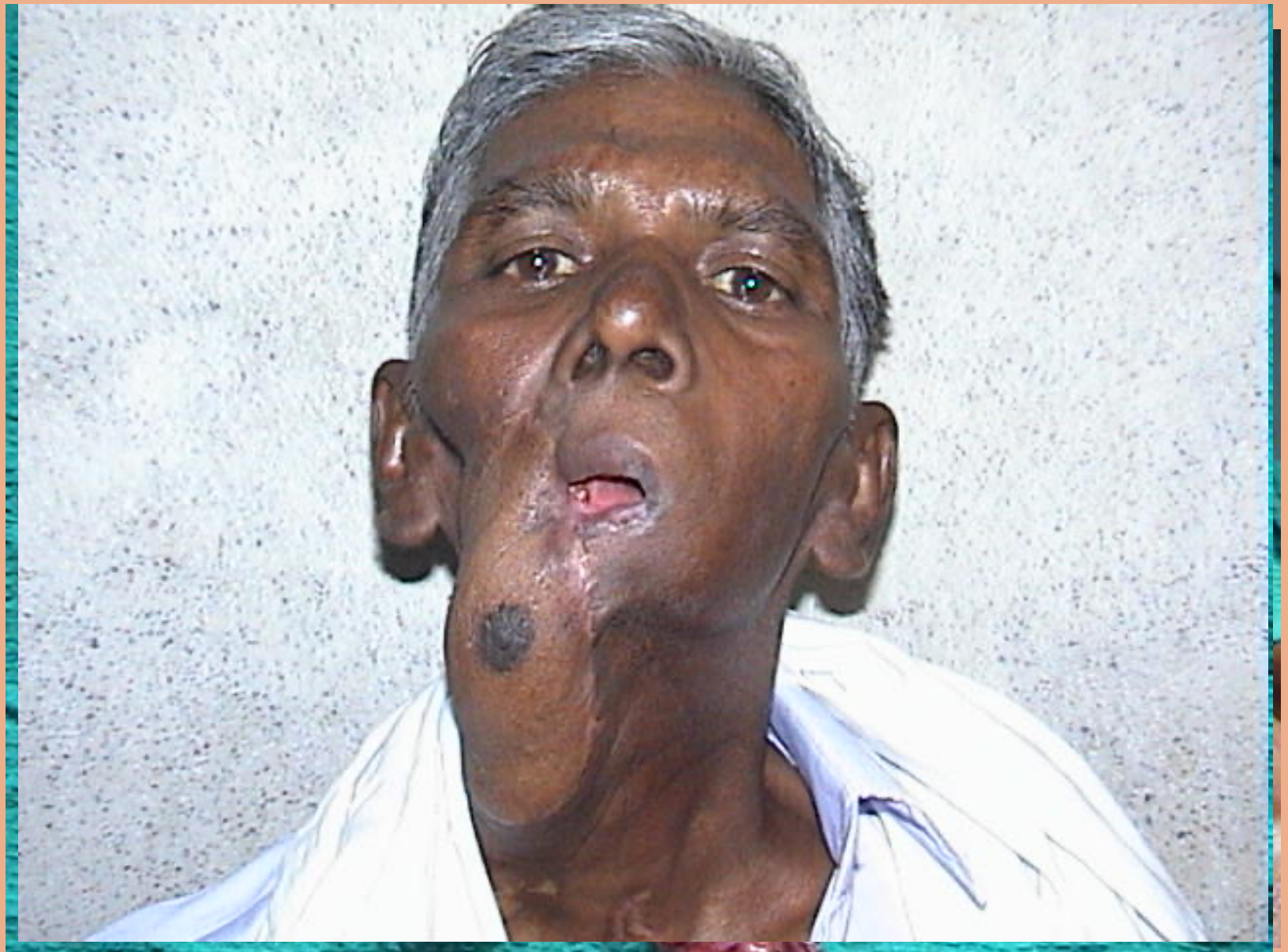
WHAT IS COMPOSITE RESECTION COMMANDO'S OPERATION





ULTRA RADICAL SURGERY





