



Smoking is injurious to Health

TOBACCO=ORAL CANCER

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What is Tobacco?

- ▶ It is the leaves of a plant called *Nicotiana tabacum*.
- ▶ There are more than 70 species of tobacco.



How is Tobacco Processed?



- Leaves are dried and powdered, through a process called 'Curing'

How is Tobacco Used?



Cigarettes



Beedis



Pan Masala



Snuff

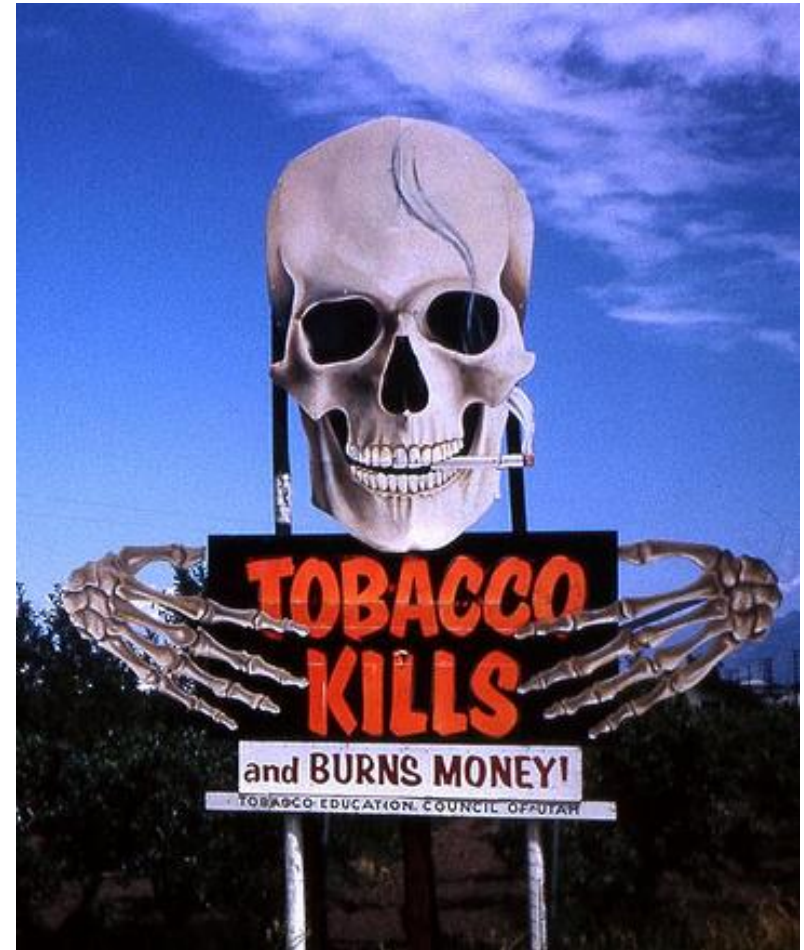
What does Tobacco Contain?

- ▶ Nicotine – Addiction causing Substance
- ▶ Tar – a dark mixture of 4000 poisonous chemicals (many of them causing cancers)
- ▶ Carbon Monoxide – a poisonous gas (same gas from car exhaust)

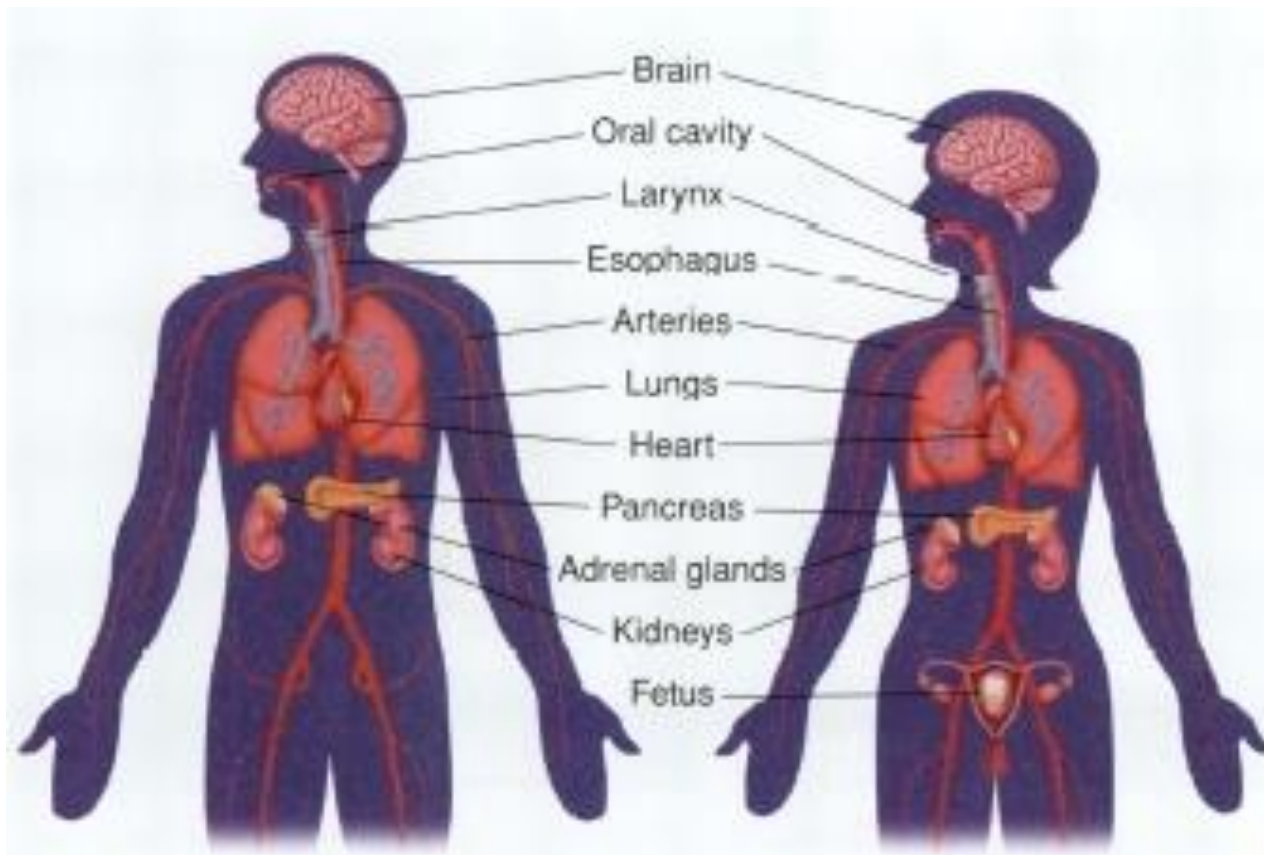


Why is Tobacco Dangerous?

- ▶ It is the Biggest KILLER
- ▶ It Kills **50,00,000** people every year !
- ▶ 10,00,000 in India !
- ▶ It causes **more than 25** diseases !
- ▶ Cost of tobacco use is **Rs. 4500,000,000,000** every year globally.

