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Current concepts in the management of Oropharyngeal Cancer

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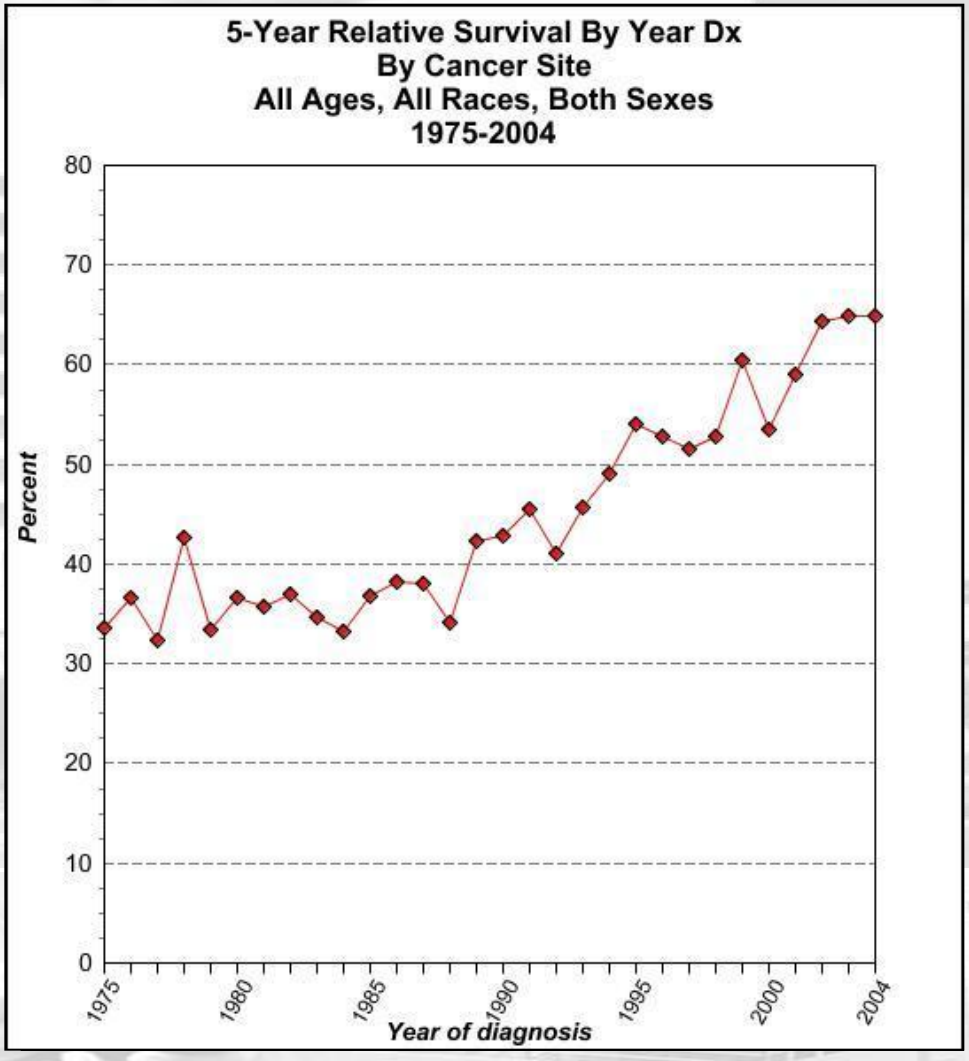
Content

- Epidemiology
- Imaging and work-up
- Early disease
- Advanced disease
- Surgical approaches

Oropharyngeal cancer and HPV

- In the US 1999-2006, there has been a 22% increase
- Pooled data from published series 2006-2009 shows that 55% of oropharyngeal cancer is HPV related
- NCCN and American College of Pathology recommend HPV-16 testing



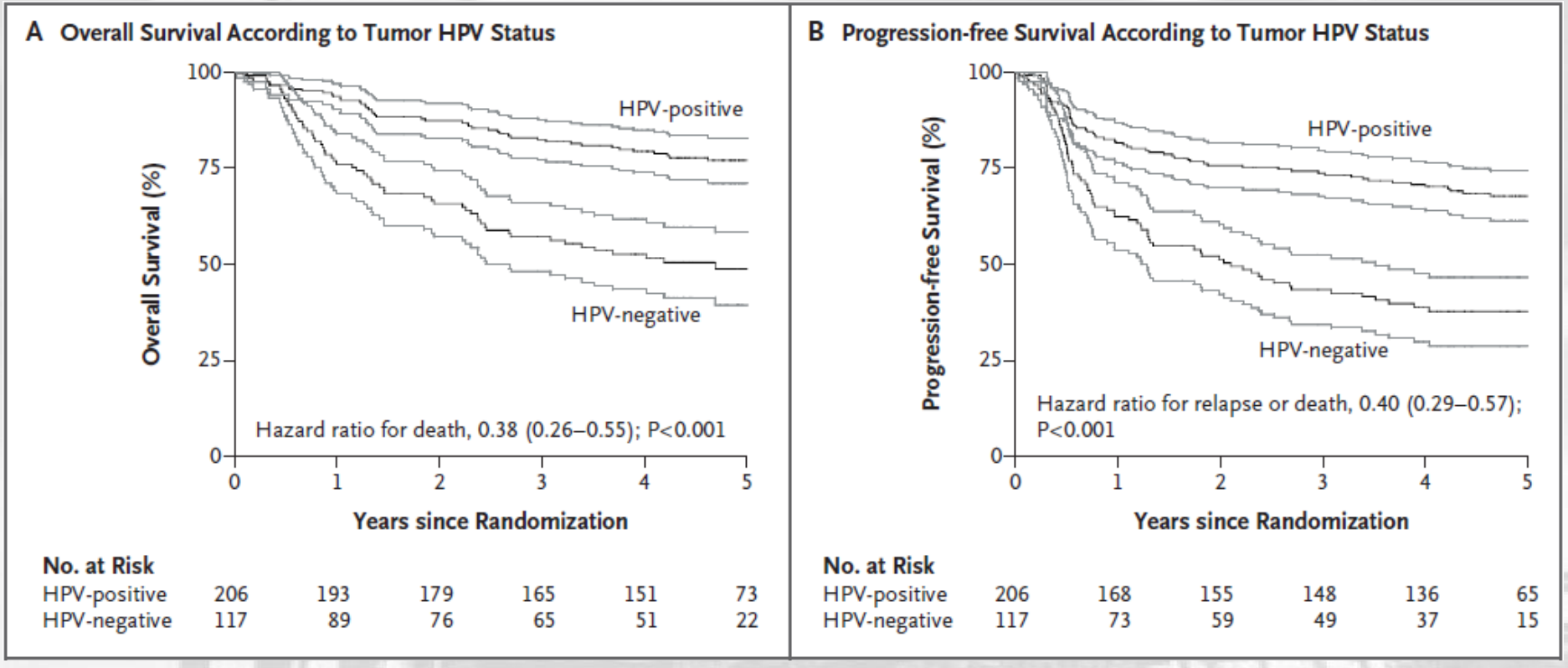
Oropharyngeal cancer and HPV

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Human Papillomavirus and Survival of Patients with Oropharyngeal Cancer

K. Kian Ang, M.D., Ph.D., Jonathan Harris, M.S., Richard Wheeler, M.D., Randal Weber, M.D., David I. Rosenthal, M.D., Phuc Felix Nguyen-Tân, M.D., William H. Westra, M.D., Christine H. Chung, M.D., Richard C. Jordan, D.D.S., Ph.D., Charles Lu, M.D., Harold Kim, M.D., Rita Axelrod, M.D., C. Craig Silverman, M.D., Kevin P. Redmond, M.D., and Maura L. Gillison, M.D., Ph.D.