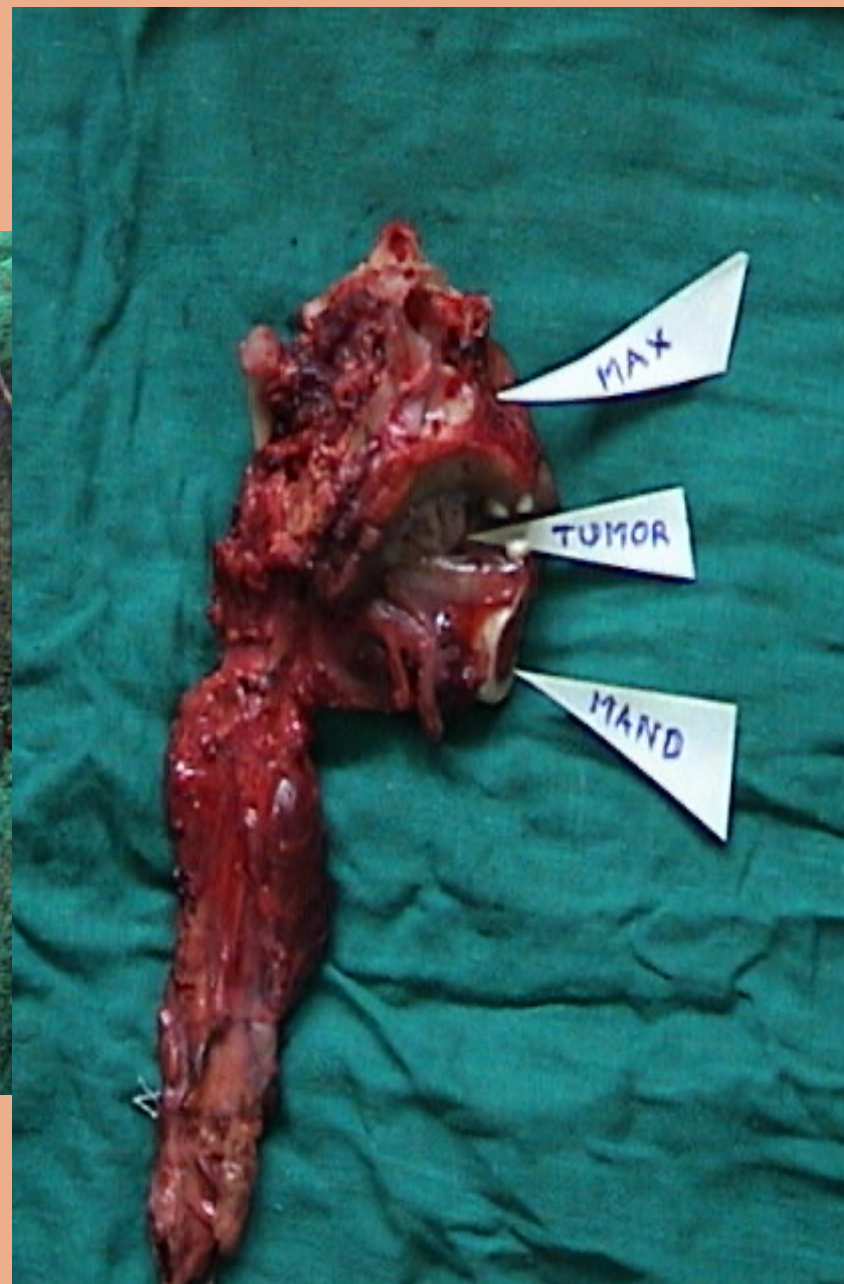
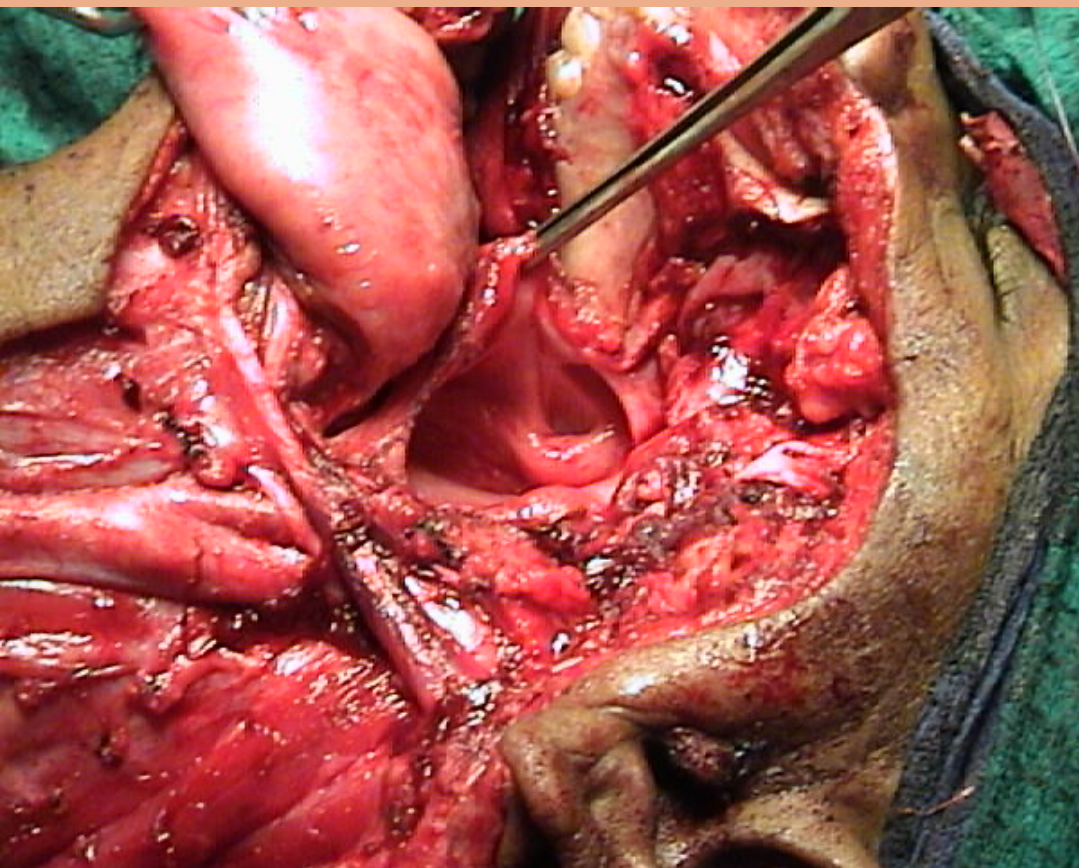
LONGTERM SURVIVOR – CA TONGUE