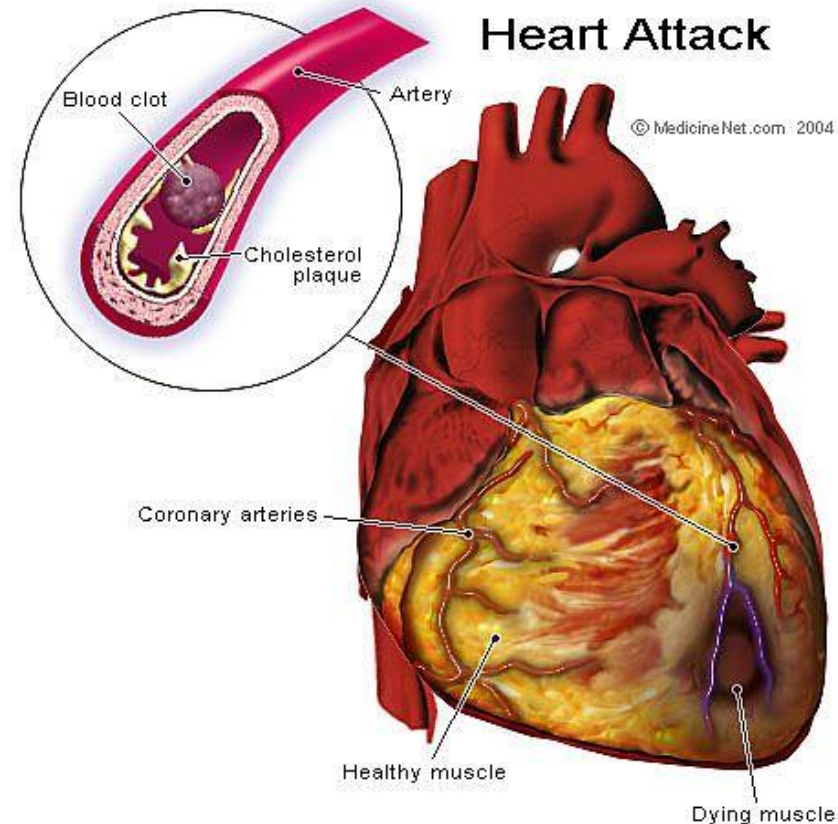


Diseases Caused by Tobacco



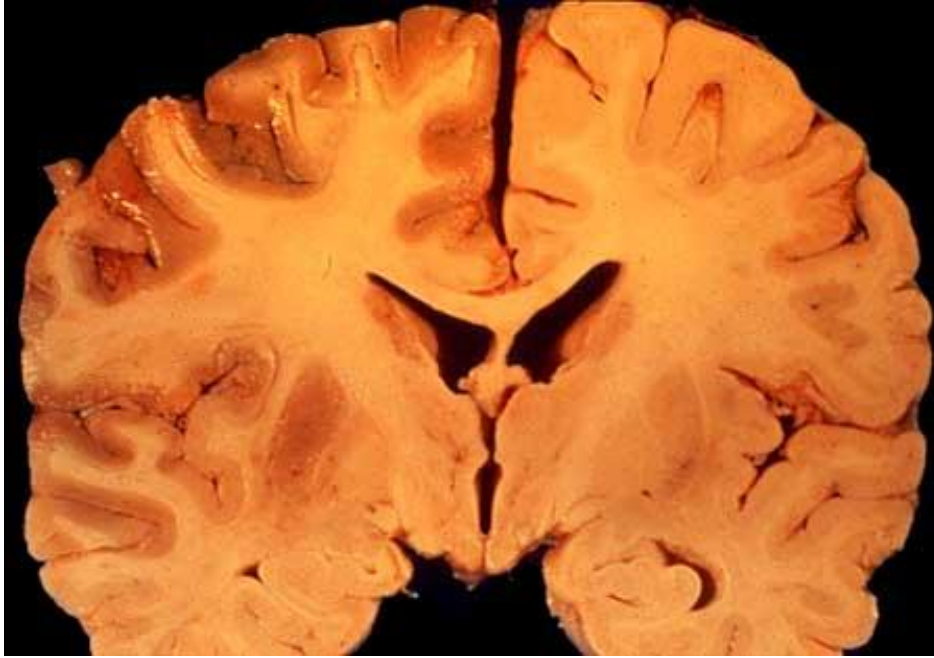
Tobacco causes diseases in almost all parts of the body

Heart Attack

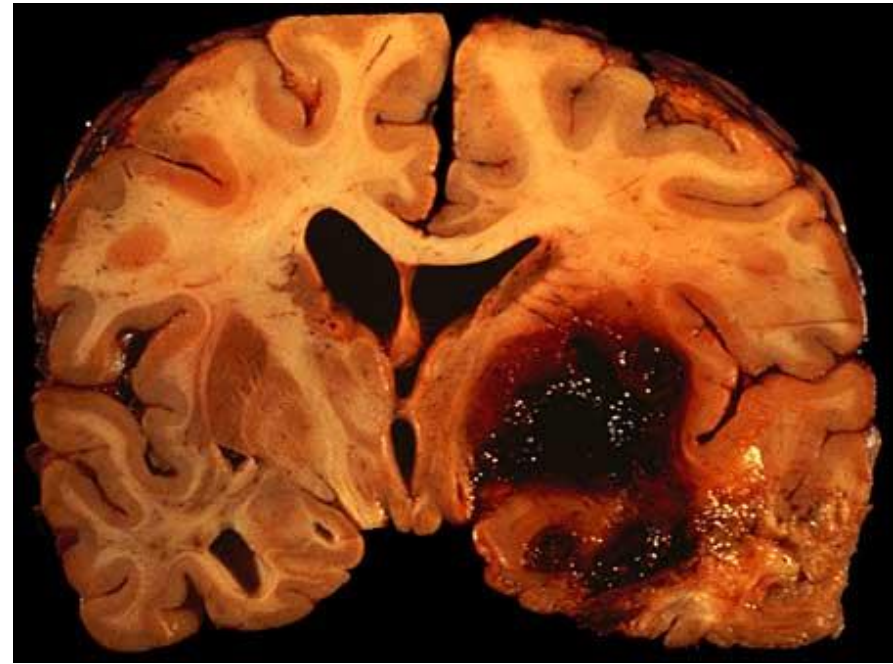


Heart Attack is caused by Tar in tobacco causing damage to the blood vessels of the heart