…the 3 year absolute benefit of HPV +ve status for overall survival was 25% and the absolute benefit of progression-free survival was 30%...

HPV+ve effect on overall survival

Modality	Hazard Ratio	Reference
RT (DAHANCA)	0.44	Lassen JCO 2009
CRT (TROG)	0.29	Rischin ASCO 2009
CRT (RTOG)	0.44	Gillison
Sequential (ECOG)	0.36	Fakhry JNCI 2008
Sequential (TAX324)	0.20	Posner

Work-up for oropharyngeal cancer

Table 1. T staging for oropharyngeal tumours

TX	Primary tumor cannot be assessed
T0	No evidence of primary tumor
Tis	Carcinoma *in situ*
T1	Tumor 2 cm or smaller in greatest dimension
T2	Tumor larger than 2 cm but 4 cm or smaller in greatest dimension
T3	Tumor larger than 4 cm in greatest dimension
T4a	Tumor invades the larynx, deep/extrinsic muscle of tongue, medial pterygoid, hard palate, or mandible
T4b	Tumor invades lateral pterygoid muscle, pterygoid plates, lateral nasopharynx, or skull base or encases carotid artery

MRI is best for oropharynx

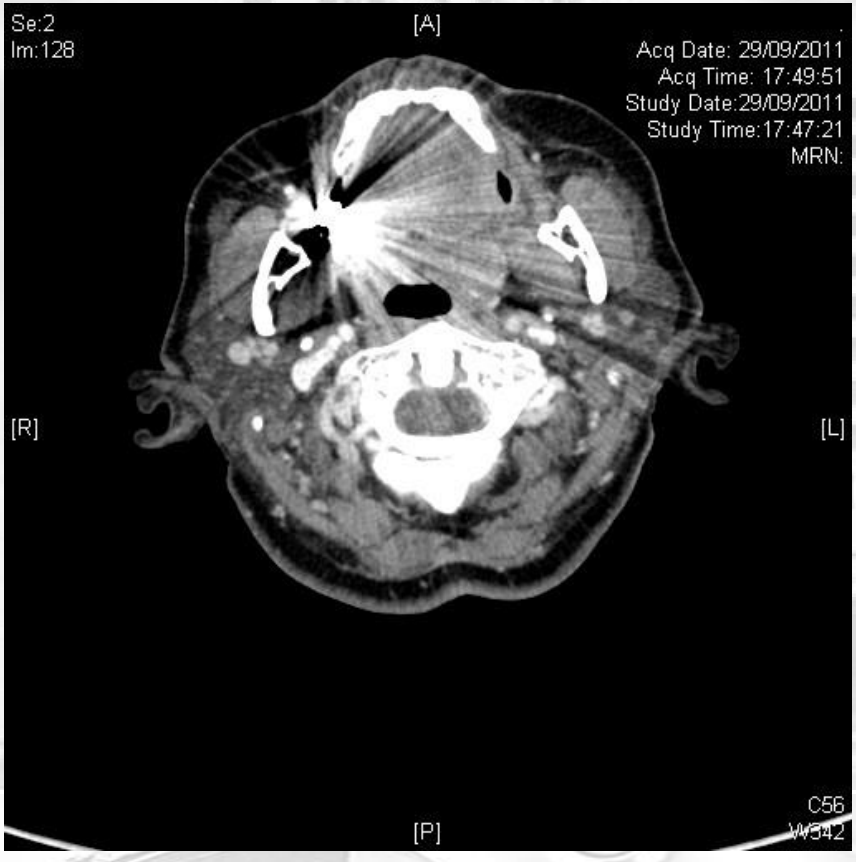
Pros

- Better soft tissue definition
- T1 shows anatomy, T2 shows abnormal tissue, particularly STIR
- Less dental scatter artefact
- Ideal if surgery considered

Cons

- Takes longer (2-5 minutes per sequence), up 40 minutes in total
- Patient must lie still
- Expensive

MRI is better than CT



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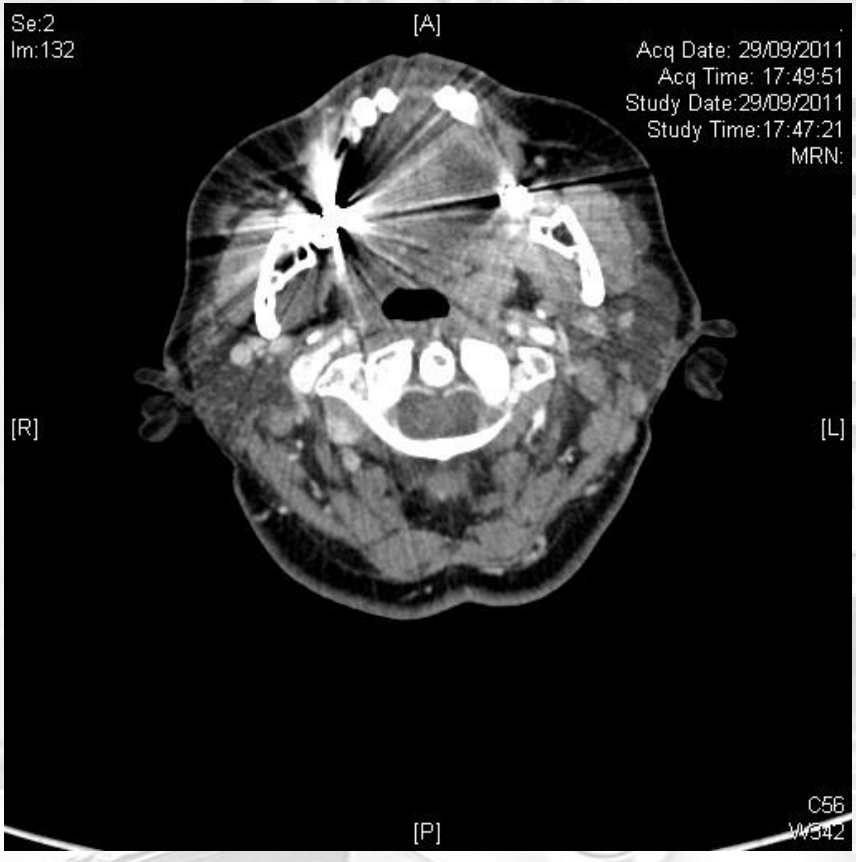

