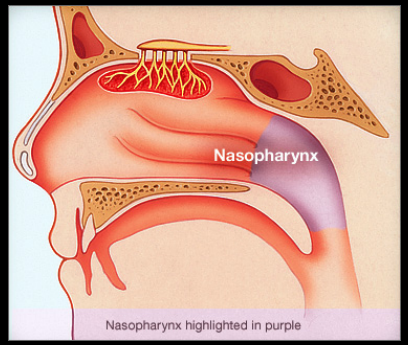
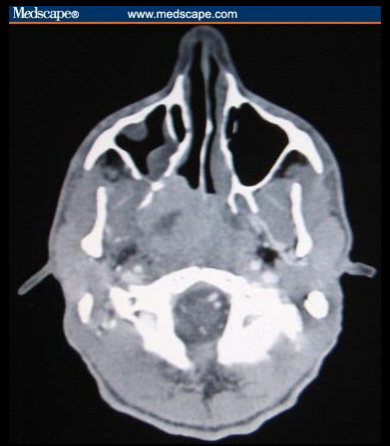
Nasopharyngeal Carcinoma FPON CME Webcast

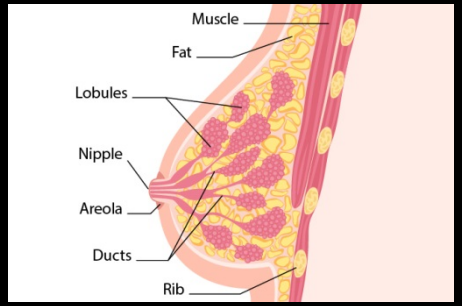


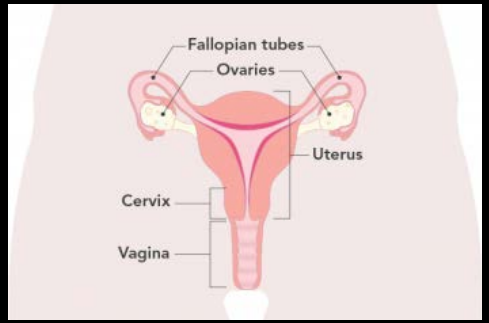
November 21, 2019

Dr. Sarah Hamilton
Radiation Oncologist – Vancouver Centre



UBC
Medicine





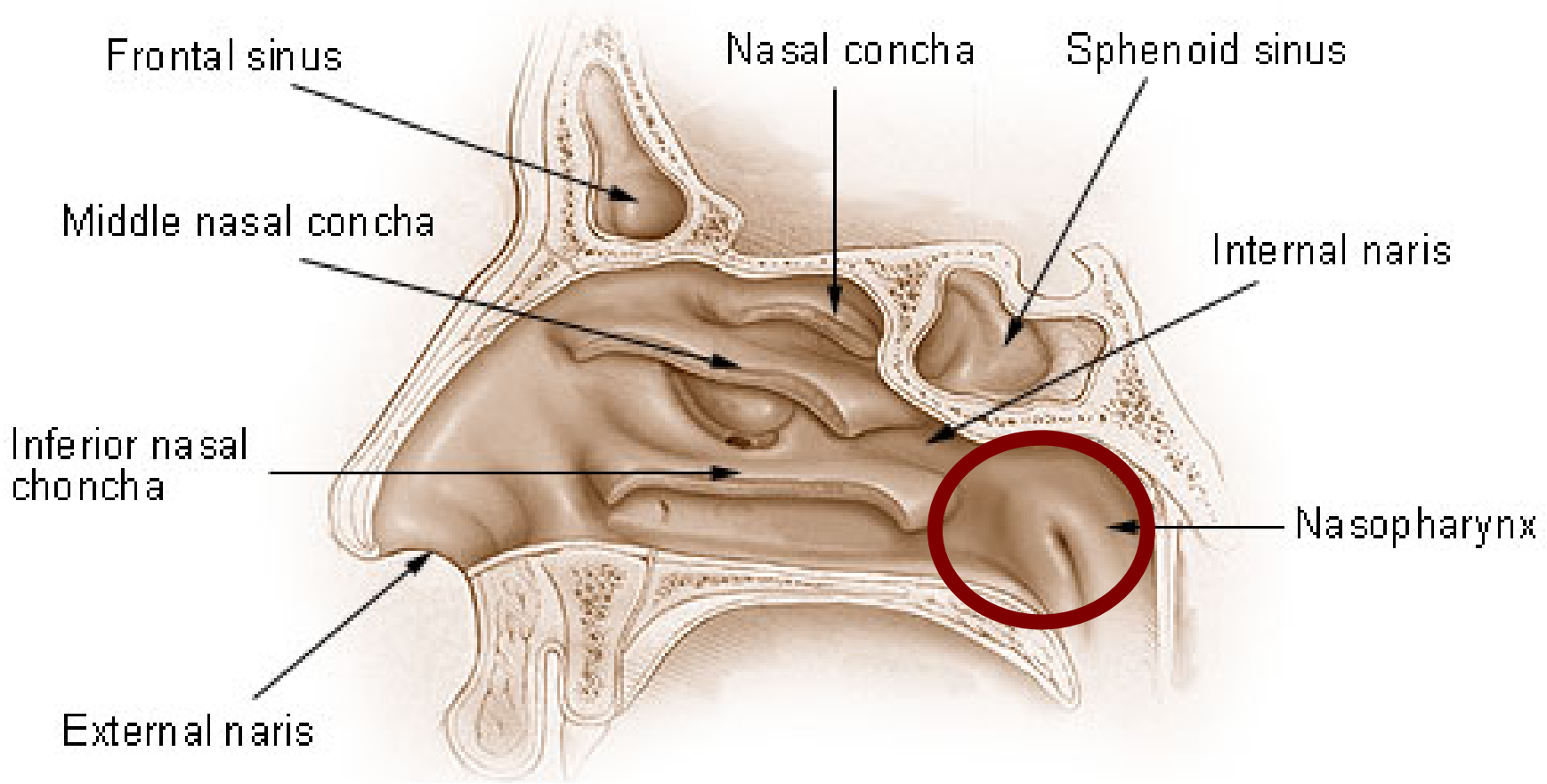
Disclosures

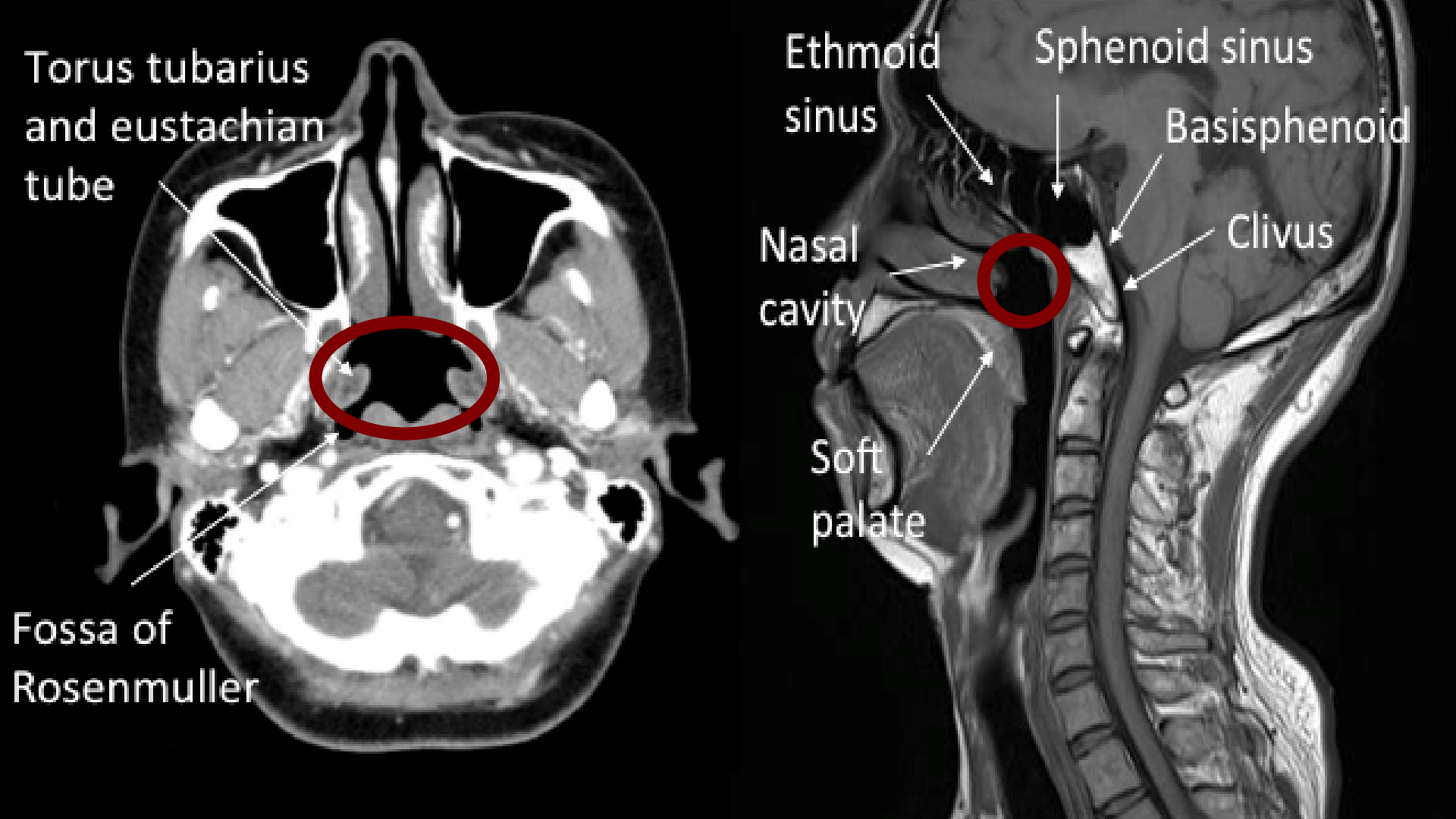
- None

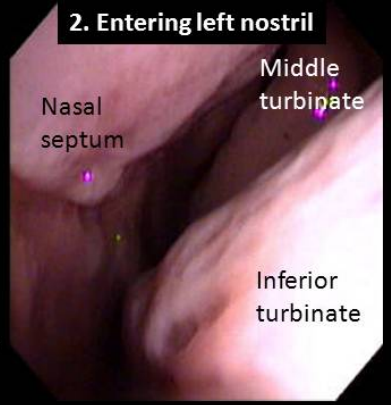
Clinical Case

- 48 year old female
- New onset of epistaxis
- Right ear plugging X 3 months
- Otherwise feels quite well

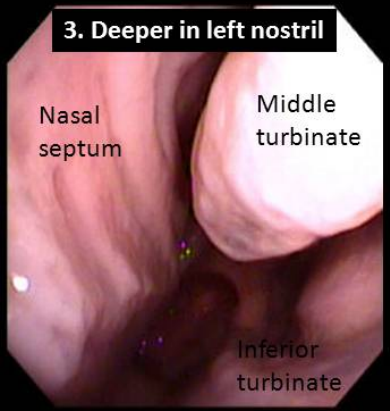
Nose and Nasal Cavities

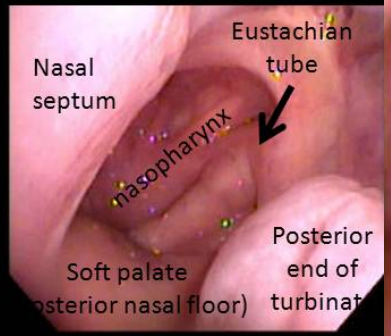