Brain Damage & Stroke



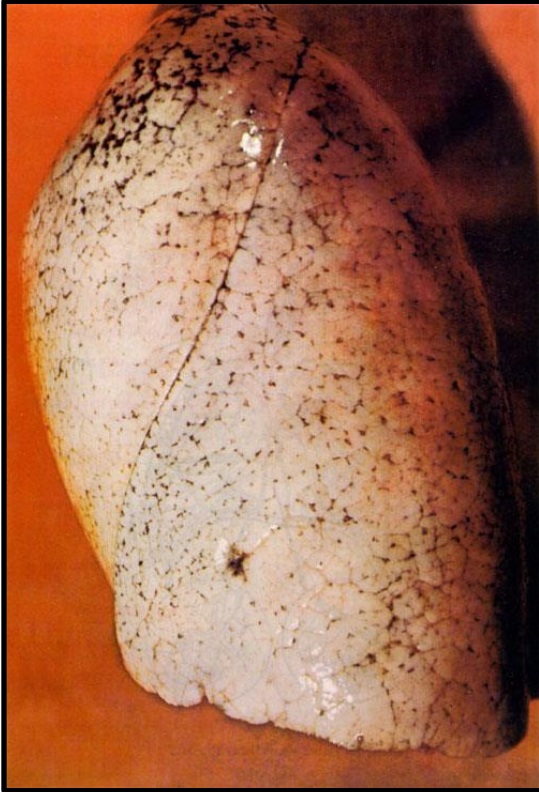
Normal Brain



Brain after Stroke

Stroke is caused by Tar in tobacco causing damage to the blood vessels of the brain

Chronic Bronchitis



Normal Lung



Lung with Chronic Bronchitis

**Chronic Bronchitis is caused by tobacco smoke
destroying the healthy lung tissues**

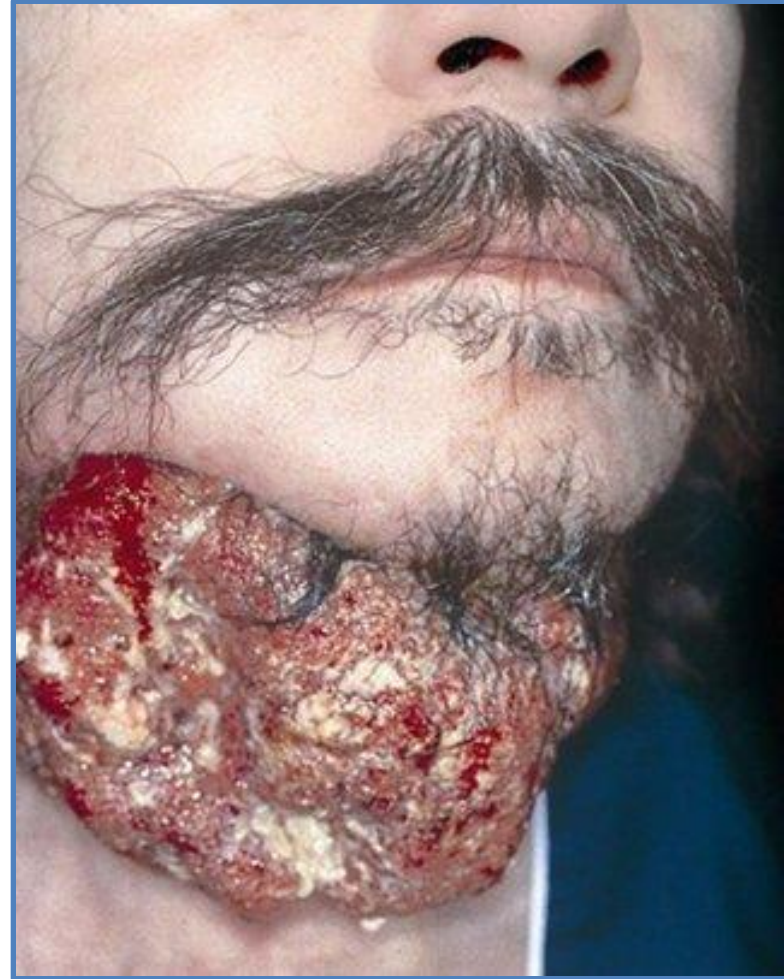
Foot and Leg Ulcers



Leg Ulcers are caused by Tar in tobacco blocking the blood vessels to the legs

Throat Cancer

**Tobacco causes
Throat Cancer**



Food Pipe Cancer

Tobacco
causes Food
Pipe Cancer

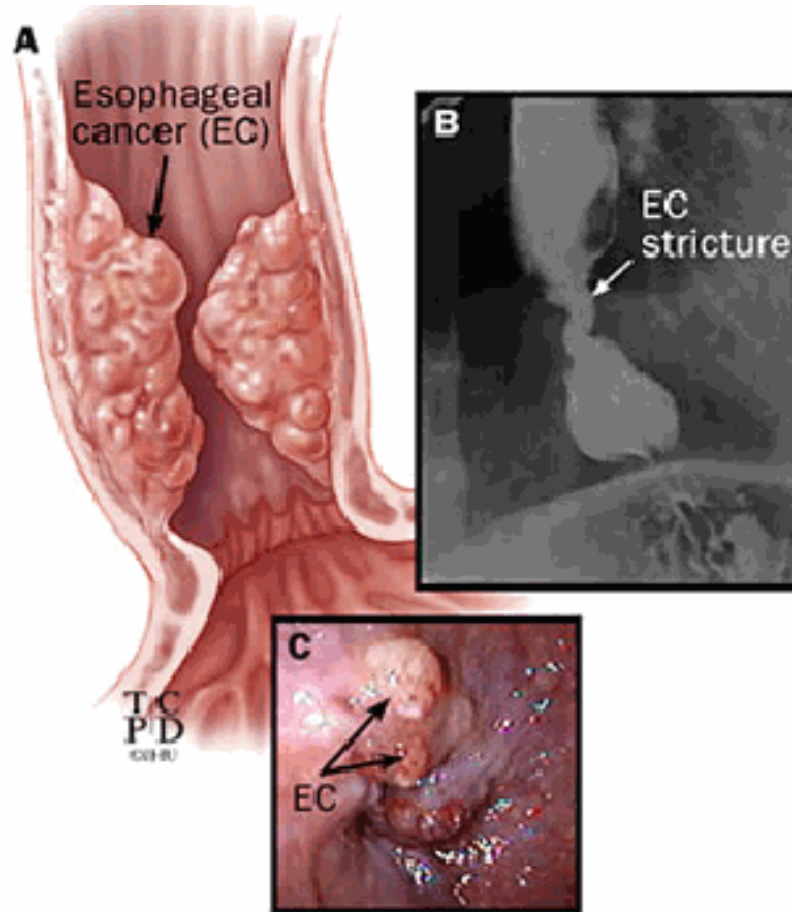


Figure 21. Esophageal cancer (A) with corresponding barium swallow x-ray (B) and endoscopic view (C).