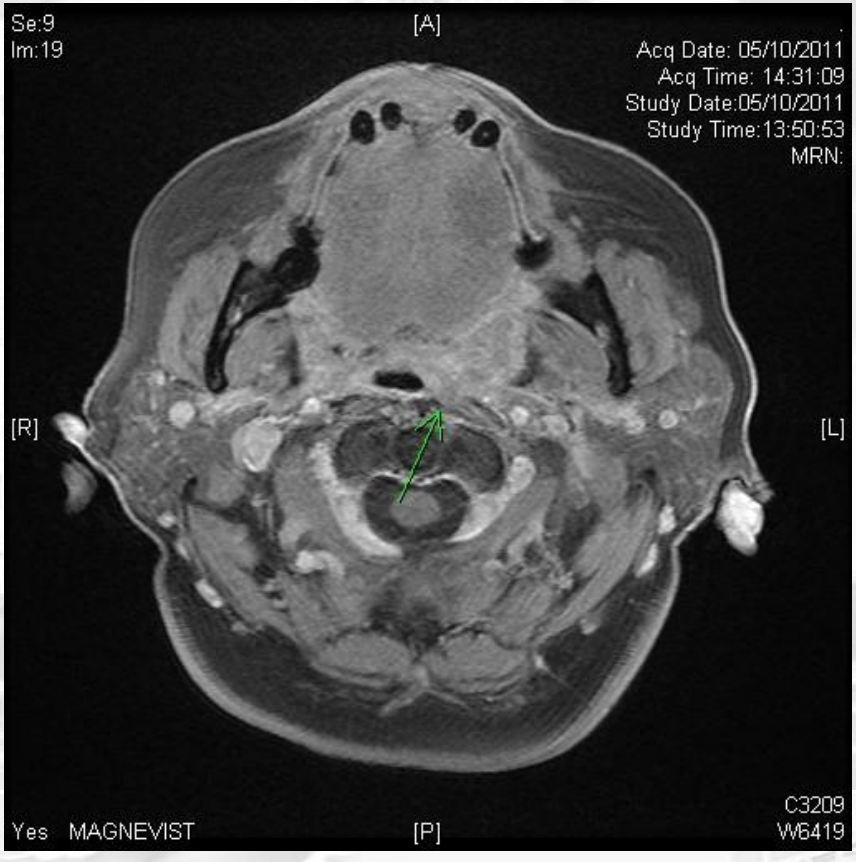

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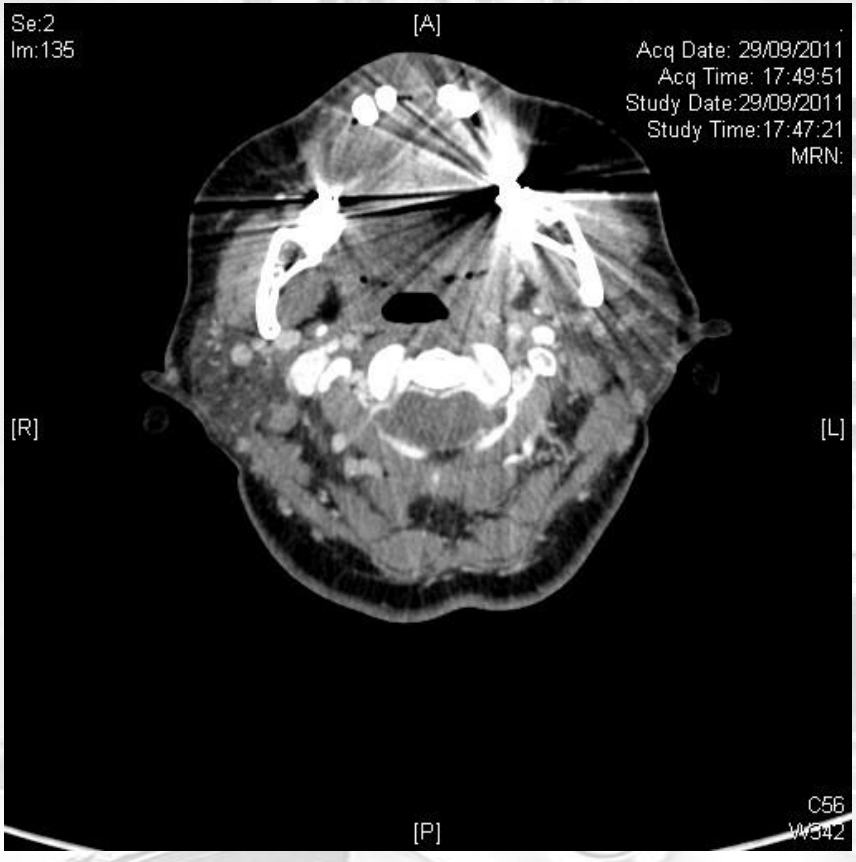