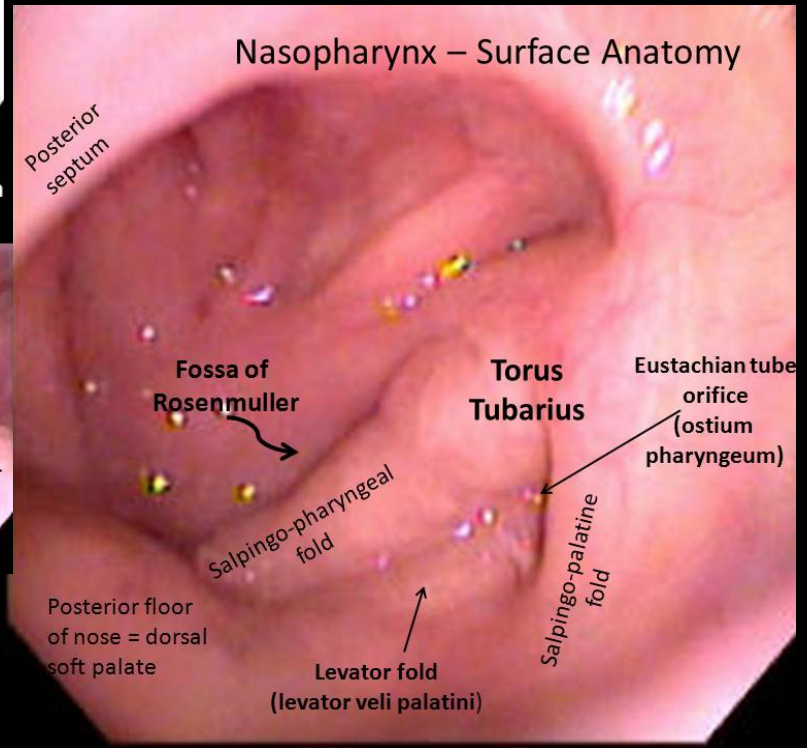

Torus tubarius and eustachian tube
Fossa of Rosenmuller
Ethmoid sinus
Sphenoid sinus
Basisphenoid
Clivus
Nasal cavity
Soft palate



View with flexible rhinoscopy and nasopharyngoscoy with advancing scope through the nose to the nasopharynx



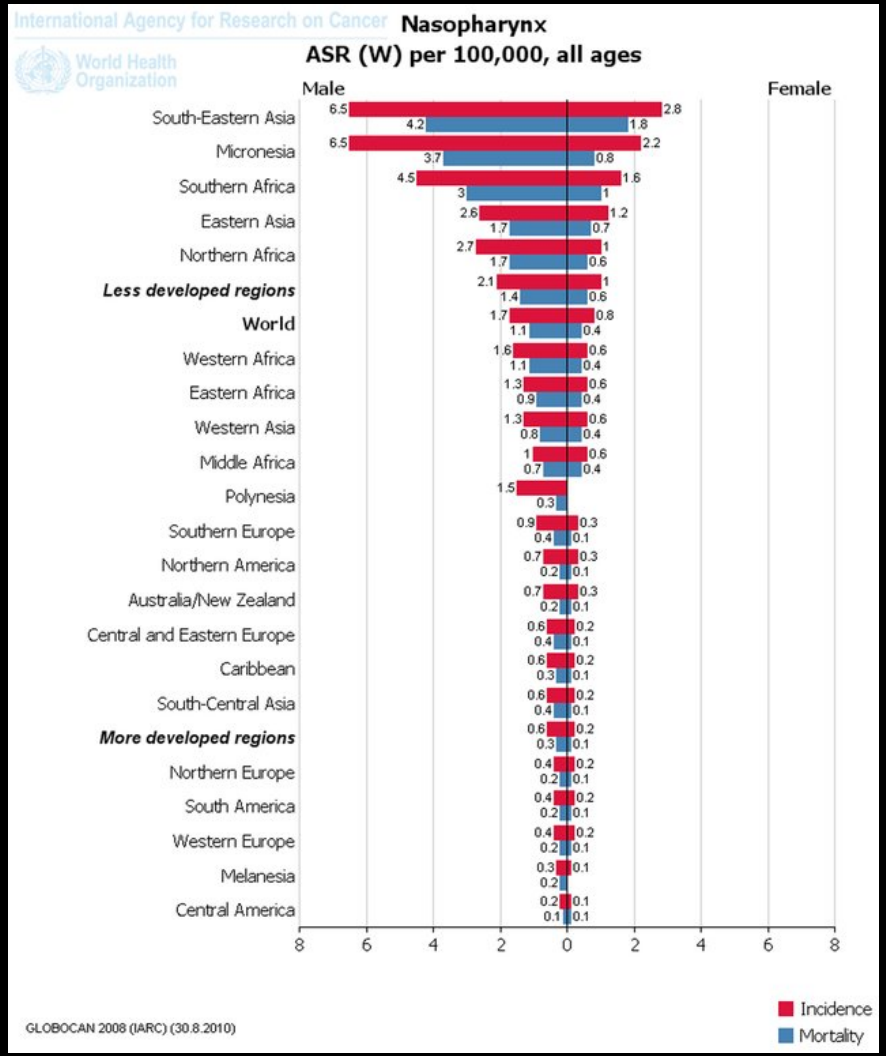




Epidemiology

- Incidence in USA: 0.2 to 0.5 per 100,000

- Incidence in Hong Kong: 25-50 per 100,000



Common in Asia, North African countries

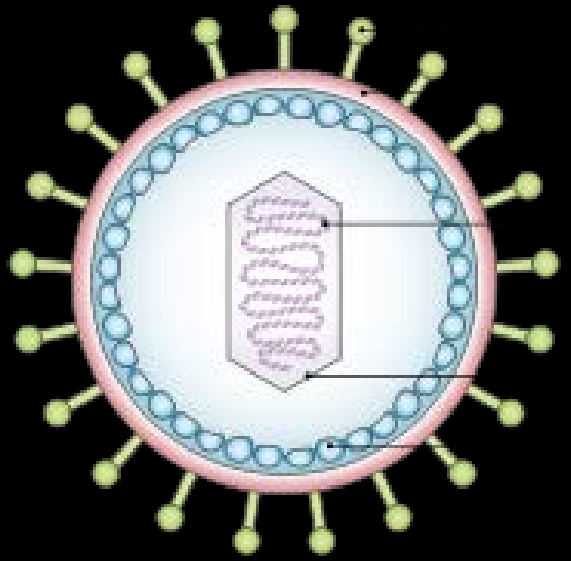
Also more common in Aboriginal patients

Immigration from high risk area to low risk area retains increase risk, but decreased with subsequent generations