TOTAL GLOSSECTOMY & LARYNGECTOMY

ABLE TO SWALLOW





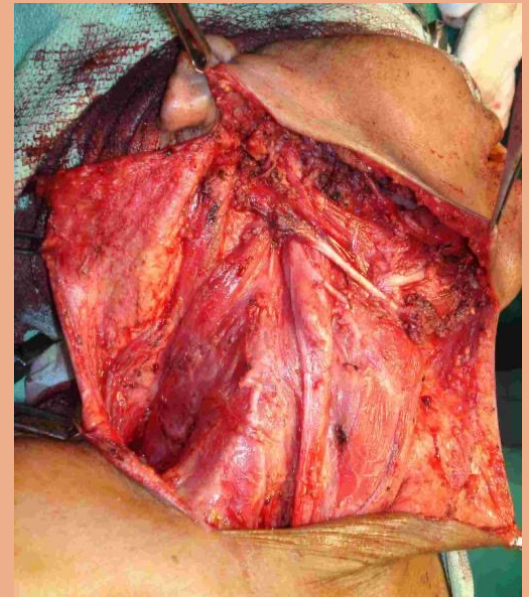
NECK NODES BASED ON ANATOMY

- Levels of neck nodes
 - Level I A submental & submandibular
 - Level II upper deep cervical
 - Level III middle cervical
 - Level IV lower deep
 - Level V posterior triangle
 - Level VI central neck
 - Level VII superior mediastinal



NECK DISSECTION BASED ON ANATOMY

- Comprehensive neck dissection
 - Radical neck dissection
 - Extended radical neck dissection
 - Modified radical neck dissection
- Selective neck dissection