Mouth Cancer

**Pan Masala
causes
Mouth
Cancer**





Oral Cancer Awareness Month

Prevention and Early Detection saves Life 😊

Seek Medical Attention

1. STOP TOBACCO USE

2. ORAL SELF EXAMINATION

3. DENTAL HYGEINE



1. ULCER

Ulcer which does not heal within
3 weeks

2. RED or WHITE PATCH

Persistent patch which can not be removed

3. SWELLING

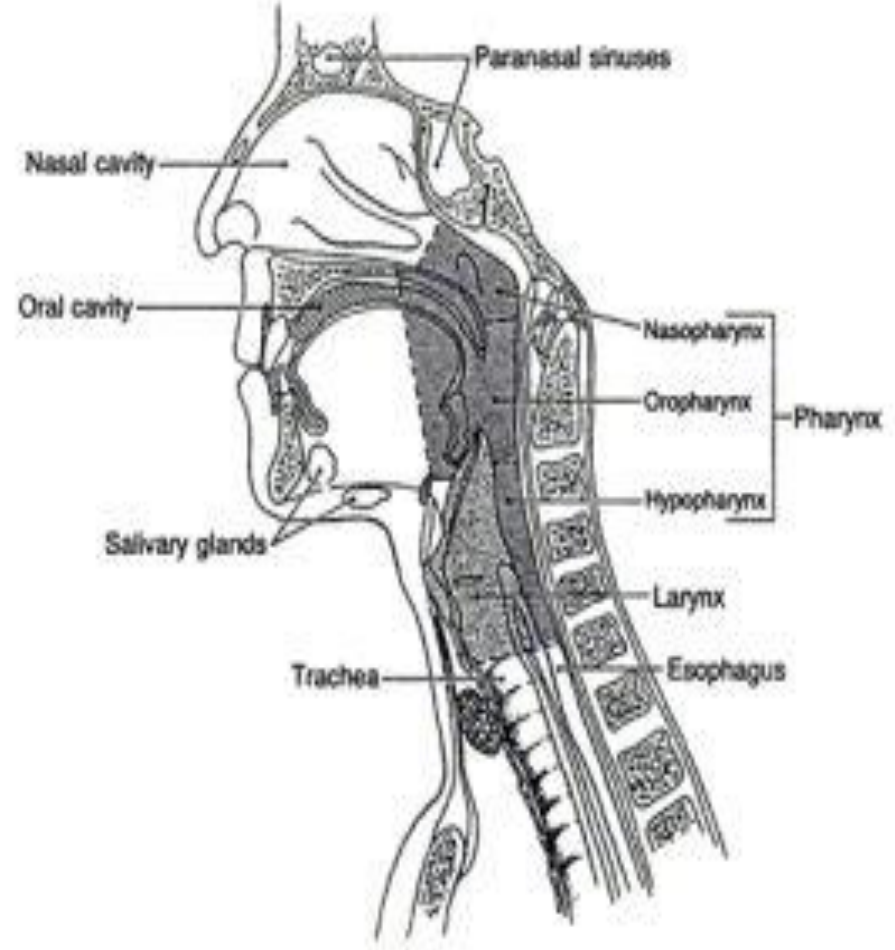
Any Bump/lump in mouth or neck



ORAL CANCER

- Head & neck cancer refers to cancers of the UADT:

- **Oral Cavity**
- **Pharynx**
- **Hypopharynx**
- **Larynx**
- **Nasopharynx**
- **Nasal cavity**
- **Paranasal sinuses**



ORAL Cancer

Oral cavity cancer includes

- Buccal Mucosa
- Tongue-anterior and Base of Tongue
- Tonsil
- Soft palate and hard palate
- Mandibular cancer (soft tissue sarcoma, osteosarcoma)

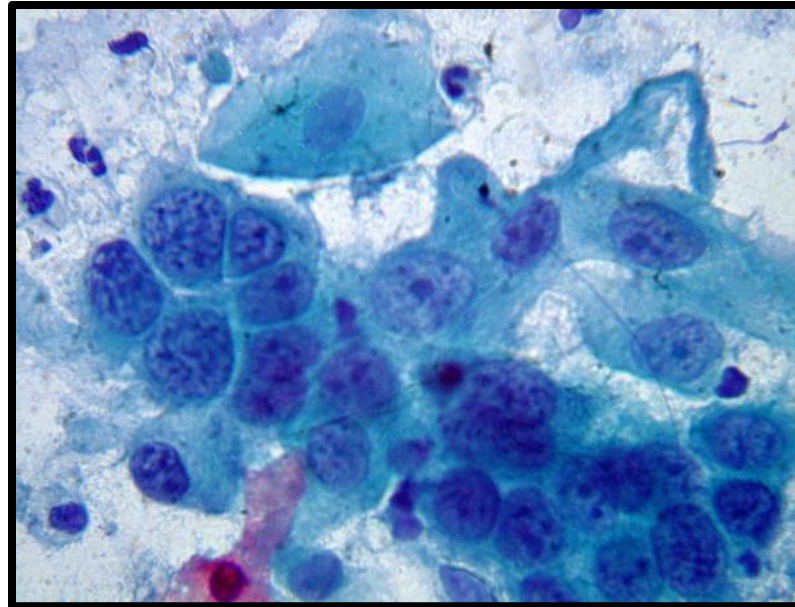


TYPES OF CANCER

- Head and neck cancer is a heterogeneous category of malignancies
- 90-93% are head and neck squamous cell carcinomas (SCCHN)
- 3-6% are nasopharyngeal carcinomas (NPC)
- 1-3% are salivary cancers



Squamous Cell Carcinoma of the Head and Neck (SCCHN)



Clinical Presentation

- Currently no proven screening method except visual examination
- Symptoms: hoarseness, dysphagia, odynophagia, ulcerations, bleeding



SYMPTOMS

Symptoms

- **Salivary glands**
 - Swelling under the chin or around the jawbone;
 - Numbness or paralysis of the muscles in the face;
 - Pain that does not go away in the face, chin, or neck.



COMMON PRESENTATION



Symptoms of Head and Neck Cancer

- **Oral cavity -**
 - A white or red patch on the gums, tongue, or lining of the mouth;
 - A swelling of the jaw that causes dentures to fit poorly or become uncomfortable;
 - Unusual bleeding or pain in the mouth.



Treatment Option

- Surgical Excision
- Chemotherapy
- Concurrent Chemo-radiotherapy
- Radiotherapy alone as radical treatment in case of ca larynx , Tonsil ,Soft palate



TREATMENT OPTION

- 1st line treatment modalities:
 - Early stage: surgery (preferred) or radiation
 - Advanced stage: typically surgery + chemoradiation
 - Currently Cisplatin is treatment of choice, alone or in combination
 - EGFR inhibitors are in trials (cetuximab)



HPV -ASSOCIATION

- Primarily stems from action of E6 & E7 viral oncoproteins
 - E6 binds and inactivates p53 tumor suppressor
 - Loss of p53 mediated apoptosis
 - E7 binds and inactivates pRb tumor suppressor
 - Loss of G1-S phase checkpoint
- p16 overexpression is a surrogate marker for HPV-mediated SCCHN



Prognostic Indicators

- TNM stage (higher = worse)
- Cervical nodal involvement is one of the strongest predictors (50% reduction in survival)
 - 2/3 SCCHN patients present with cervical mets
 - 10% present with distant mets
 - Extracapsular spread (ECS) further reduces survival
- Other predictors
 - Nodal burden
 - Perineural invasion
 - Histologic grade
 - Extent of necrosis
 - Positive tumor margins



Dental care

Radiation treatment- head and neck can increase chances of getting cavities. This is due to dry mouth.