In B.C. approx. 40-50 new cases / year

Of these, approx. 75% Asian ethnicity

Risk Factors



- Epstein Barr Virus (EBV)
  - Persistent latent infection in nasopharynx
  - Regardless of geography
  - EBV DNA + EBV gene expression in NPC tumour cells

- Smoking
- Alcohol
- Male : female (3 : 1)
- Two age peaks: 15-25 years (endemic countries) and 50-60 years
- Average age younger relative to other H&N cancers
- Some familial clustering

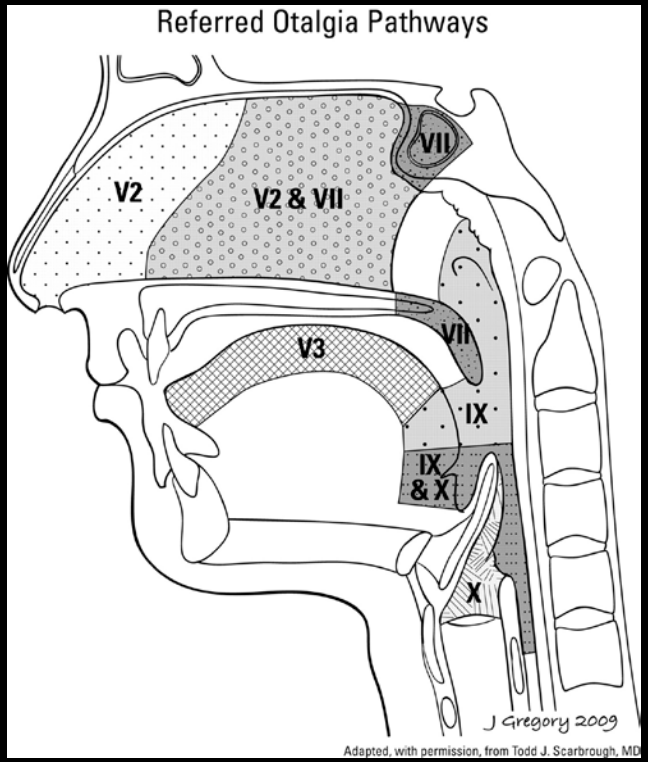
Risk Factors

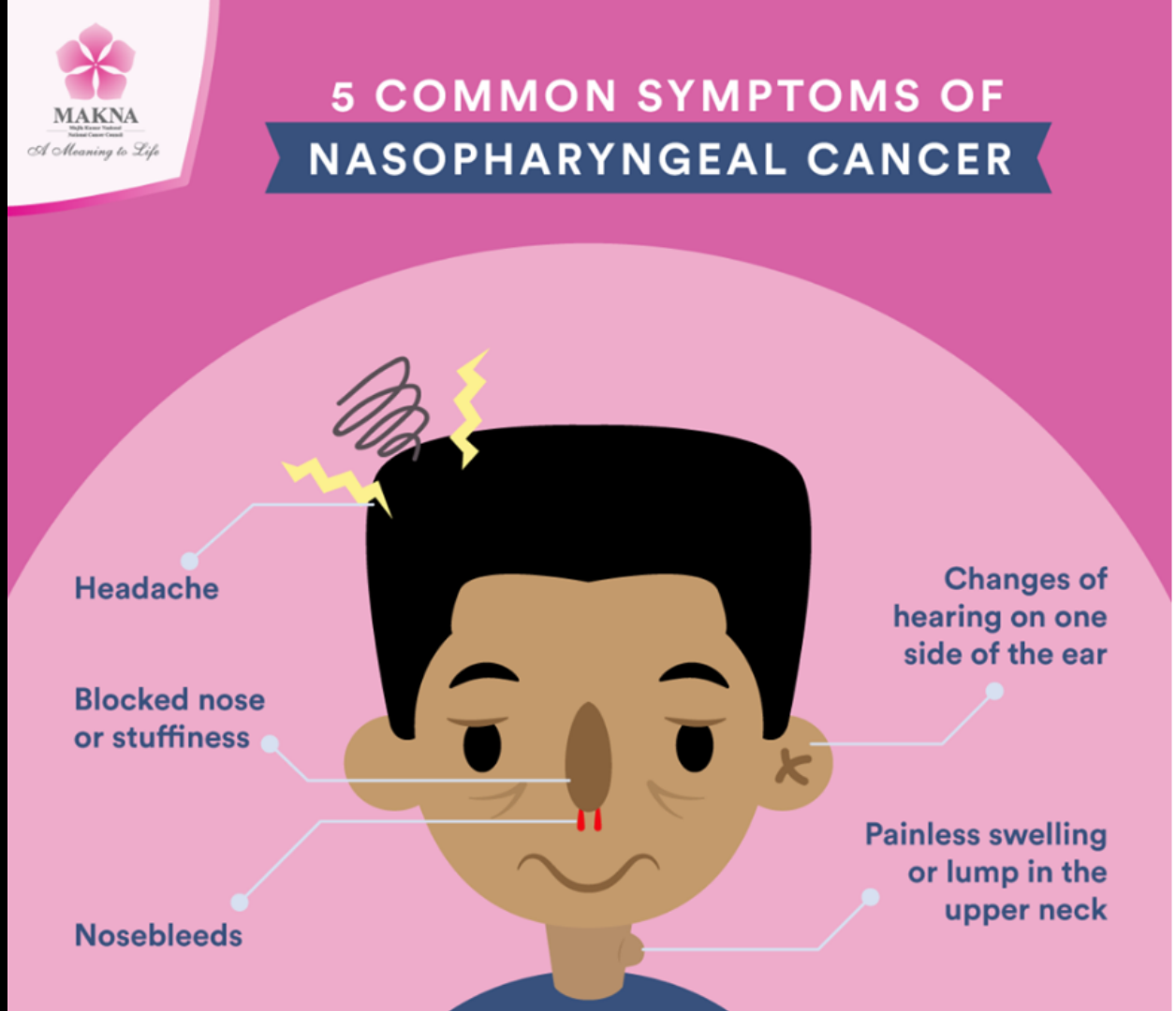
- Salted fish intake
  - Nitrosamines
  - Especially early childhood exposure
- Preserved or fermented foods
  - Nitrosamines
- Rancid butter / sheep fat
  - Butyric acid

Clinical Presentation - Common

- Can be difficult to detect early
- Symptoms non-specific

- Most common local symptoms:
  - PERSISTENT nasal obstruction / epistaxis
  - Serous otitis media / otalgia
  - New onset tinnitus





MAKNA - Majlis Kanser Nasional
· September 19, 2017 · Edited ·

Today, let's take a look at Nasopharyngeal cancer.

Nasopharyngeal cancer (NPC) is a type of head and neck cancer whereby cancer stems from the part of the throat that is at back of the nose. In Malaysia, Nasopharyngeal cancer is the 4th most common cancer among Malaysians.

The main risk factor for the cancer is caused by the exposure to the Epstein-Barr virus (EBV), though everyone would be infected by the EBV virus once in our lifetime, our body's immune system usually would get rid of the virus. The EBV virus rarely develops into Nasopharyngeal cancer.

Common symptoms of NPC are as in the visual below.

Treatment for NPC varies according to the cancer stage and also your general health. If the cancer has spread to areas around the nasopharynx, a combination of radiotherapy and chemotherapy - chemoradiation is used.