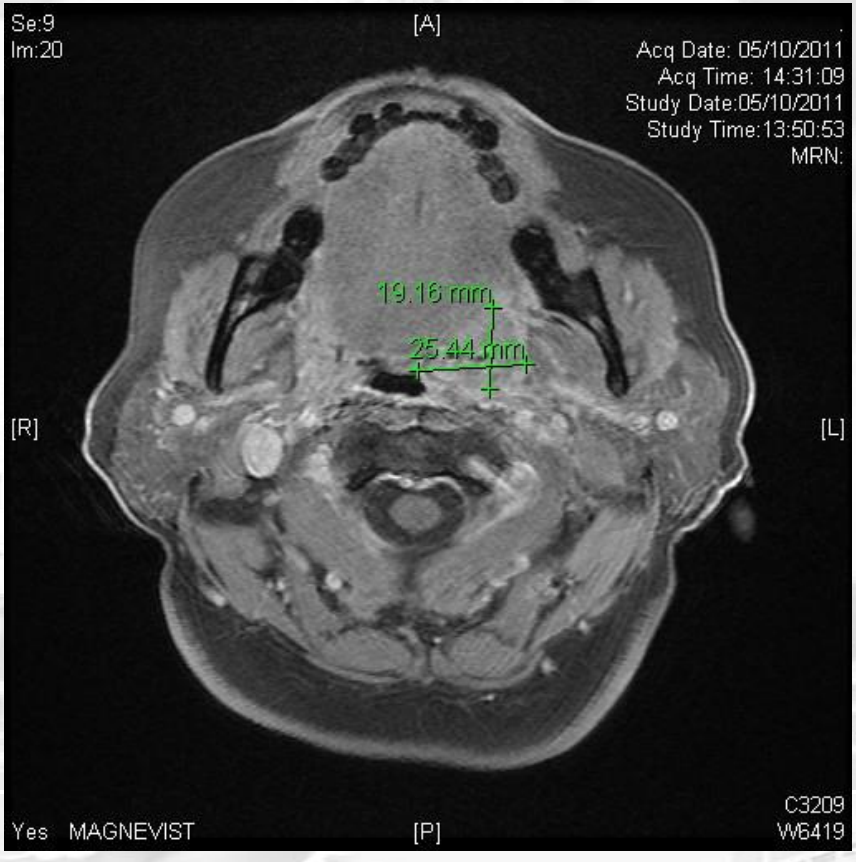

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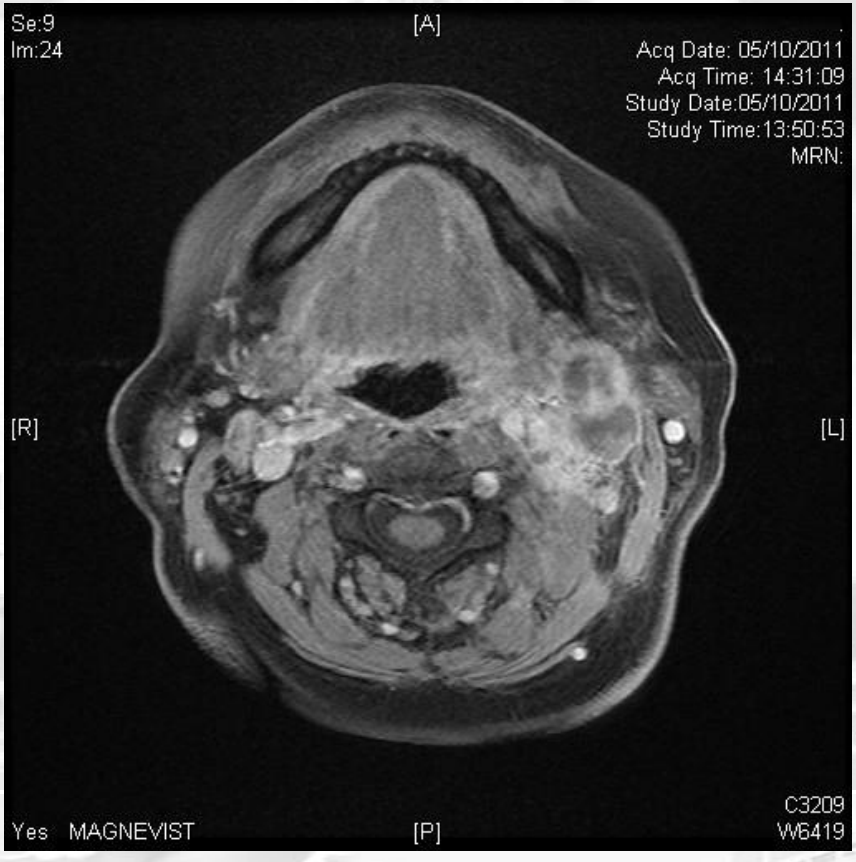

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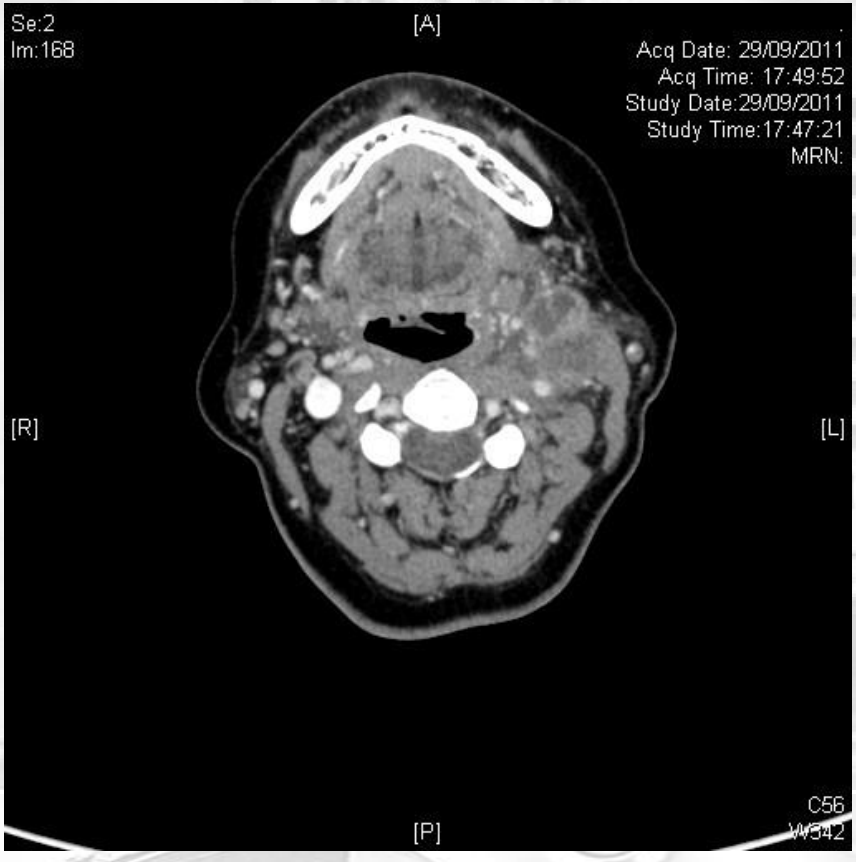
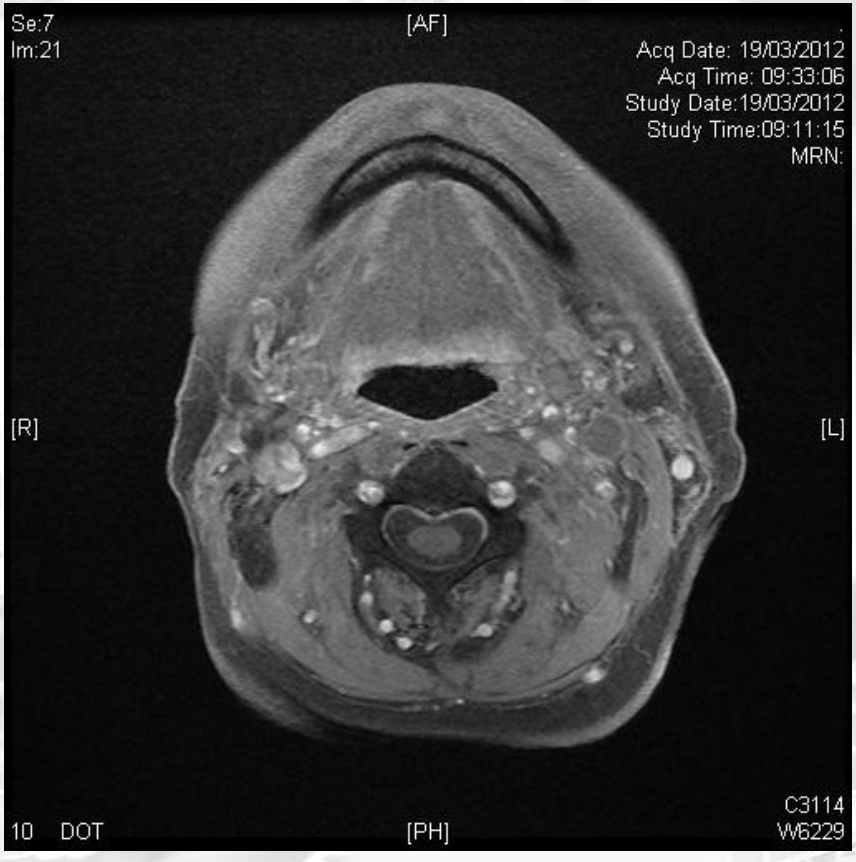
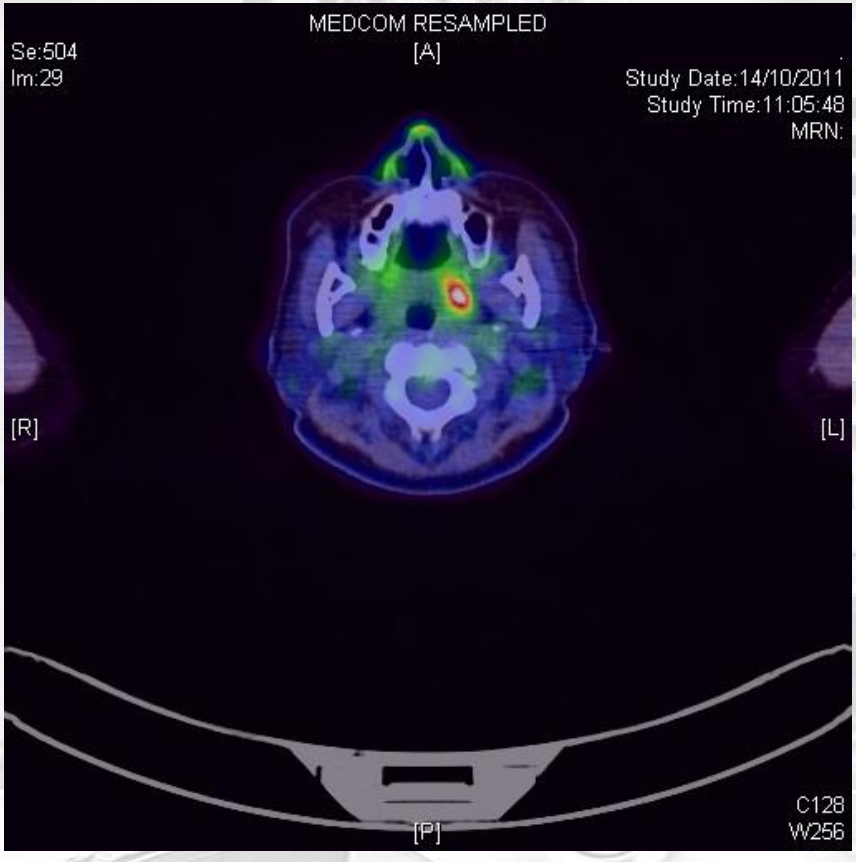
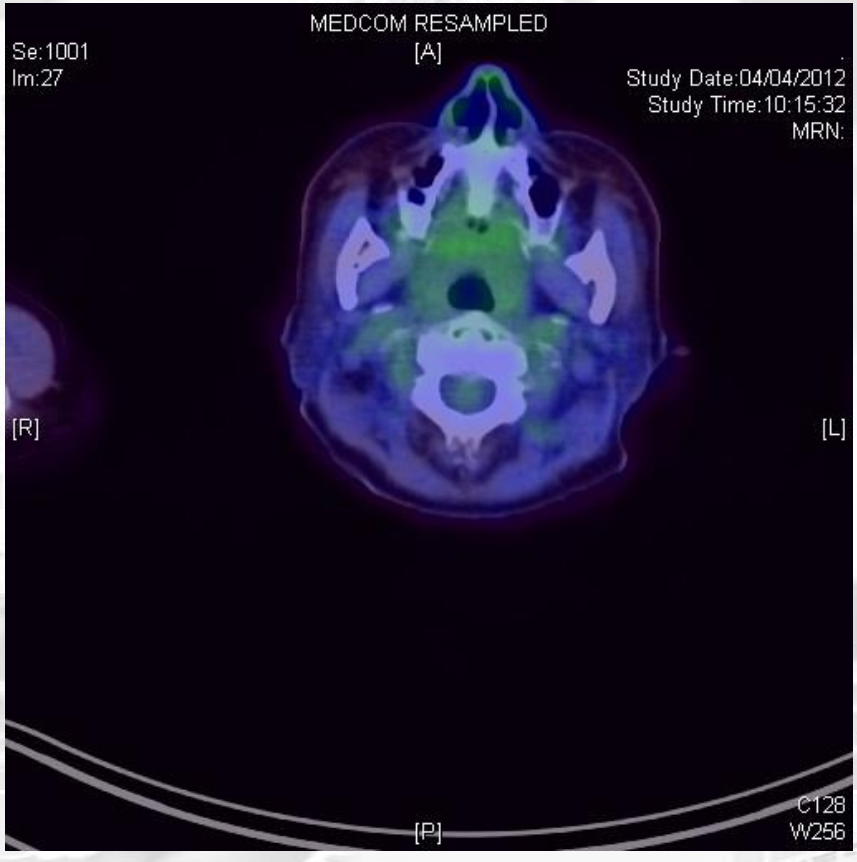