CANCER LIP RECONSTRUCTION



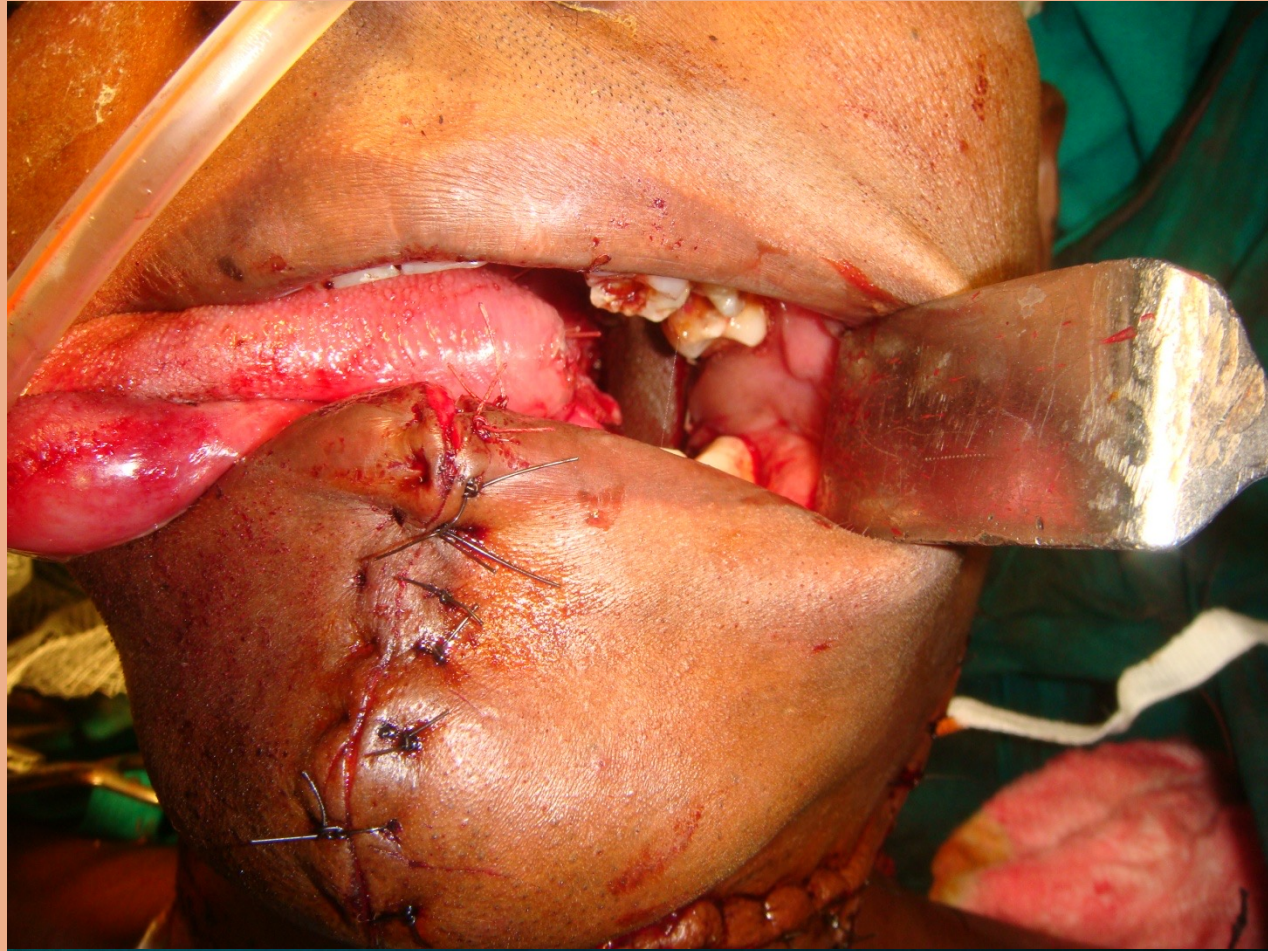
CANCER BUCCAL MUCOSA FORE HEAD FLAP RECONSTRUCTION



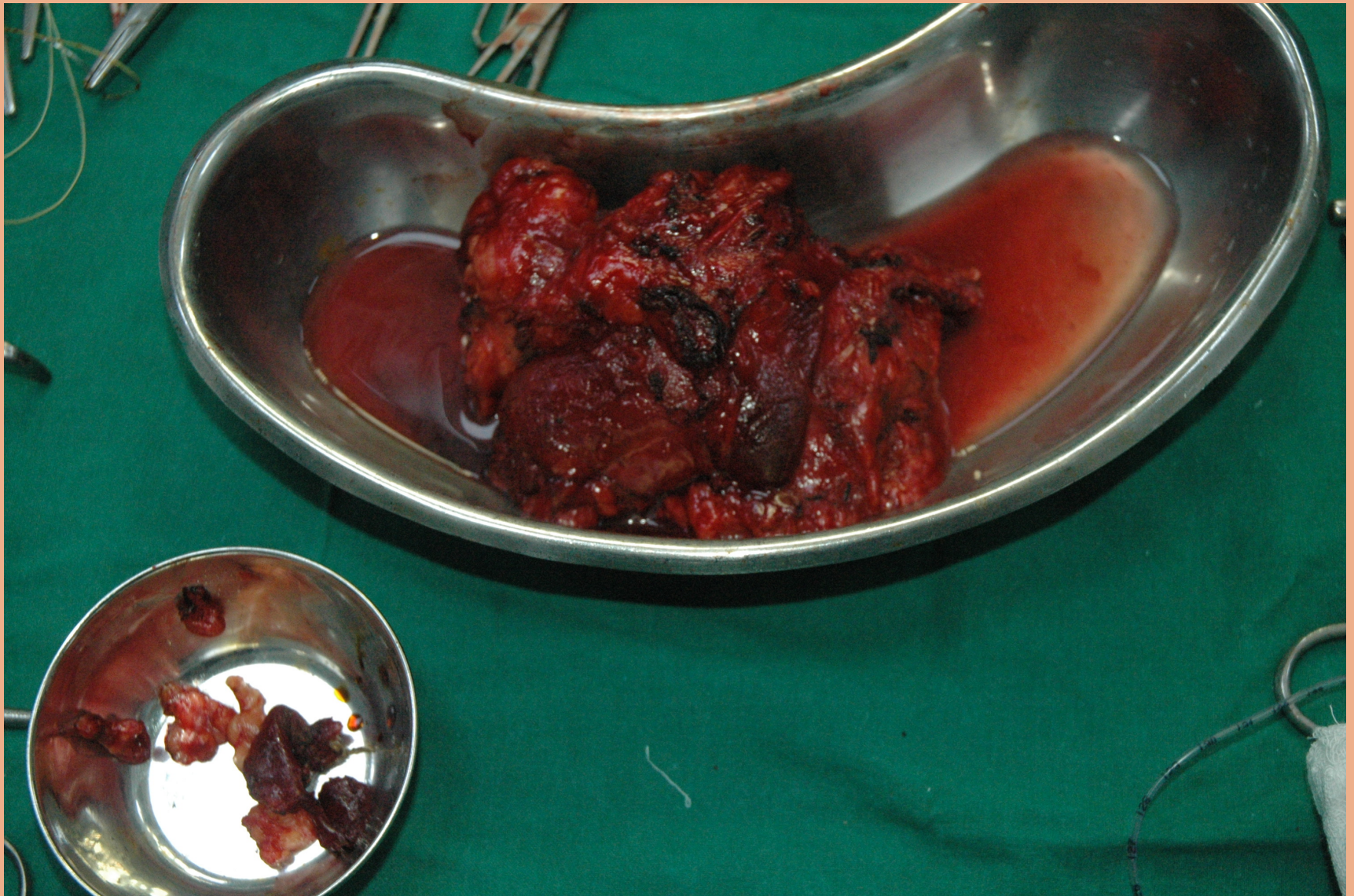
CANCER LIP RECONSTRUCTION



CA TANSIL MANDIBLE SPLIT

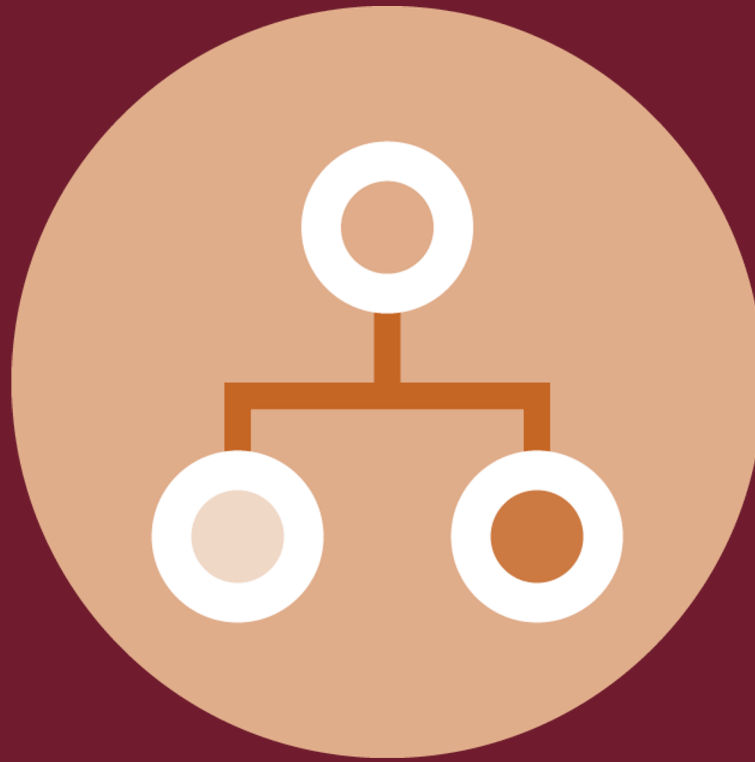


CA TOUNGE WITH NECK DISECTION



CA BUCCAL MUCOSA WITH INVASION OF SKIN





ADJUVANT PRINCIPLE ?