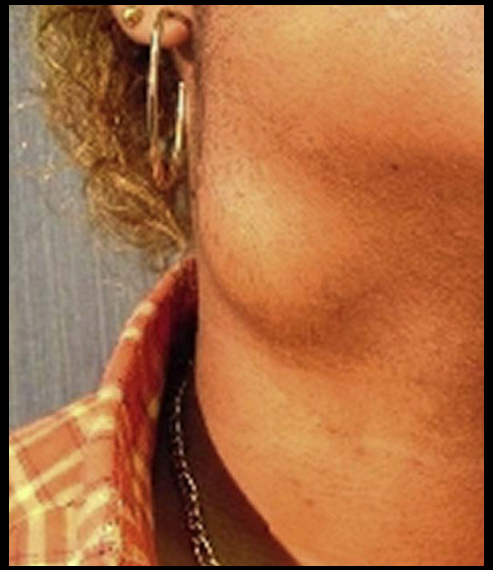
You can read more on NPC at http://www.macmillan.org.uk/information-and-support/head-and-neck-cancers/nasopharyngeal-cancer#283530

#MAKNAcancer #MAKNAcares #nasopharyngealcancer #NPC #cancer #nose #neck #back #throat #health

223 4 Comments 121 Shares

Clinical Presentation - Common

- Most common regional symptom: painless neck mass
- 80-90% lymph nodes at diagnosis
- 50% of the time are bilateral

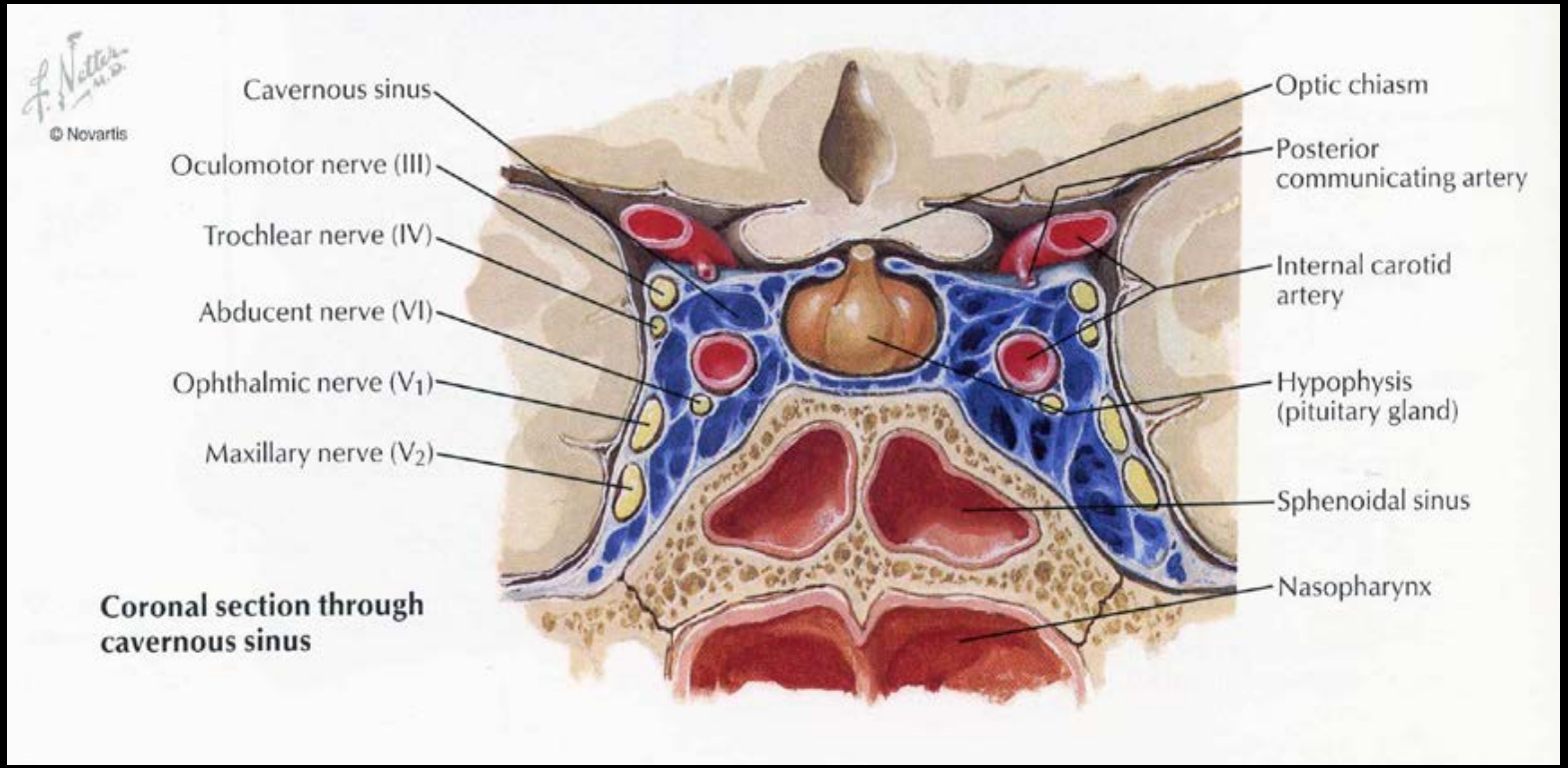


Clinical Presentation - Headache

- Symptoms of more advanced disease

- Persistent, worsening headache (clival invasion)

Clinical Presentation – CN involvement



Clinical Presentation - Dermatomyositis

Clinical Presentation - Orbit

- Proptosis
- Diploplia
- Vision loss

Back to our Clinical Case

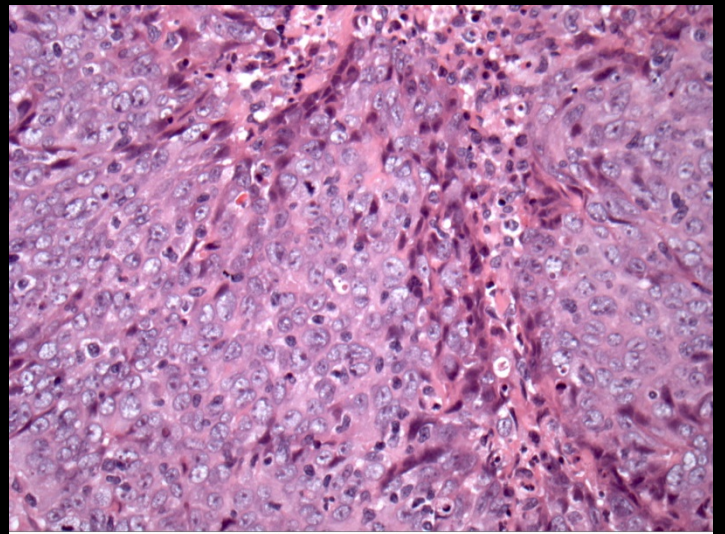
- Risk factors:
  - Asian ethnicity, moved from HK in 2005
  - Non-smoker
  - Moderate salted fish intake
- Your exam is otherwise normal but you notice a small enlarged right level 2 lymph node

Pathology

- Who type 1:
  - Keratinizing squamous cell carcinoma
  - Alcohol, tobacco use
  - Worse survival
  - 25% of cases in USA

- Who type 2:
  - Non-keratinizing differentiated carcinoma
  - EBV associated (EBER+ staining)
  - 30-40% of cases, 12% of cases in US

- Who type 3:
  - Non-keratinizing undifferentiated carcinoma
  - EBV associated (EBER+ staining)
  - 40-50% of cases, 99% of cases in Asia



Nasopharyngeal carcinoma (NPC) showing syncytial growth with oval or round vesicular nuclei and prominent nucleoli; there is prominent inflammatory response in the adjacent stroma

Workup

- Neck mass
  - Send for U/S +/- FNA
  - CT neck/chest

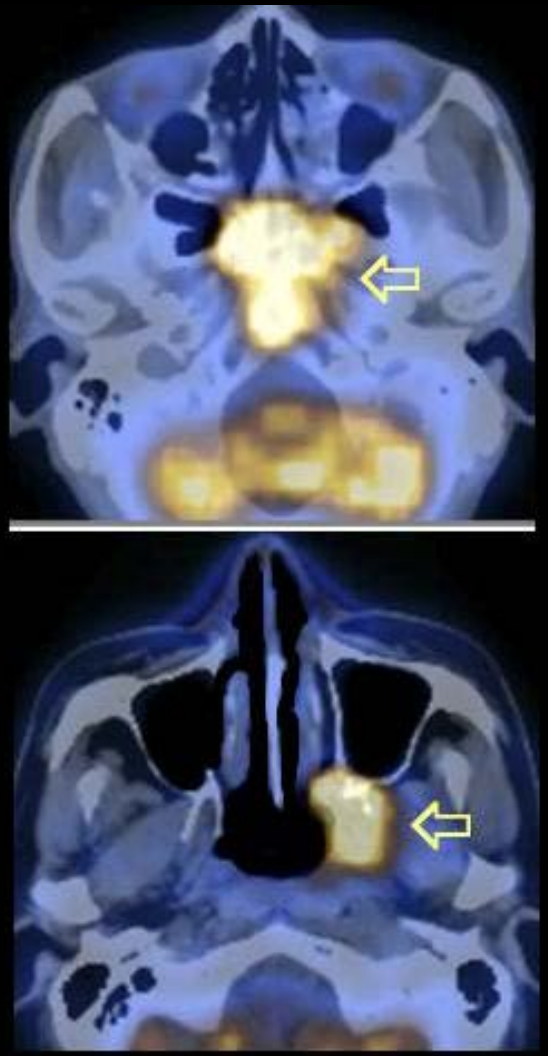
- Referral to ENT
  - Direct nasopharyngoscopy + biopsy
  - Exam under anesthesia may be needed