PET-CT is ideal if obtained before and after treatment



PET-CT for surveillance





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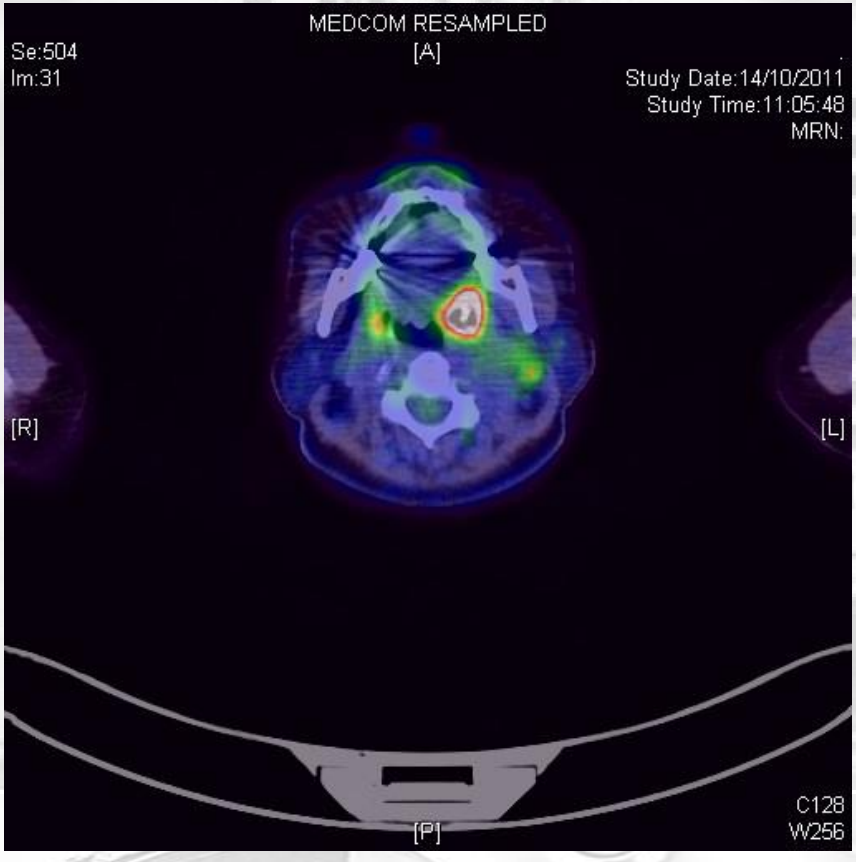