Mouth care- is important part of your treatment. Before starting radiation, get a complete check-up with your dentist. Removal of loose teeth, sharp teeth, any dental care required before RT.(as after RT >1 years no dental procedure is recommended.



Dental care

- Clean your teeth and gums with a very soft brush(baby brush) after meals and at least one other time each day.
- Use fluoride toothpaste that contains no abrasives.
- Gargle
- Rinse your mouth well with cool water or a baking soda solution after you brush. (Use 1 teaspoon of baking soda in 1 quart of water.)



Nutritional Support

Before starting radiation during radiation and after radiation is the most challenging part to handle.

Sometimes RT tube feeding is required in patients receiving Concurrent chemo radiation.

High protein diet and proper supplementation to be taken cared. Glutamine supplement.



Linac-Machine

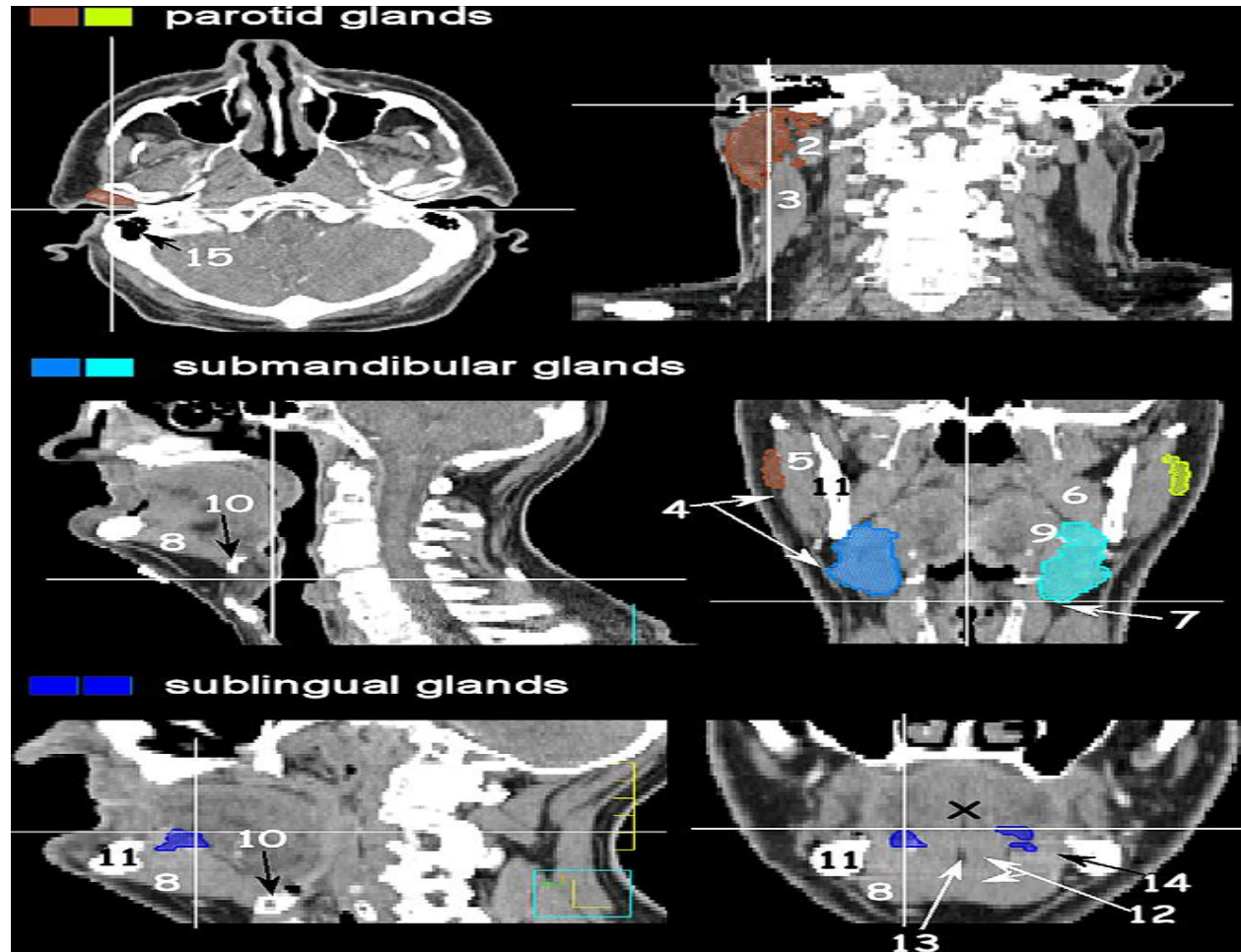


Immobilization



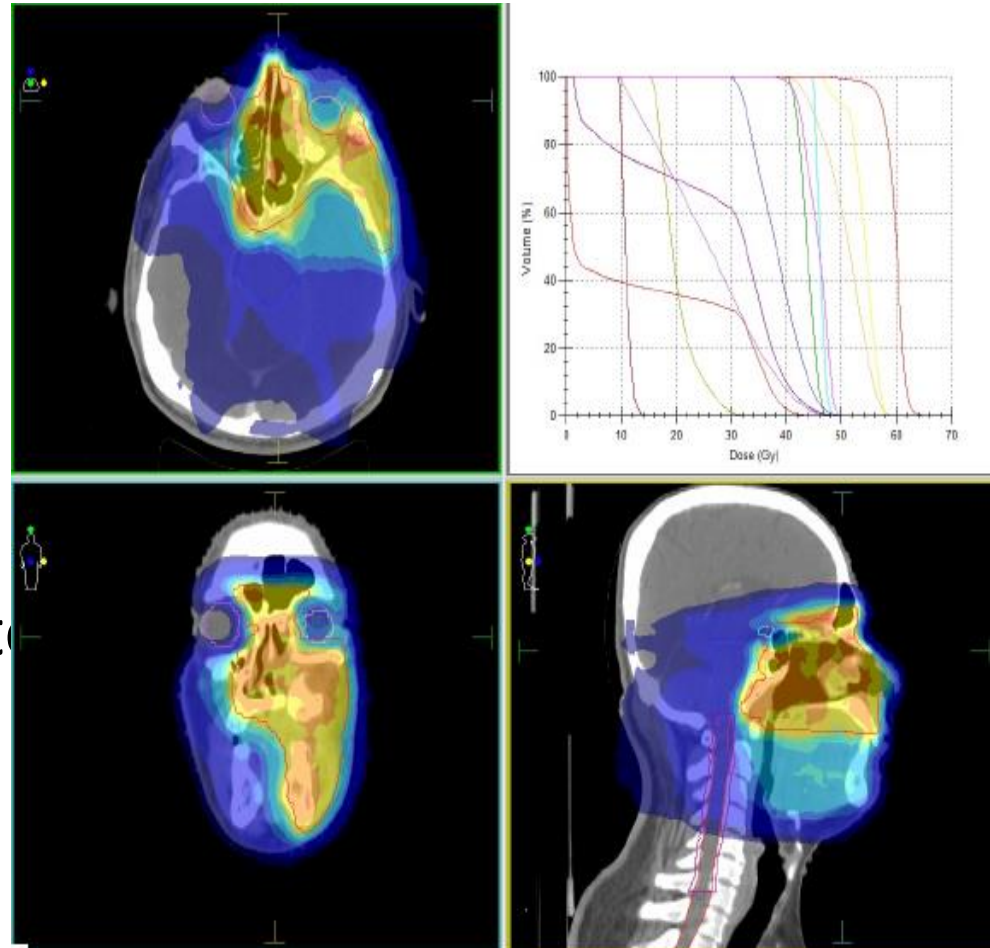
- During treatment immobilization cast become loose due to weight loss and loss of buccal pad of fat
- Re-moulding and Re- CT is done to minimizing any set-up error.