Workup

Once biopsy confirmed malignancy, referral BC Cancer

Imaging:

- MRI nasopharynx
- PET scan (or CT nCAP)
- PET sensitive for distant mets
- 10% distant mets at presentation



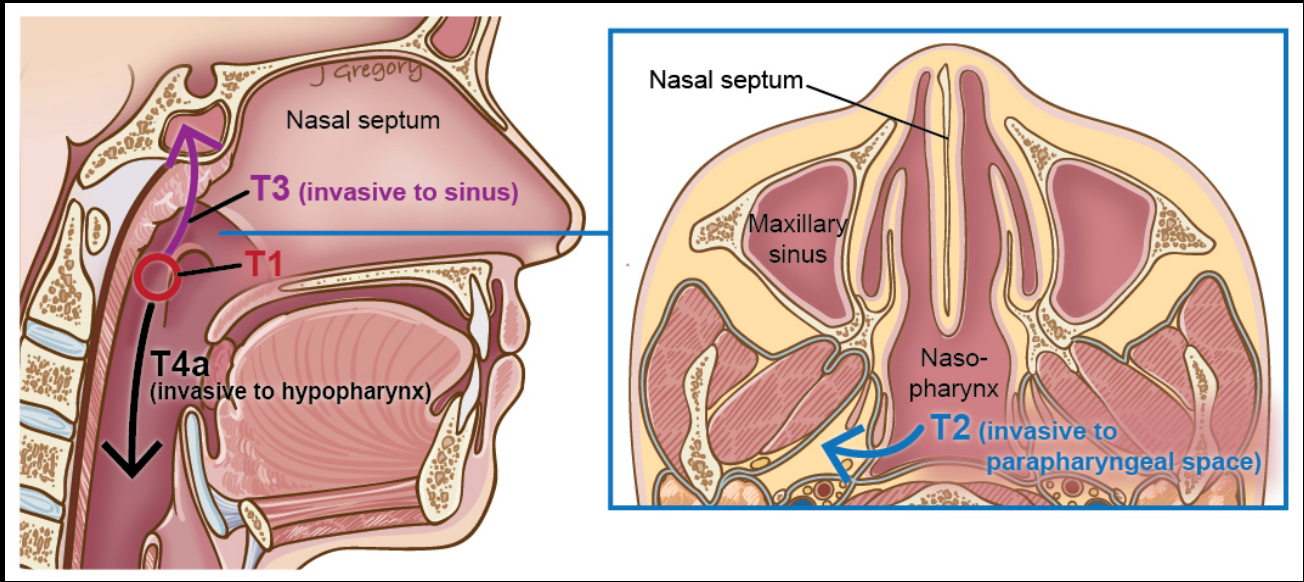
Back to our Clinical Case

- You arrange U/S + FNA urgently
  - Pathology shows non-keratinizing undifferentiated SCC, EBER+

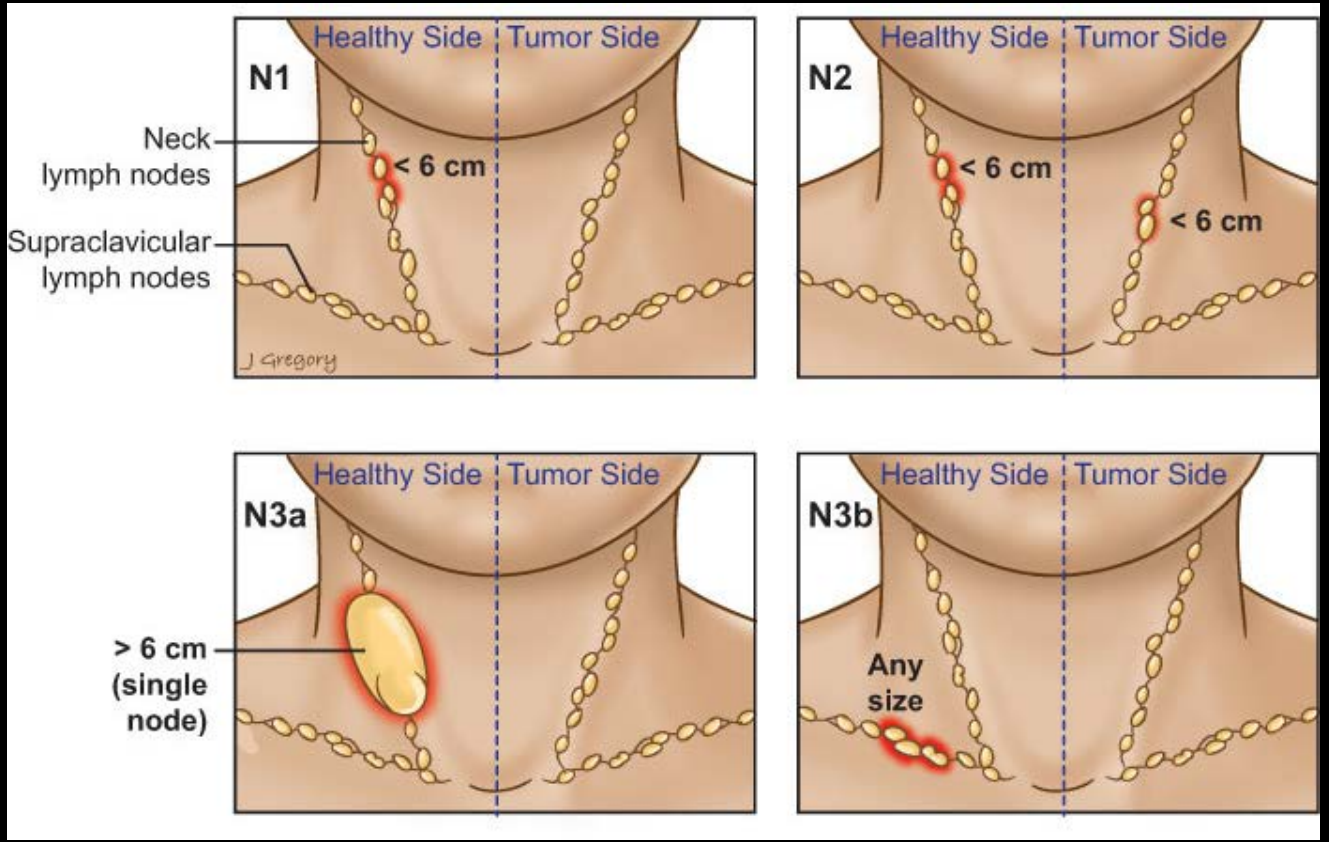
- You arrange urgent ENT referral + referral to BC Cancer

T-Stage

T1: nasopharynx, oropharynx or nasal cavity
T2: parapharyngeal extension
T3: skull base and/or paranasal sinuses
T4: intracranial, cranial nerves, hypopharynx, orbit, infratemporal fossa, masticator space



N-Stage


N1
Healthy Side
Tumor Side
Neck lymph nodes
< 6 cm
Supraclavicular lymph nodes
J Gregory
N2
Healthy Side
Tumor Side
< 6 cm
< 6 cm
N3a
Healthy Side
Tumor Side
> 6 cm (single node)
N3b
Healthy Side
Tumor Side
Any size

Staging

- Stage I: T1
- Stage II: T2, N1

- Stage III: T3, N2
- Stage IVA: T4
- Stage IVB: N3
- Stage IVC: metastatic disease