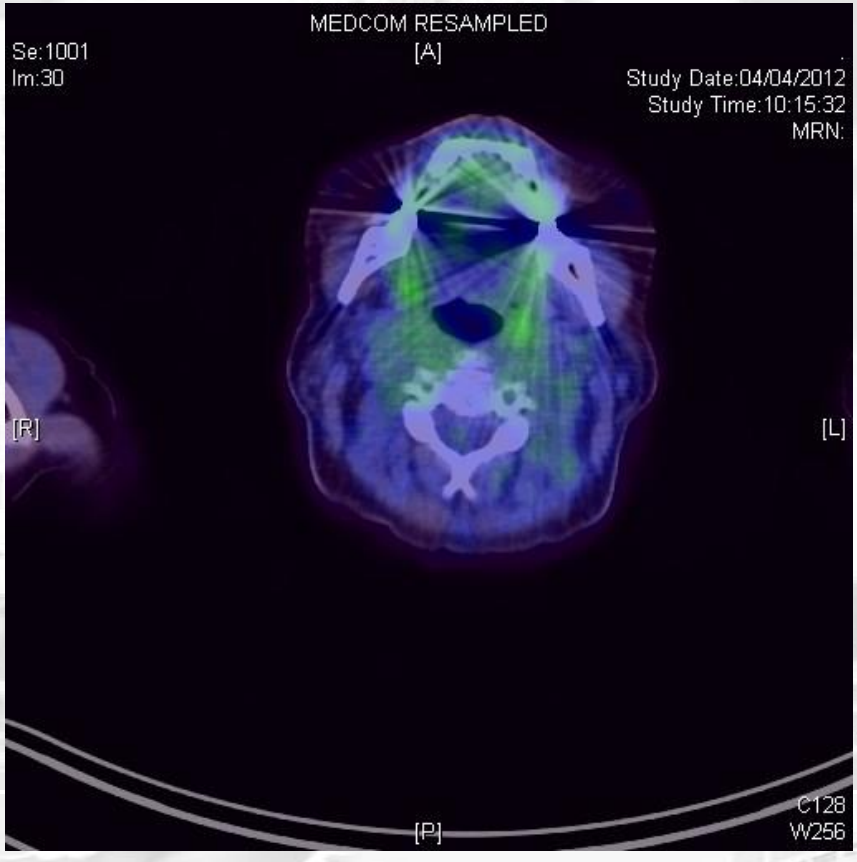

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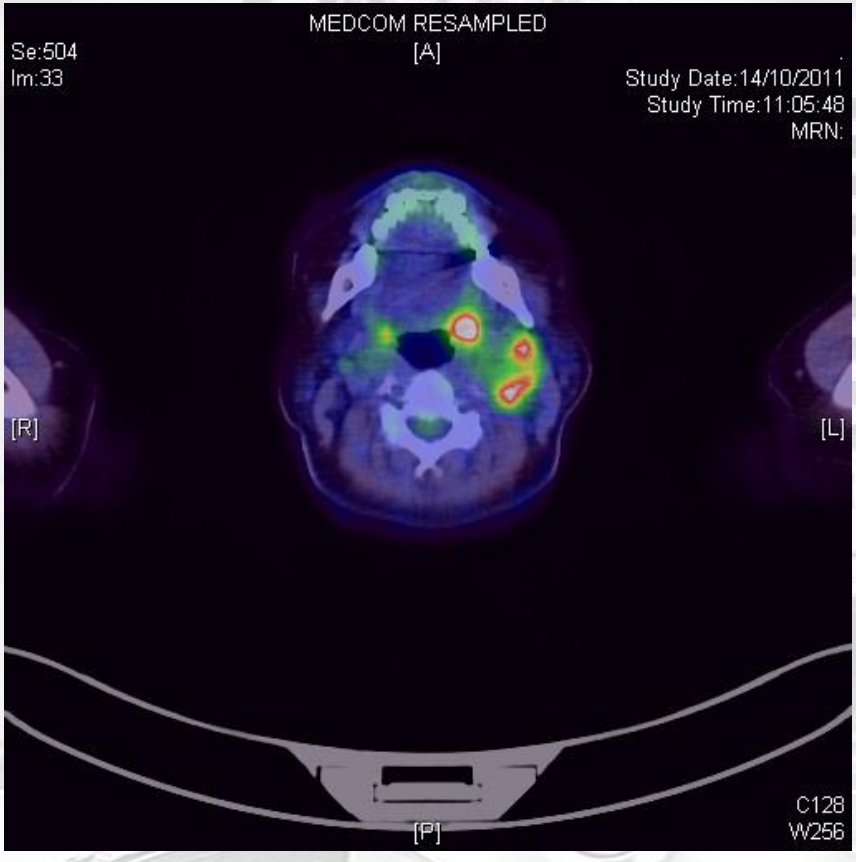