3DCRT

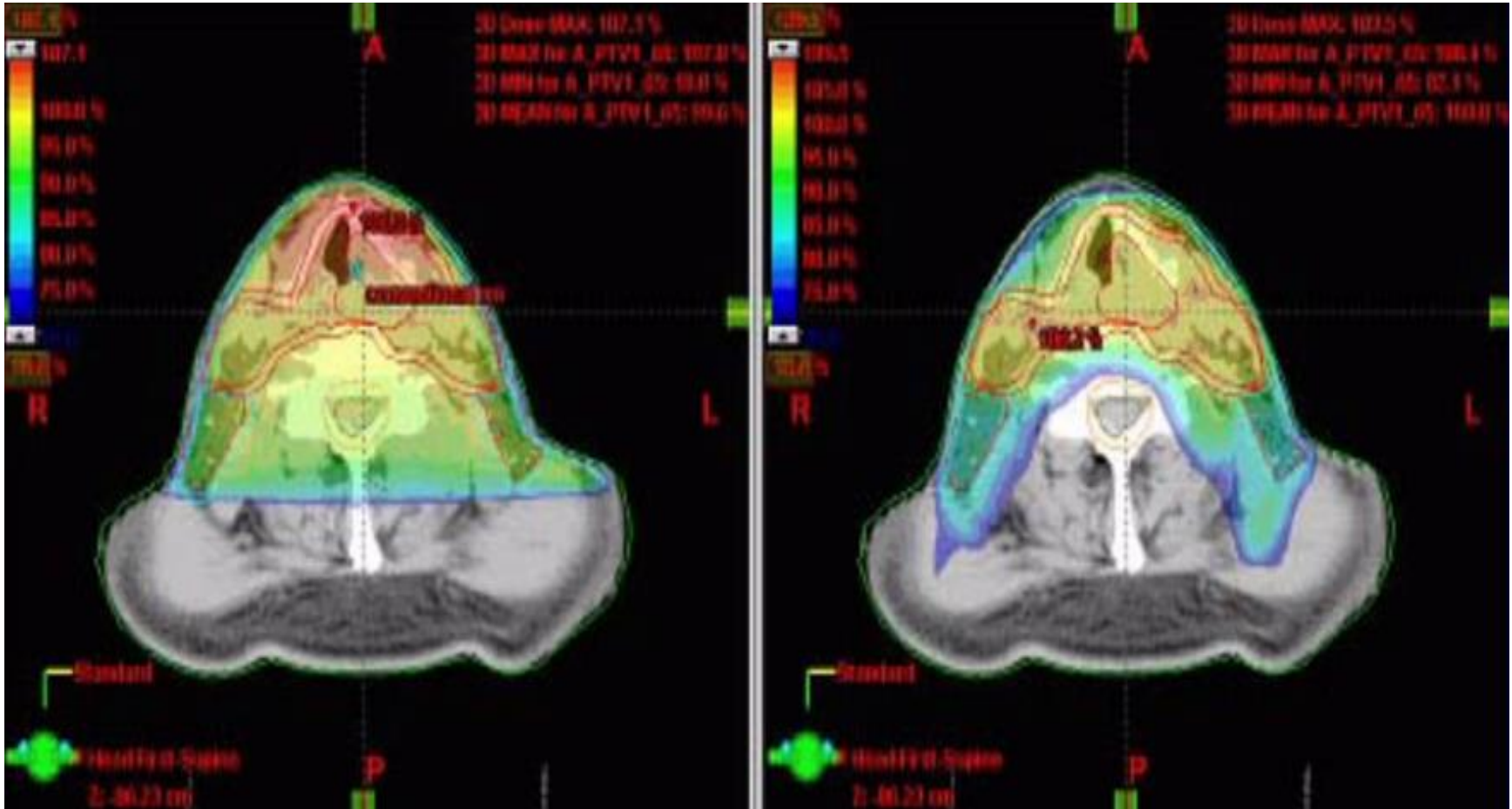


IMRT

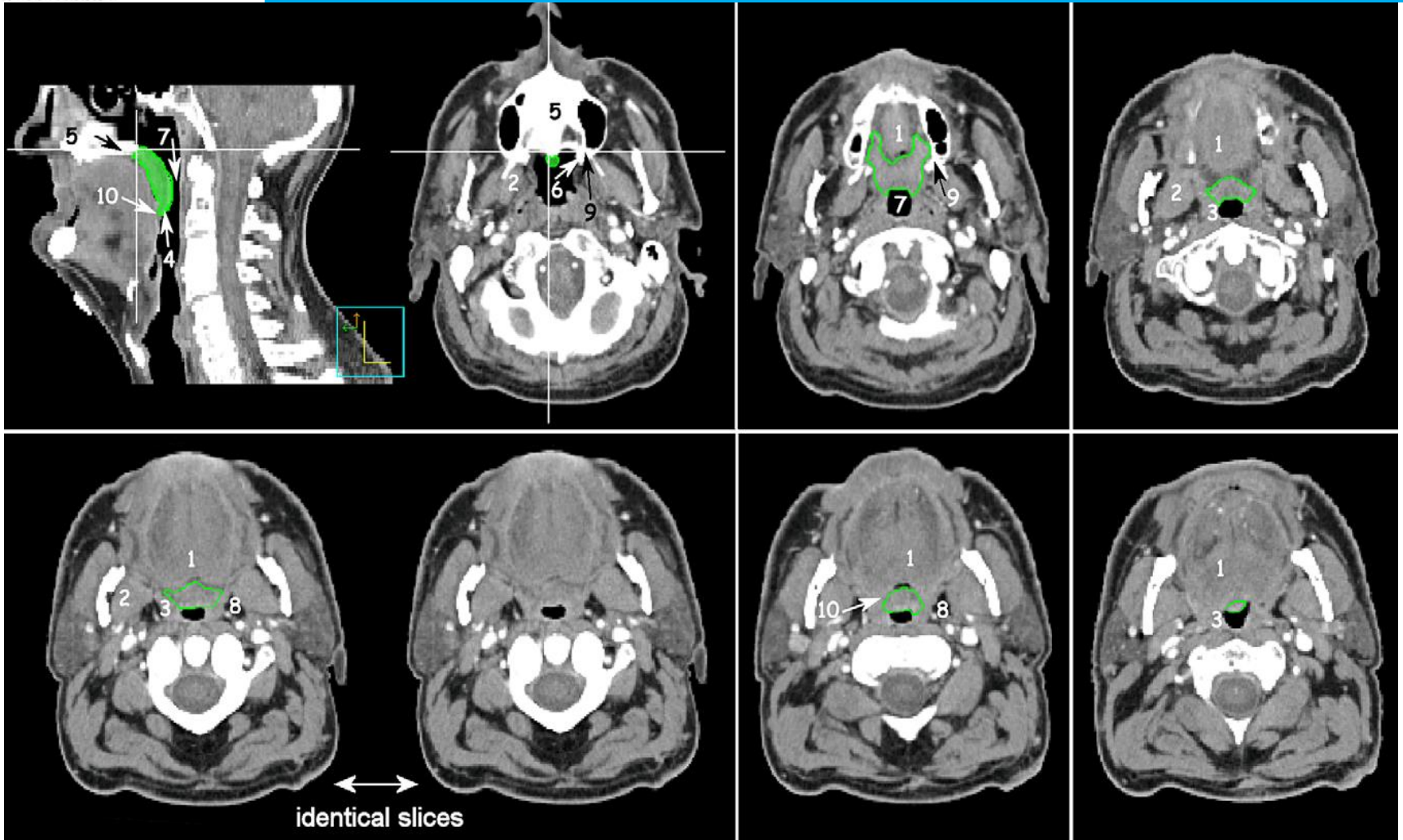
- Improve long term function post-radiotherapy
 - Xerostomia
 - Osteoradionecrosis