Back to our Clinical Case

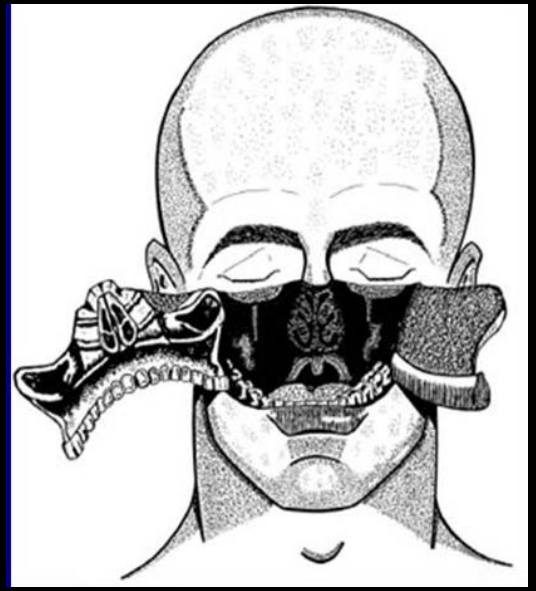
- ENT performs endoscopy confirming a 2 cm right nasopharyngeal mass, right level 2 LN

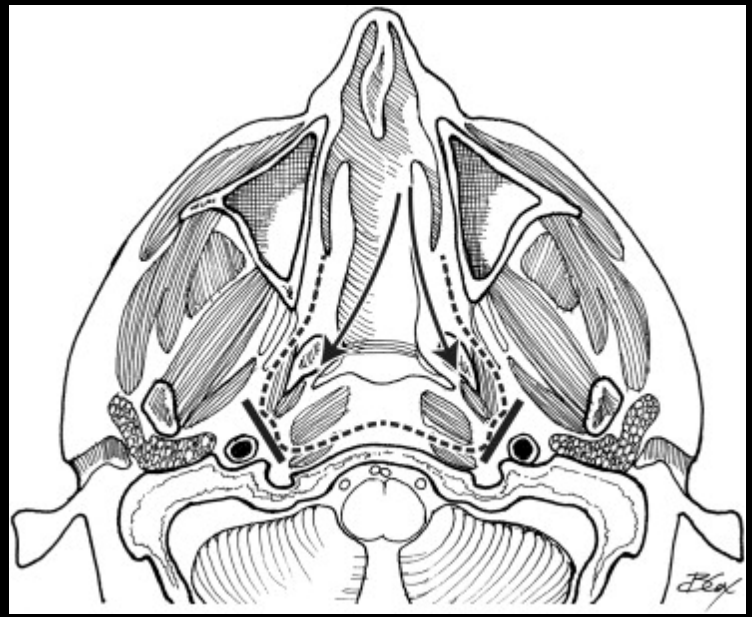
- Orders MRI naso/neck, confirms referral to BC Cancer

- Seen by Rad Onc and PET scan ordered
- Confirms a T2 N1 M0 nasopharyngeal carcinoma

Primary Treatment

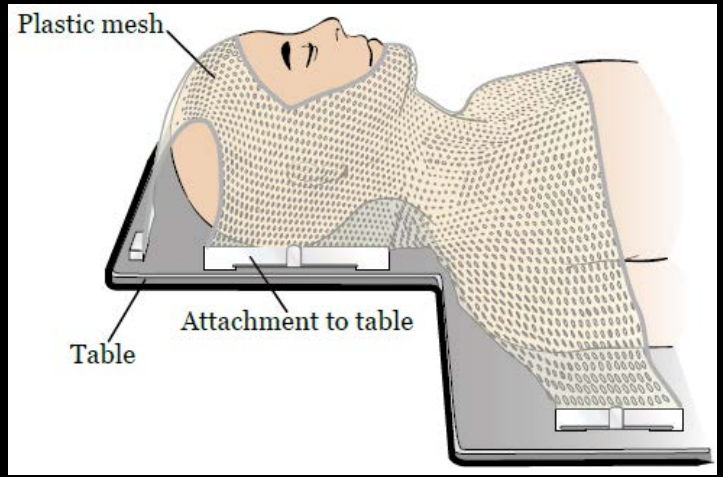
- Surgery?
  - NOT a primary treatment
  - Nasopharynx is close to critical neurovascular structures
  - Used for salvage therapy only





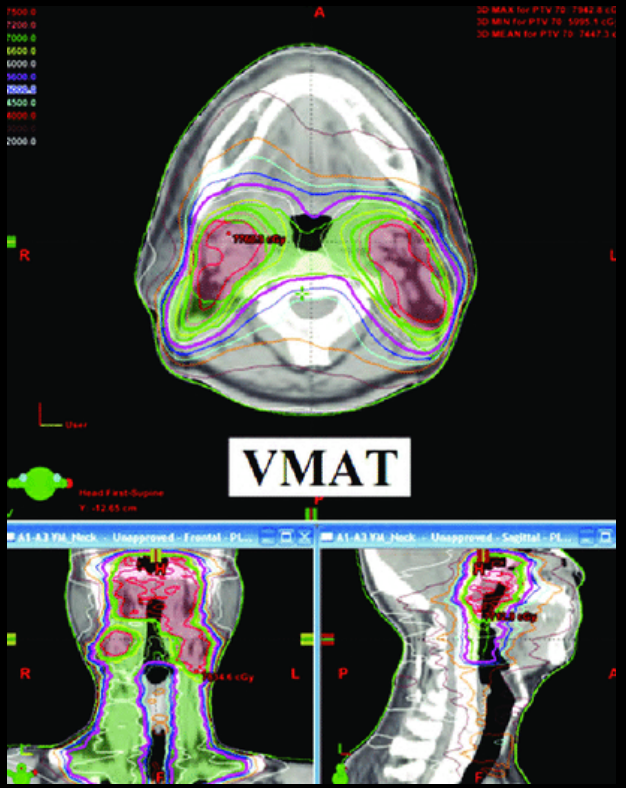
Radiation Treatment

- Radiation therapy is primary treatment modality
- Daily treatment, 7 weeks, 35 fractions
- 70 Gy
- Monday to Friday, 15-20 min/day
- Treatment preparation:
  - Dentistry consultation
    - May require extractions
  - Nutrition consultation
  - SLP consultation
  - Med onc consultation
  - Treatment planning (CT simulation scan)
  - Mask creation for immobilization



- Generally treatment starts 3-4 weeks after consultation

Radiation Treatment



Concurrent Chemotherapy

- Chemotherapy is given concurrently during 7 weeks of radiotherapy as a radiosensitizer
- Weekly cisplatin 40mg/m2
- For all patients with >Stage 1 disease

- Side effects:
  - Usually well tolerated
  - No alopecia
  - Nausea, vomiting
  - Tinnitus
  - Nephrotoxicity
  - Neurotoxicity

Acute Toxicity

- Fatigue
- Alopecia in field (base of skull)
- Radiation dermatitis
- Changes to hearing (non-inflammatory serous otitis)

Acute Toxicity

- Mucositis
- Xerostomia
- Thickened oral secretions
- Pain requiring opioids
- Dysgeusia
- Odynophagia especially for solids
- Voice hoarseness
- Loss of appetite
- Weight loss
- 10-20% need for a G-tube

Back to our Clinical Case

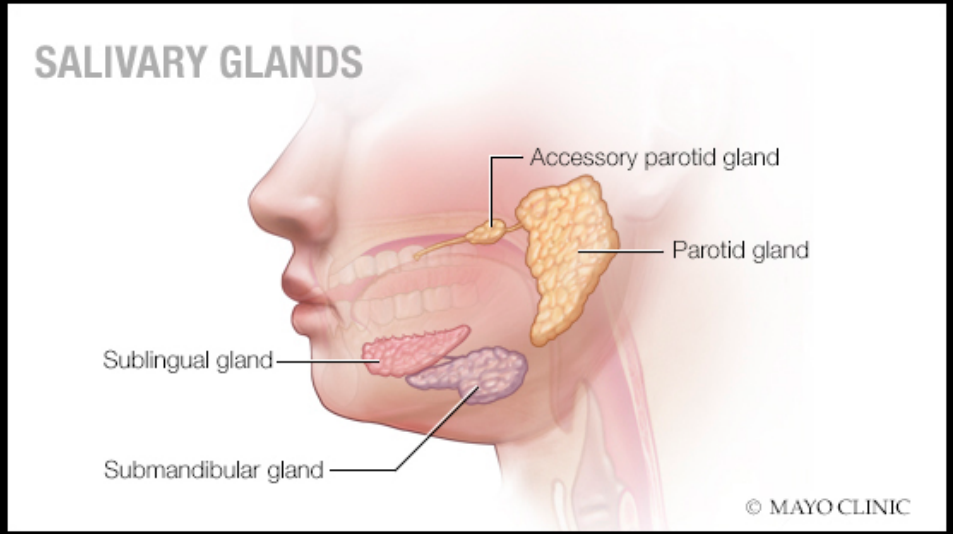
- Our patient is treated with concurrent chemoradiation
- She has 15% weight loss and requires a G-tube, liquid morphine for severe mucositis
- She requires care from SLP, NP, RD, GPO, RO, MO throughout treatment