TOXICITY

- Chemoradiotherapy is more toxic than radiotherapy alone.
- To reduce toxicity:-
 - Preoperative rather than post op
 - Radiation volume
 - Dose, fractionation and time
 - Radiation techniques IMRT

- In modern era, by high end technology
- Radiotherapy can be given without adjacent organ damage

CONVENTIONAL VS INTENSITY MODULATED RADIOTHERAPY

Direction

Intensity

Shape

OUR LINAC

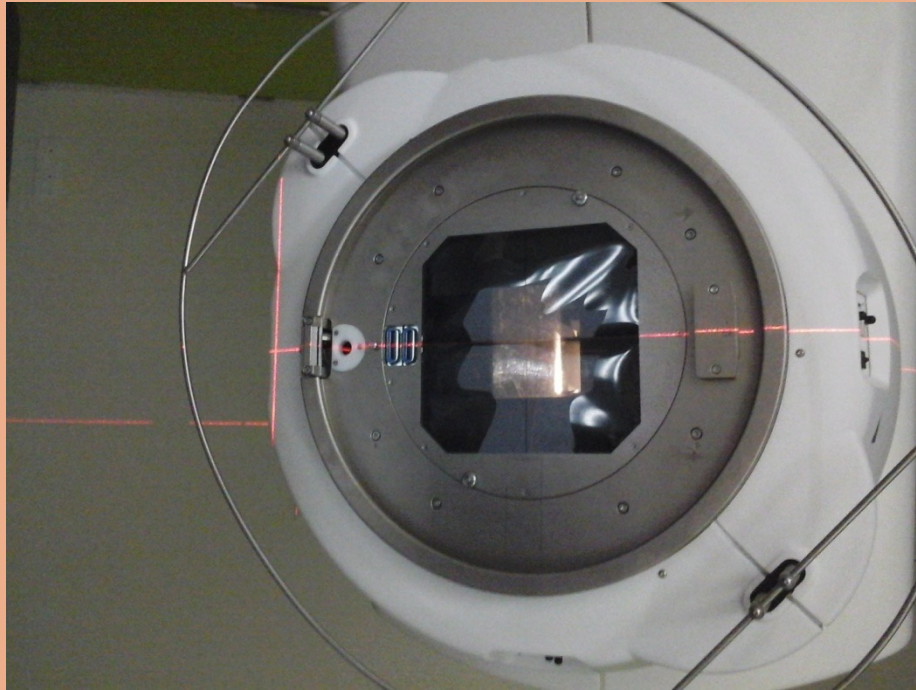


LINAC HEAD

IMAGER

Couch

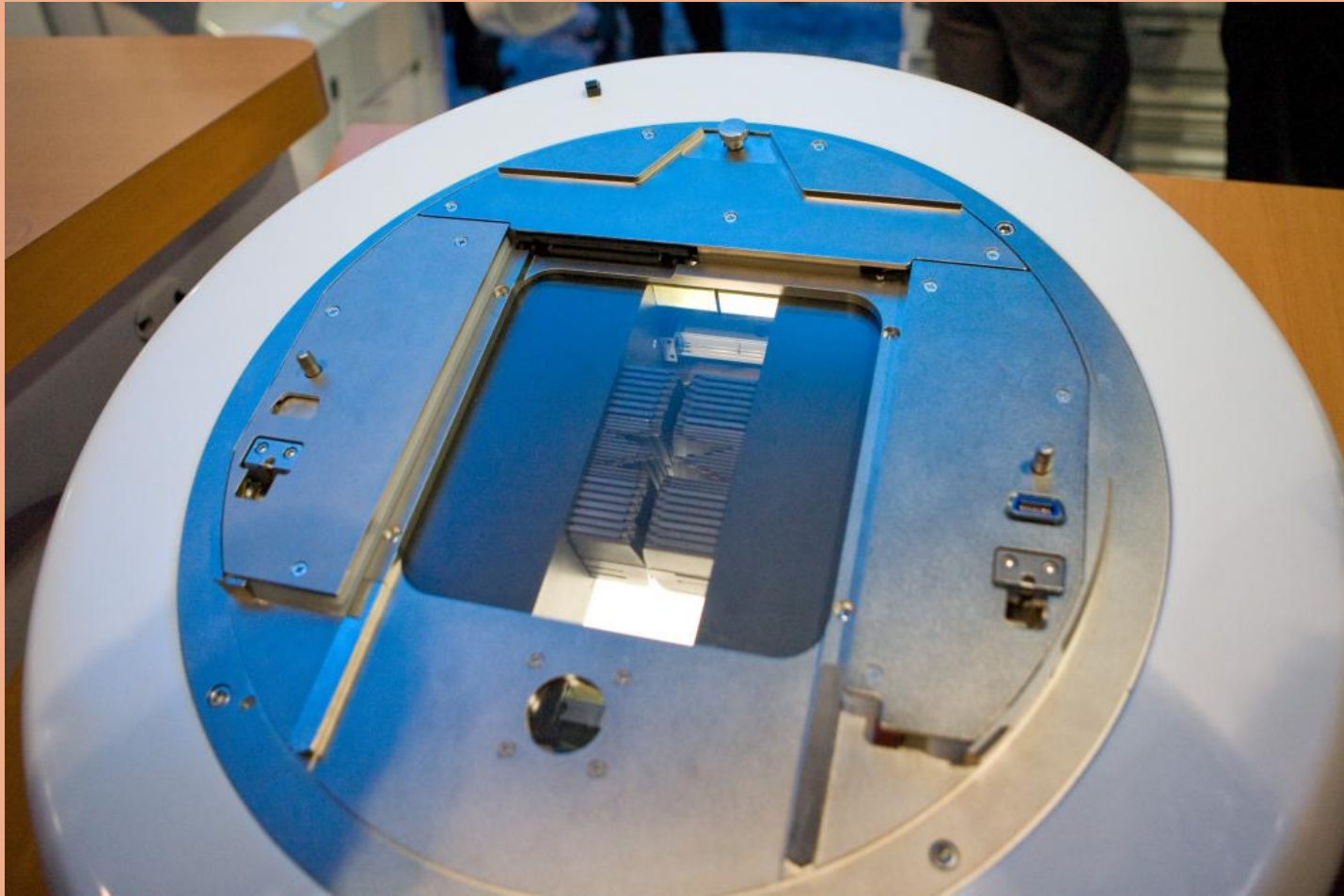
COLLIMATOR



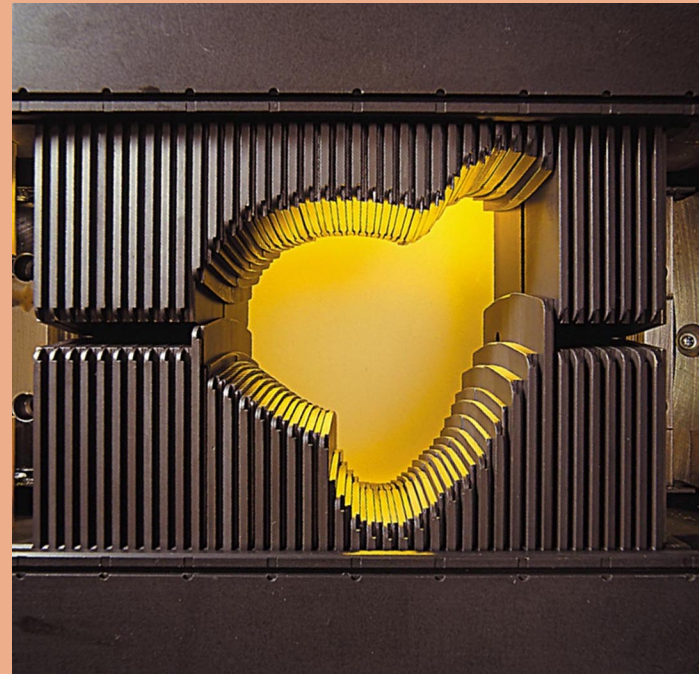
Square /
rectangular shaped
field.

Can increase or
decrease the size
of field.

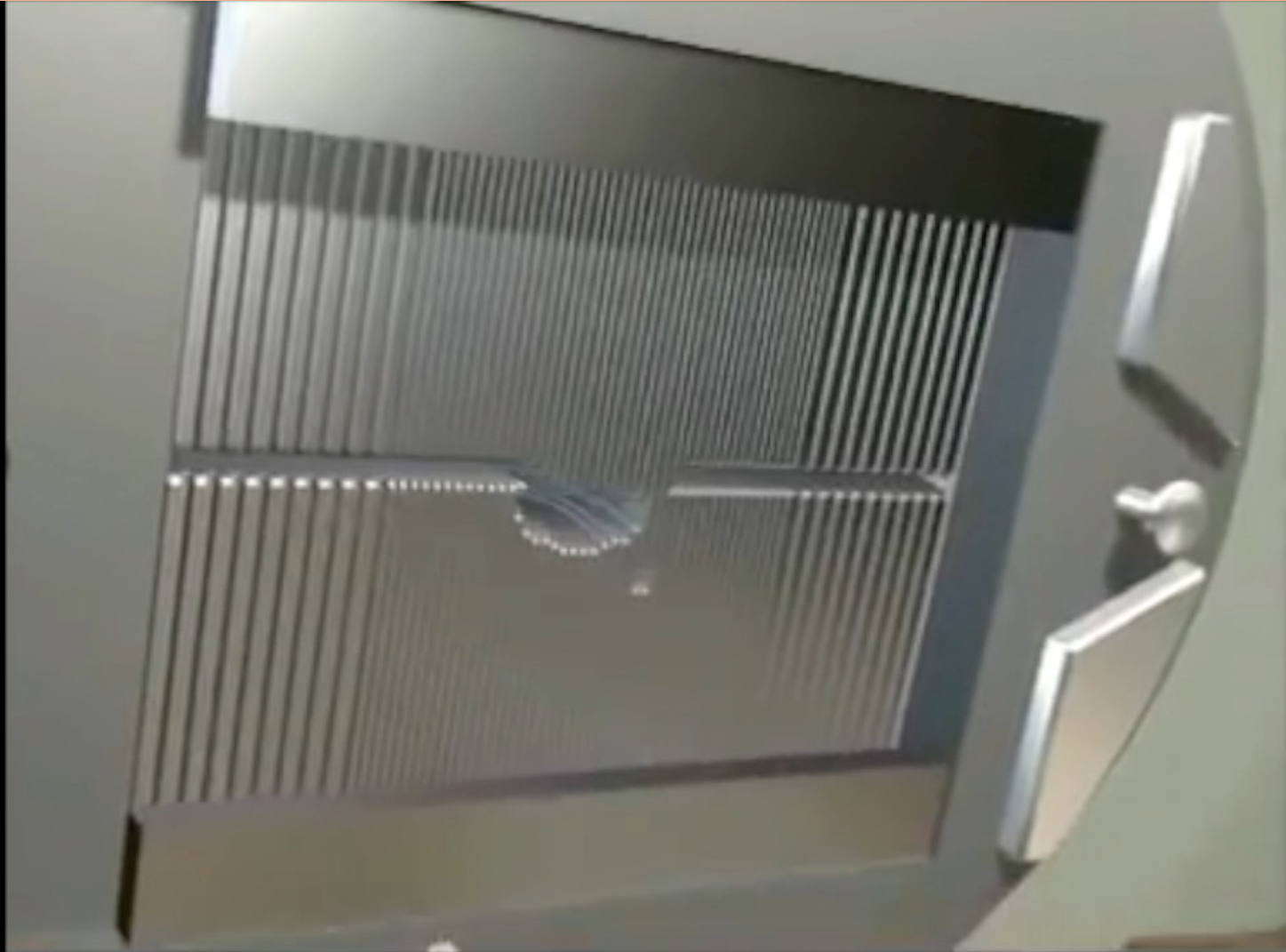
MULTI LEAF COLLIMATOR



SHAPE



SHAPE



DIRECTION

Plan_OK - Unapproved - Model View - CT_1

Isodoses (%)