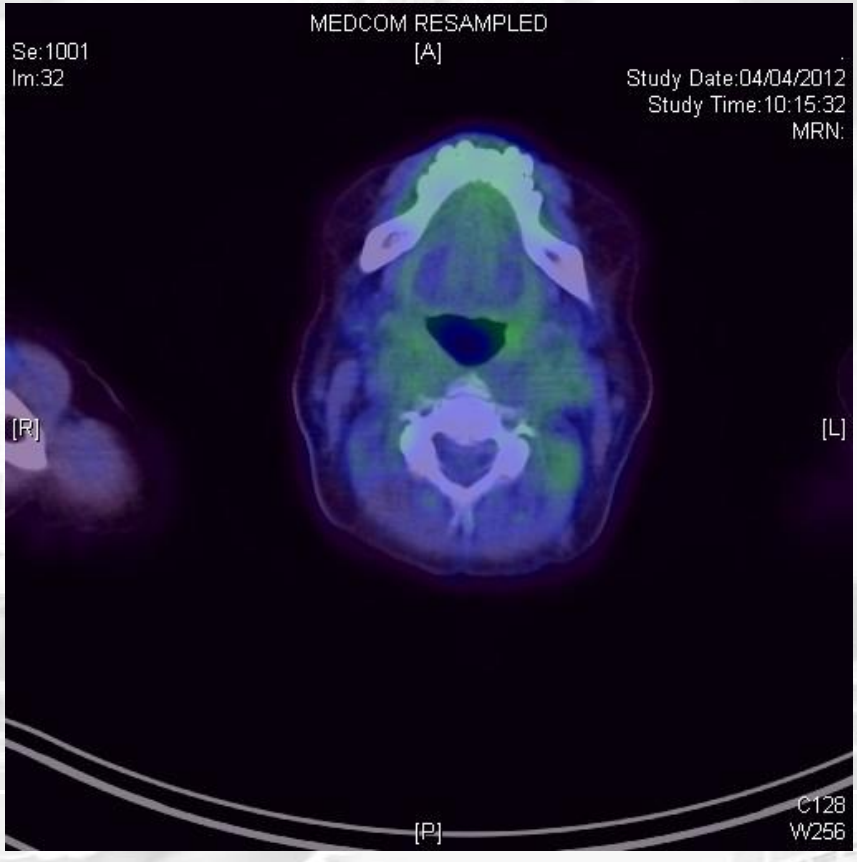

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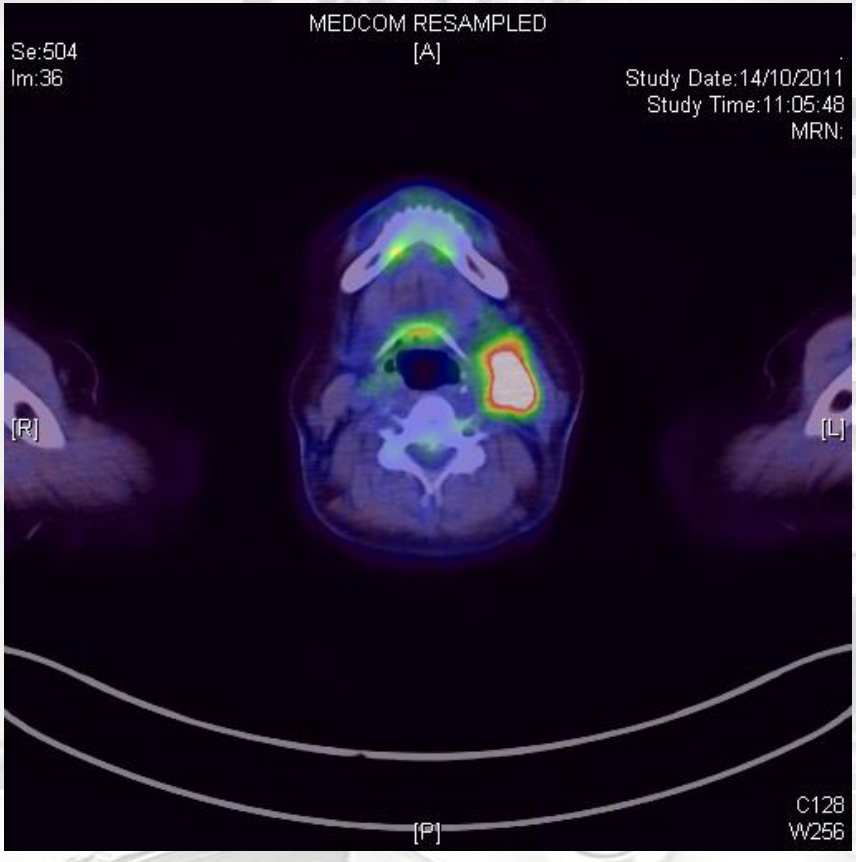

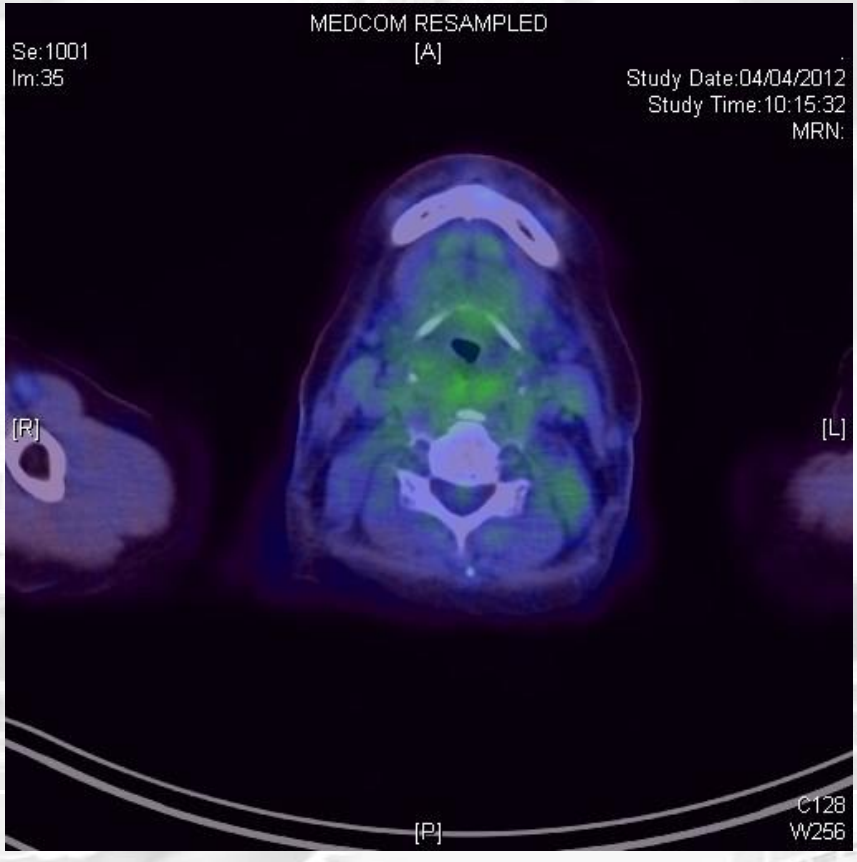

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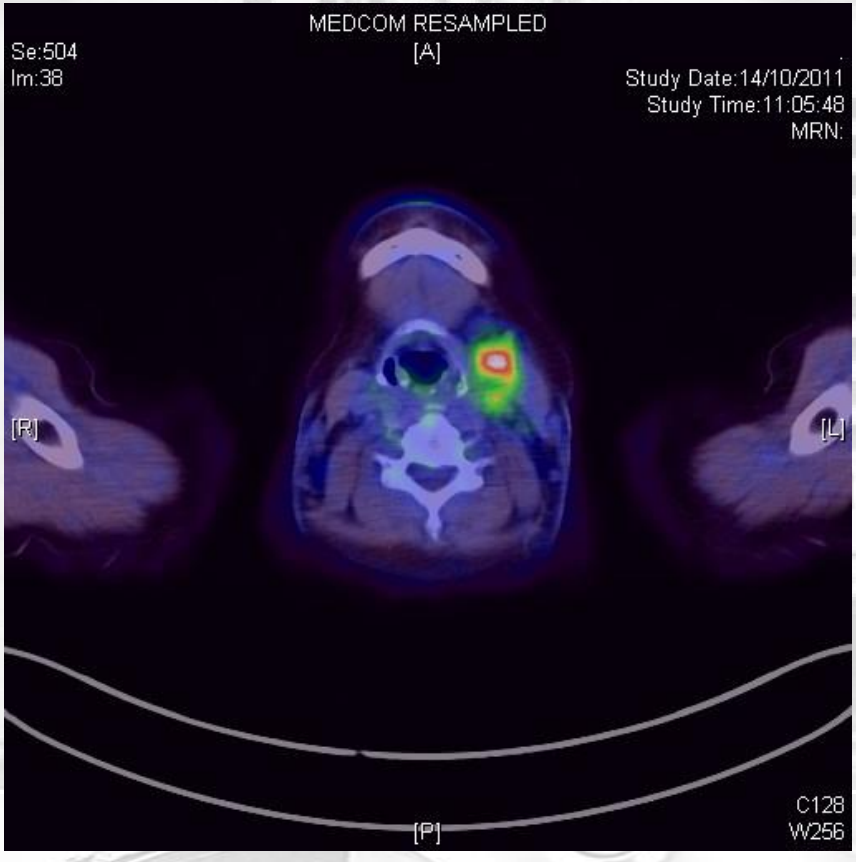