 - PEG dependency rate
 - Hearing loss



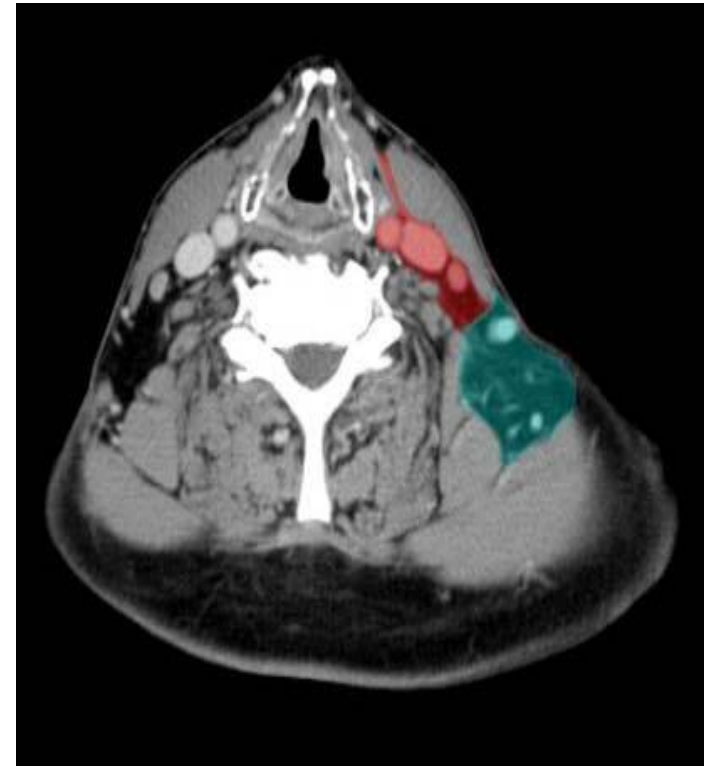
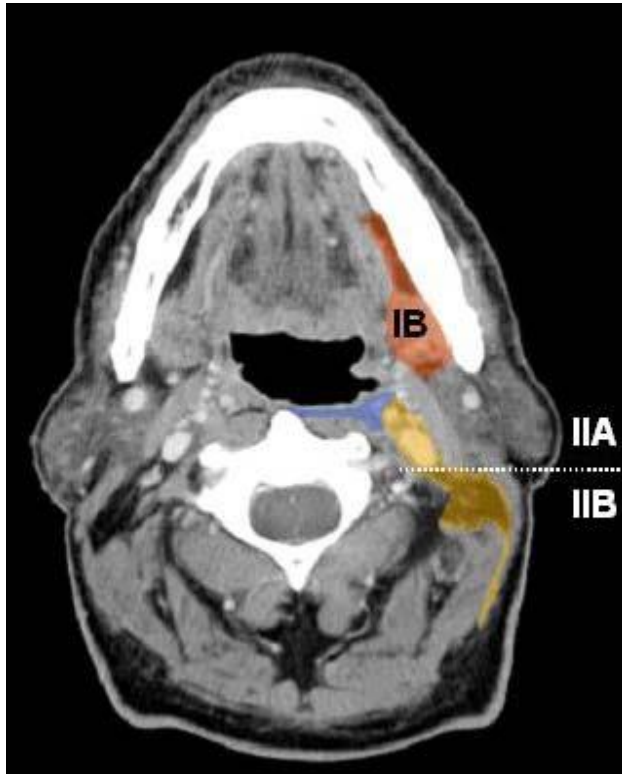
Intensity Modulated Radiotherapy