110.0

105.0

100.0

95.0

90.0

85.0

80.0

3D Dose MAX: 112.4 %

3D MAX for TGT: 112.4 %

3D MIN for TGT: 49.7 %

3D MEAN for TGT: 96.7 %

H

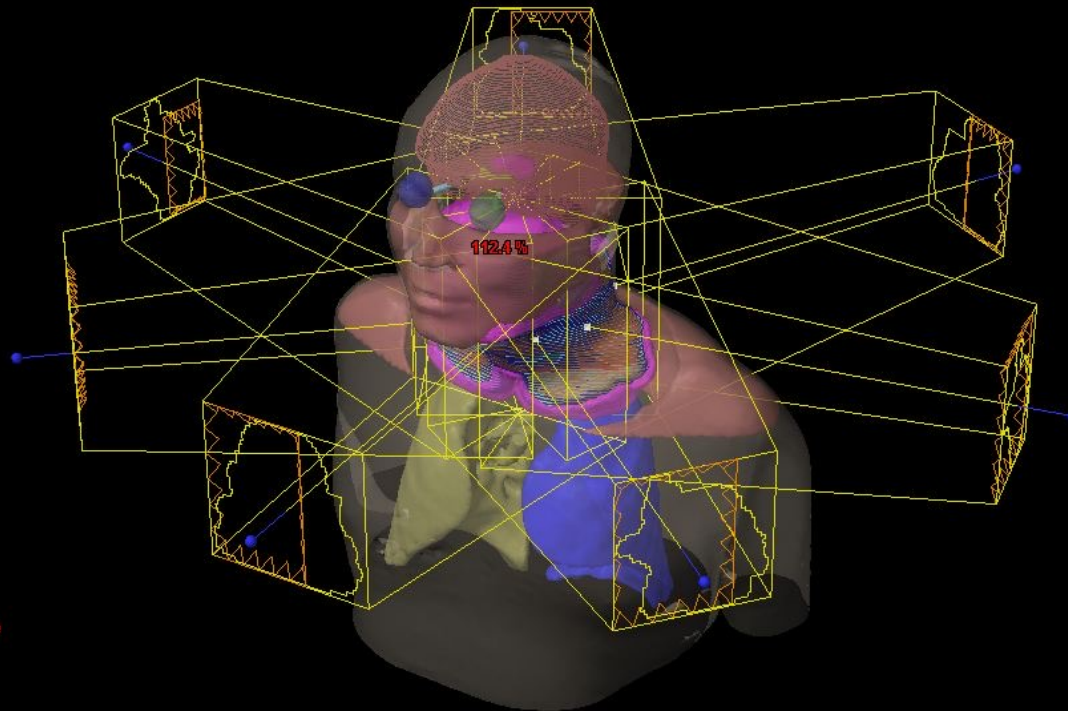
R

112.4 %

L

F

IEC 61217
Head First-Supine

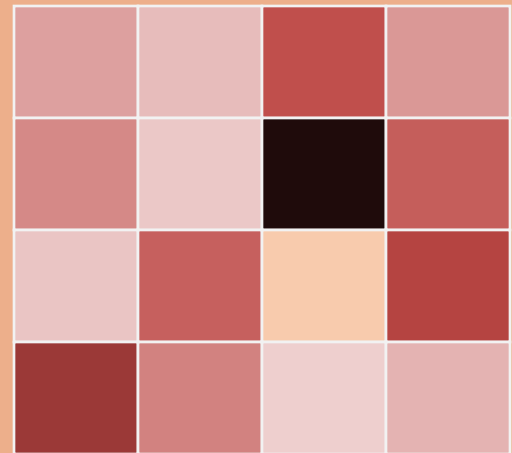


INTENSITY

CONVENTIONAL



IMRT





HOW SURGEON SHOULD BE?

TECHNOLOGY UPDATE

- Learn new techniques at least once a year
- Take time off to do so
- Otherwise you will be

‘Residue’