Intermediate Toxicity

- 6 weeks to 6 months after RT
- Lhermitte's syndrome
- Edema (Dulap)
- Possible need for prolonged diet changes or G tube dependency

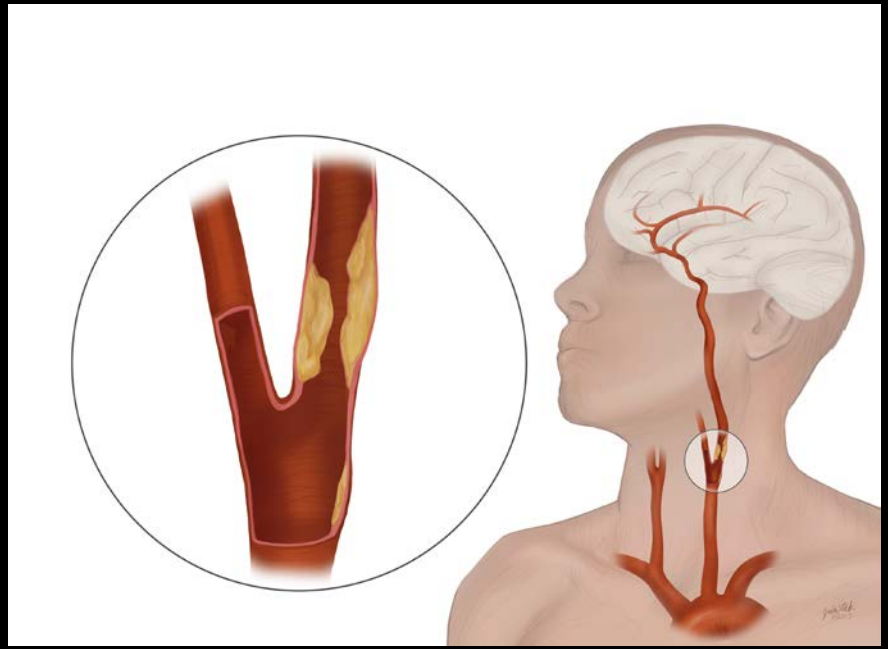
Late Toxicity - Common

- Xerostomia
- Dental decay susceptibility
- Neck fibrosis and telangiectasia
- Decreased beard growth
- Chronic otitis media
- Hearing loss
- Epistaxis
- Permanent dysgeusia
- Trismus
- Hypothyroidism



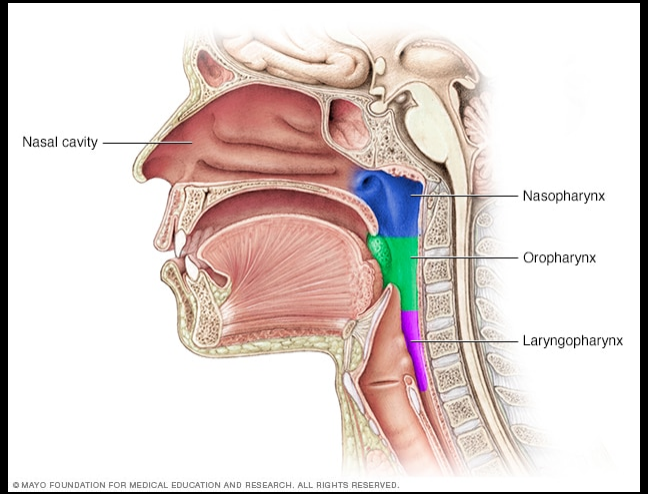
Late Toxicity - Uncommon

- Soft tissue necrosis
- Osteoradionecrosis
- Increased stroke risk / carotid artery stenosis
- Second malignancy
- CN palsy
- Brain necrosis (temporal lobes)
- Pituitary dysfunction
- Transverse myelitis



Neoadjuvant Chemotherapy

- Used for fit patients with T4 disease
- Tumour abutting the brainstem, brain, spinal cord, or optic chiasm
- Cannot treat this area of tumour to 70 Gy to risk of damage to these critical organs
- Aim to shrink tumour before radiation, so treatment volumes are smaller, and risk of toxicity lower
- In BC, we use 2-3 cycles of cisplatin/gemcitabine -> followed by 7 weeks of chemoradiation



ORIGINAL ARTICLE PEER-REVIEWED

Impact of Neoadjuvant Chemotherapy on the Administration of Concurrent Chemoradiation for Locally Advanced Nasopharyngeal Carcinoma