CBCT- Evaluations



LN Delineation



PET-CT



- **PET-CT IN PLANNING**

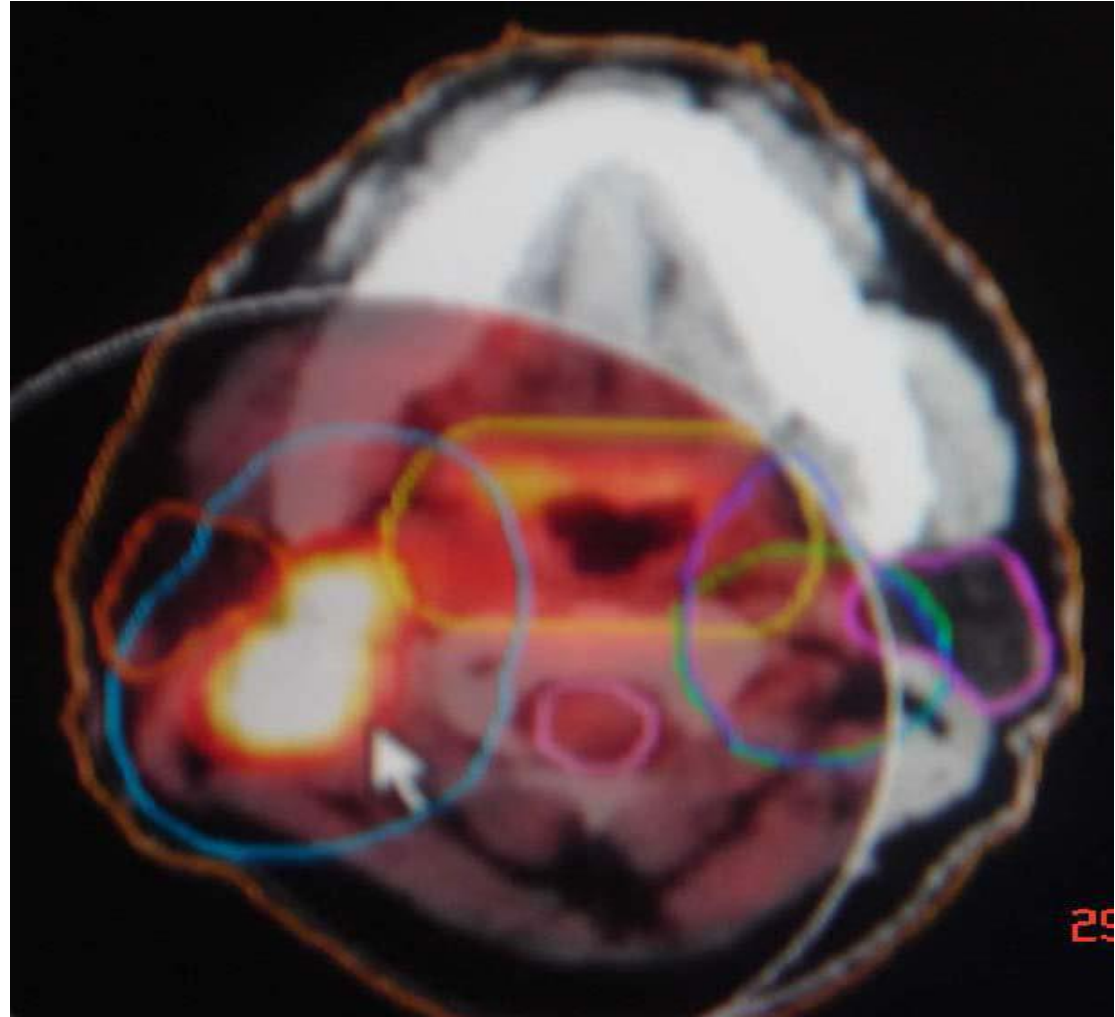
**Evaluation of ^{18}F -FDG-PET/CT for
adaptive and dose escalated
radiotherapy in Oropharyngeal
squamous cell cancer**



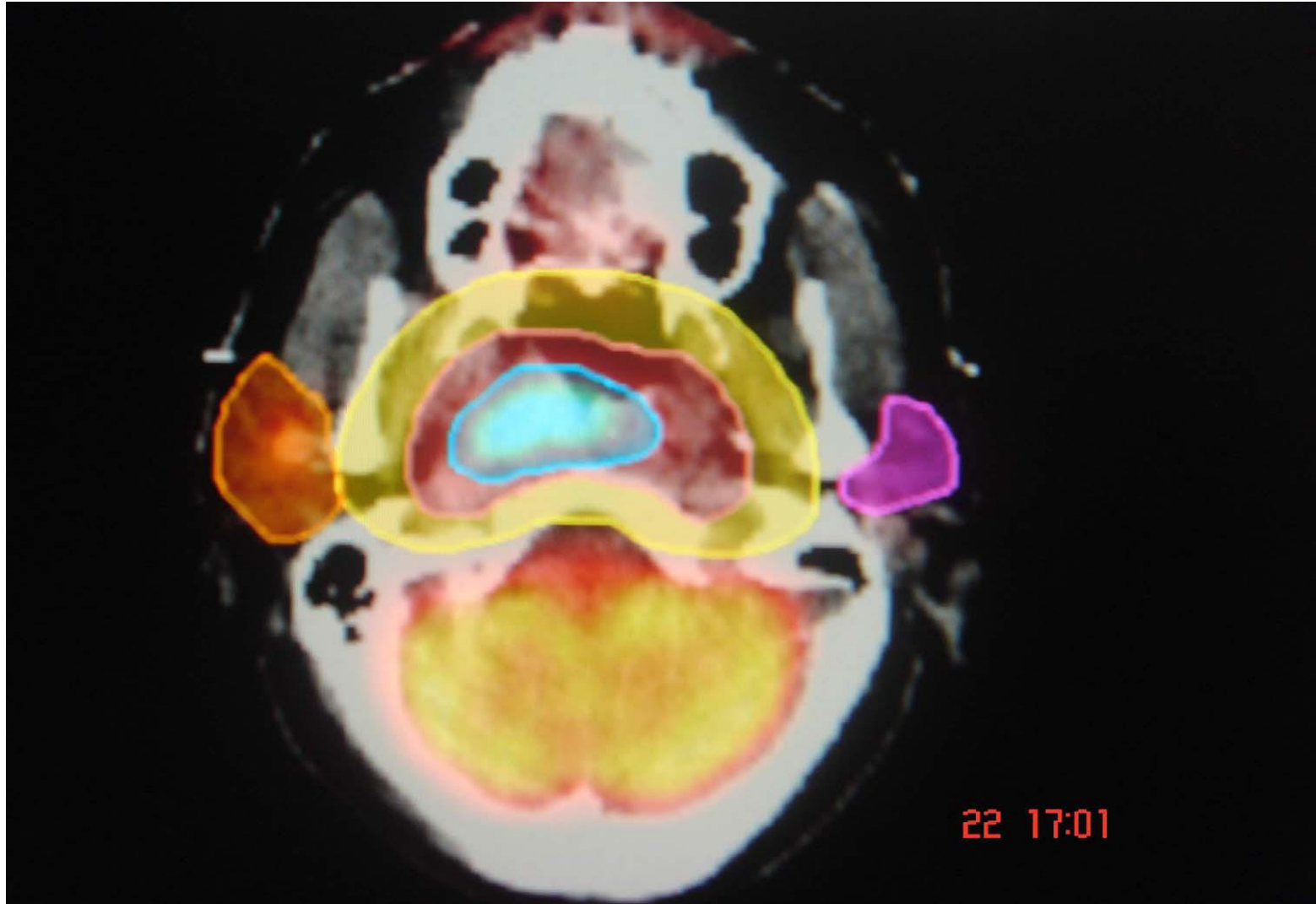
PET-CT

- Can a PET scan done early radiotherapy identify radioresistant areas of tumour to dose escalate in the second part of treatment?
- Recruiting patients with Stage III/IV Oropharyngeal cancer undergoing chemo-RT with Cisplatin.
- Pre-treatment PET scan immobilised in RT shell.
- Interim PET scan and planning CT scan between fractions 8 – 10.





PET-CT Based Planning



THANK YOU!