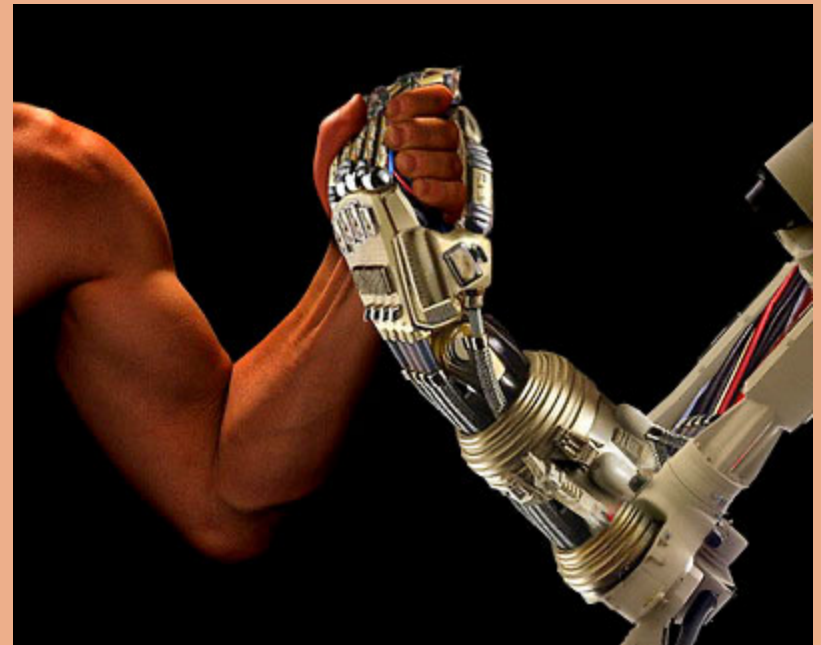
Someone will remove



MIND VS MACHINE

Surgeon should be master for all machines

Machines are the slaves for surgeon



JUST RIDE THE TECHNOLOGY



‘PERSONALIZING CANCER CARE’

“Oncology is no longer a **one-size-fits-all**

- " Tailor treatments to an individual's or to a tumor's unique biology, which helps us to improve outcomes for patients by matching the
- Right treatment to
- Right patient at
- Right time.“



GET READY FOLKS
01 10 10

**FIGHT AGAINST CANCER
WITH FULL FORCE**

FIGHT AGAINST CANCER



GOOD WILL

Do good.
And good will come to
you.



GIVE CONFIDENCE NOT GUARANTEE...



TEAM WORK



**DON'T MISS
TO START EARLY TREATMENT BY YOURSELF**





The SUPERHIT Co. Inc



THE CANCER

TO CURE OR NOT TO CURE

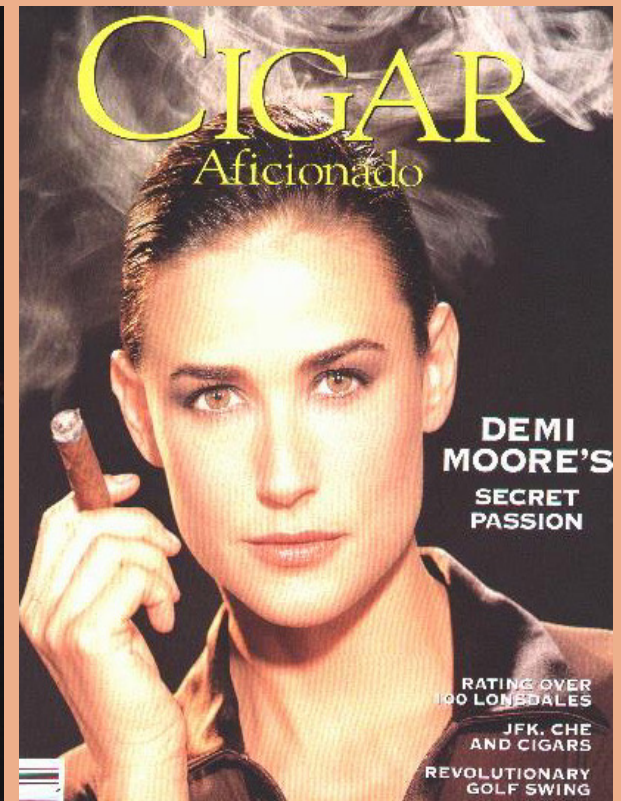
IS IN YOUR HANDS



SOCIAL RESPONSIBILITIES

SMOKING

Using beauty and fame to promote a dirty, devastating habit





*Smoking gives
Cancer
and
Takes back
life*



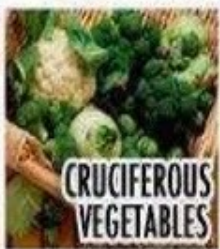
CANCER FIGHTING FOODS

Nutrition Solution Lifestyle™

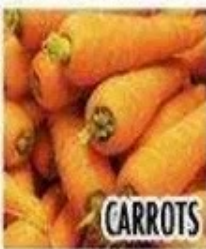
CANCER FIGHTING FOODS, HERBS & SPICES



AVOCADO



CRUCIFEROUS
VEGETABLES



CARROTS



CHILI PEPPERS

JALAPEÑOS



FIGS



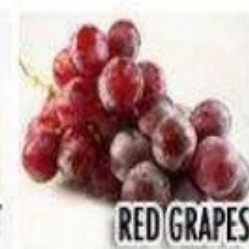
FLAX



GARLIC



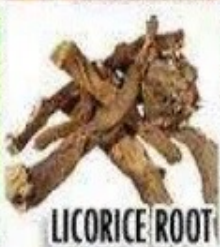
GRAPEFRUIT



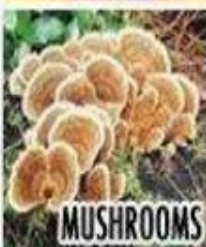
RED GRAPES



KALE



LICORICE ROOT



MUSHROOMS



NUTS



PAPAYA



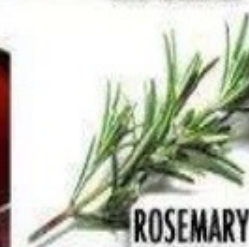
ORANGES &
LEMONS



BLACK RASPBERRIES



RED WINE



ROSEMARY



SEAWEEDS &
SEA VEGETABLES



SOY PRODUCTS



SWEET POTATOES



BLACK TEA



GREEN TEA



CASSAVA



TOMATO



TURMERIC

CANCER RIBBON





THANK YOU..