Benjamin Maas, Cheryl Ho, Sarah Hamilton, Doug Leedy, Eric Berthelet

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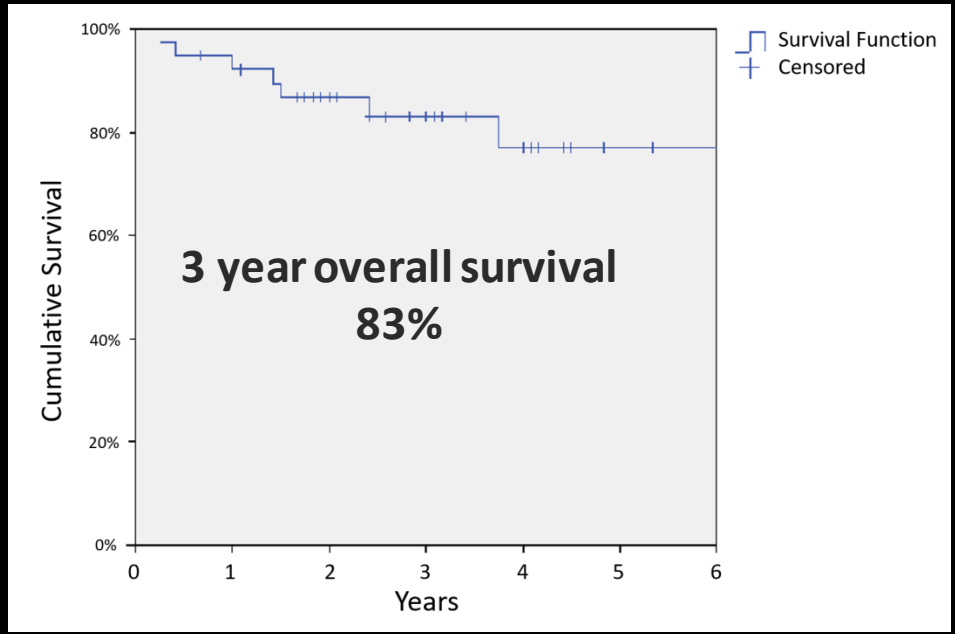
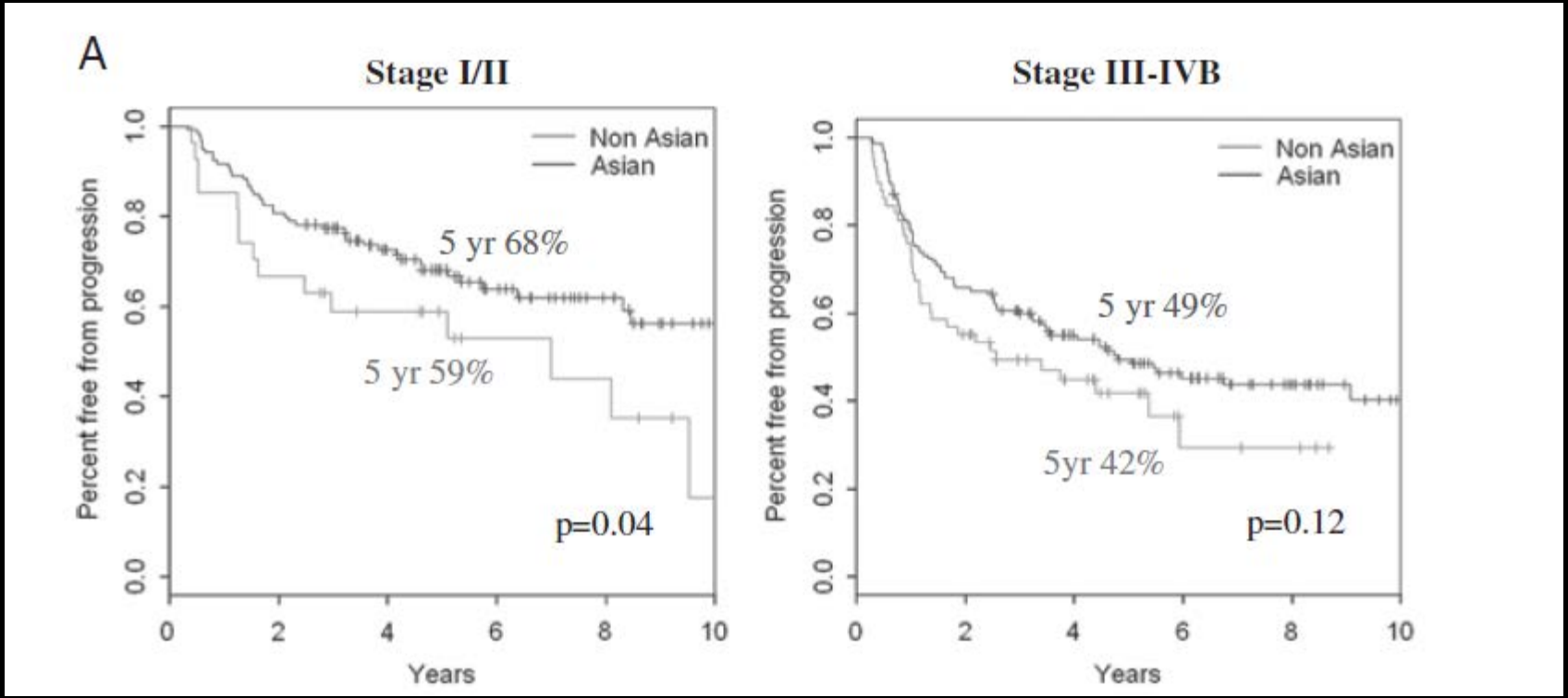
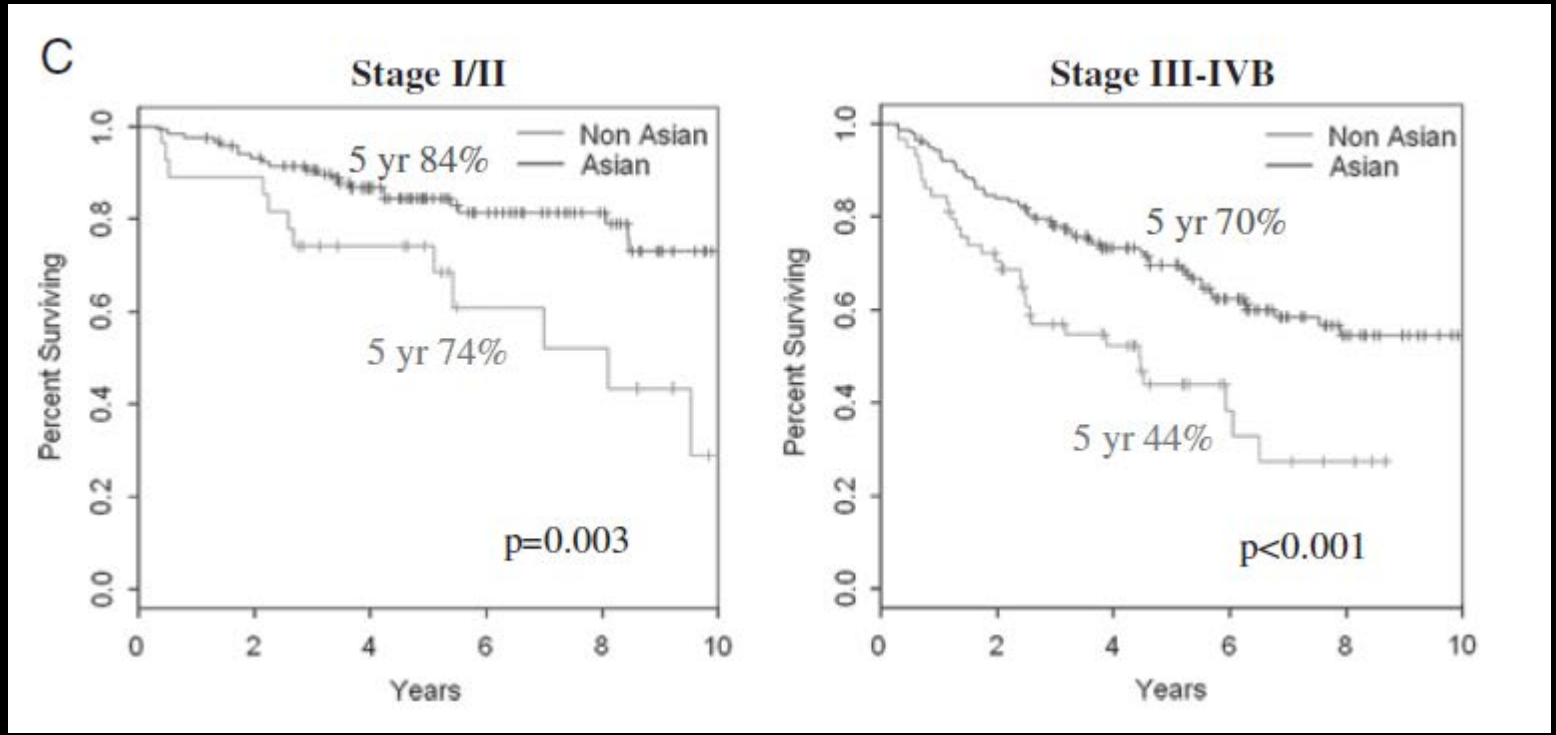


Progression Free Survival



Hamilton *et al. AJCO 2014*

Overall Survival



Hamilton *et al. AJCO 2014*

Recurrence

- Local:
  - Salvage endoscopic nasopharyngectomy
  - Maxillary swing procedure
  - Re-irradiation

Survival after LRR was 2.6 years with salvage versus 1.1 years without salvage therapy

- Nodal
  - Neck dissection
  - Re-irradiation

Median survival from distant recurrence was 0.6-0.7 years, but there are some long term survivors

- Distant
  - Palliative chemotherapy
  - SABR for oligometastatic disease

Follow-up

- 6 weeks after treatment completion
- 12 week post treatment PET/MRI

- Why?
  - Assess recurrence/residual disease
  - Manage toxicities

- Nasopharyngoscopy with each visit
- BC Cancer alternating with ENT
  - Year 1, q3 mo
  - Year 2, q 4mo
  - Year 3, q 6mo
  - >5yrs, 6-12mo u

Back to our Clinical Case

- Her 12 week post treatment PET scan shows no evidence of cancer!
- Her G-tube is removed, she is off opioids
- She returns to work 4 months after treatment
- She is on q3monthly follow-up

- Long term, she has persistent xerostomia and dental caries
- She develops hypothyroidism after 2 years requiring Synthroid replacement
- She otherwise remains well, and is discharged 7 years post treatment back to her family doctor

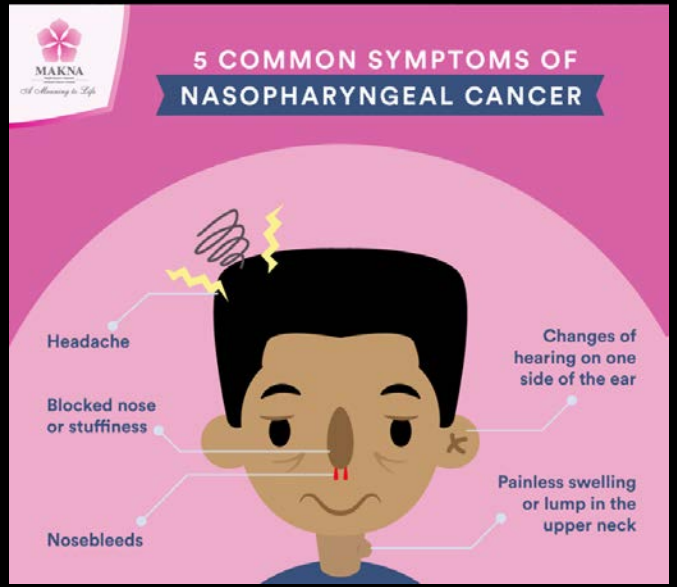
Follow-up

- Re-image as indicated by signs/symptoms
  - May do q12mo MRI for high risk patients
- EBV DNA (blood test) – not routinely done in BC
- TSH q6-12mo – can have delayed hypothyroidism
- SLP evaluation and rehab as indicated
- Audiogram if hearing loss
- Nutritionist consultation as needed
- Dental hygiene q6 mo for life

Conclusion

- Nasopharyngeal carcinoma is more common in Asian patients

- Presenting symptoms
  - Painless neck mass
  - Epistaxis
  - Nasal obstruction
  - Headaches
  - Unilateral tinnitus, hearing loss
  - Sensation of blocked ear



Conclusion

- Refer to ENT +/- U/S guided biopsy if neck mass
- Treatment is radiation – usually with concurrent chemo
- Good long term outcomes, especially for early Stage disease
- Patients at risk of acute and late toxicities, which require ongoing monitoring and multi-disciplinary approach

Thank you!

- Questions?