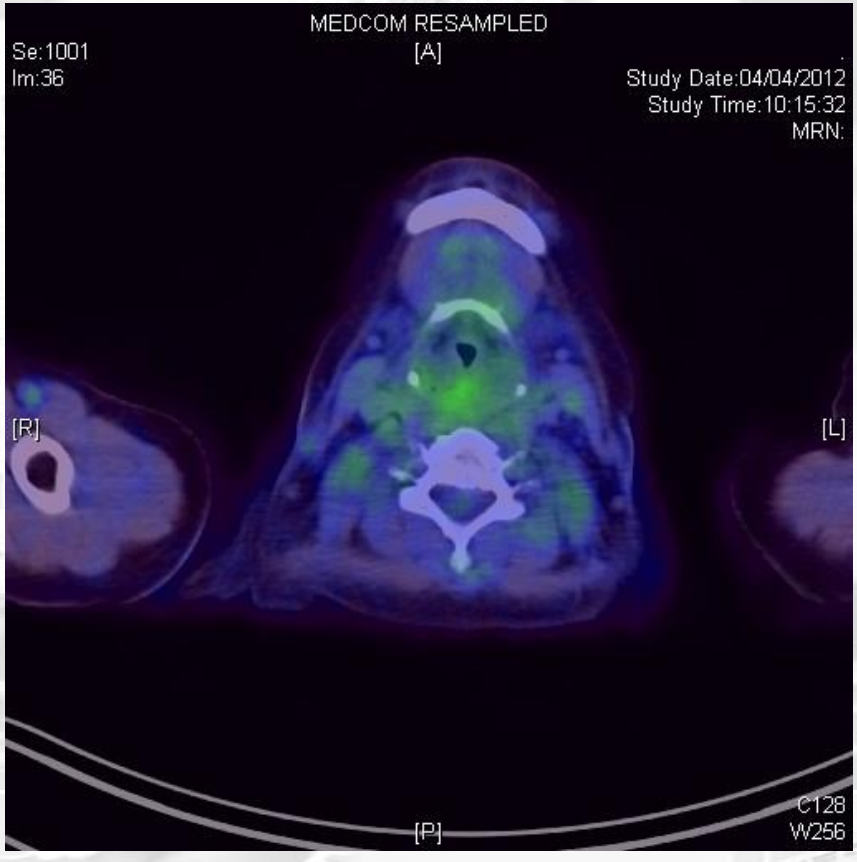

Is panendoscopy necessary?

- If surgery is to be considered – panendoscopy is ideal to assess tumour and exposure for surgery
- The use of transnasal oesophagoscopy makes panendoscopy less useful
- In the non-smoker, panendoscopy is probably unnecessary

The Royal College of Surgeons of England

HEAD AND NECK

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The use of examination under anaesthesia and panendoscopy in patients presenting with oral cavity and oropharyngeal squamous cell carcinoma

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ABSTRACT

INTRODUCTION Although examination under anaesthesia and panendoscopy (EUAP) has traditionally been used in the assessment of patients presenting with oral cavity and oropharyngeal squamous cell carcinoma (SCC), the era of modern medicine with its advanced imaging techniques has meant that the indications for this technique have potentially reduced.

SUBJECTS AND METHODS In an attempt to quantify the current use of EUAP in the UK, a structured telephone questionnaire was undertaken of 50 maxillofacial units. Information was gathered regarding whether the technique was adopted on a routine or selective basis. Likewise perceived disadvantages were sought.

RESULTS Twenty-two units (44%) carried out EUAP on all patients presenting with oral cavity and oropharyngeal SCC. Of the remaining 28 units, all employed EUAP on a selective basis, the most commonly for the assessment of the primary tumour. The most common perceived disadvantage of carrying out EUAP routinely was its potential to increase the waiting time to definitive treatment.

CONCLUSIONS These results suggest a gradual move towards the selective use of EUAP in patients presenting with oral cavity and oropharyngeal SCC.

Deep biopsy or tonsillectomy?

- For obvious tumours, a simple biopsy is sufficient
- Tonsillectomy worsens functional outcome after radiotherapy
- If tumour is small but palpable – perform a tonsillectomy
- In unknown primaries, perform bilateral tonsillectomy

Bilateral disease?

- 'Bilateral disease' is most often confluent
- True bilateral synchronous tumours are being described
- MRI and PET-CT are now revealing more cases
- Implication on management is important

Diagnosis of Bilateral Tonsil Cancers via Staging PET/CT: Case Report and Review

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Diagnostic workup of metastatic head and neck squamous cell carcinoma of unknown primary site has traditionally included CT and/or MRI imaging and endoscopic biopsies. Routine bilateral tonsillectomy is highly controversial and the role of PET/CT is evolving, both for identification of potential primary sites and the detection of distant metastases. We report a case of cervical nodal metastasis of squamous cell carcinoma from an unknown primary site, in which dual-modality PET/CT led to the unexpected diagnosis of synchronous bilateral tonsillar cancers. In addition, PET/CT correctly distinguished pulmonary sarcoidosis from metastatic disease in this patient.

1. Introduction

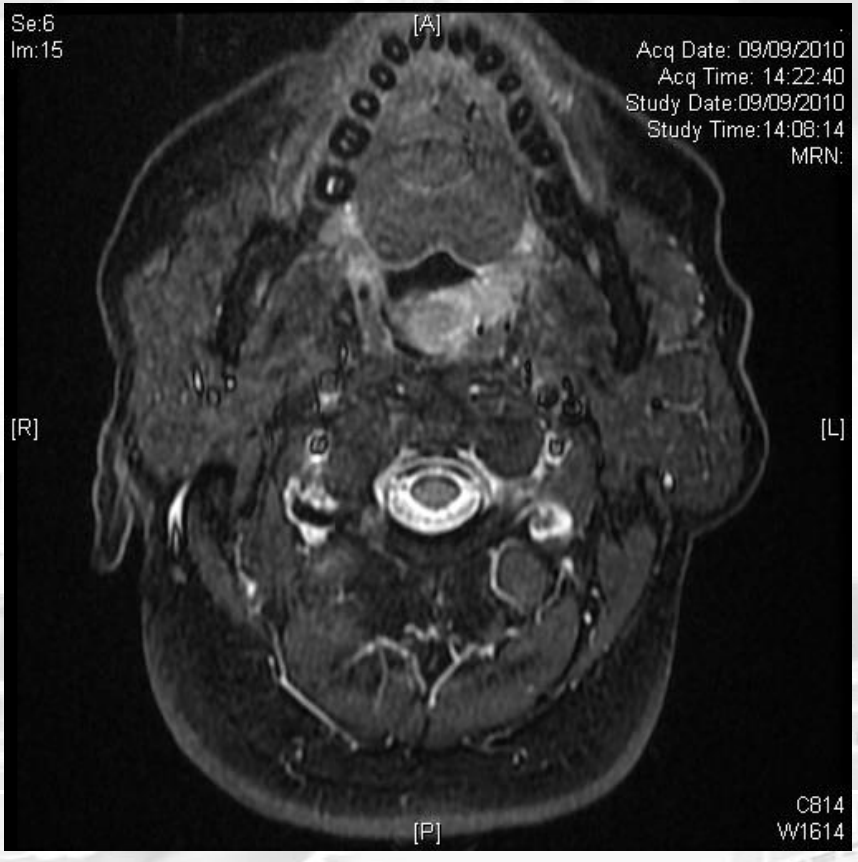
The standard workup for a head and neck squamous cell carcinoma of unknown primary site (CUPS) includes physical exam, chest imaging, CT or MRI of the head and neck region, and panendoscopy with biopsies of potential primary sites. Given that a high proportion of occult tumors are located in the palatine tonsils, diagnostic unilateral tonsillectomy is frequently recommended. Bilateral tonsillectomy has been proposed but remains controversial. This case illustrates that skilled interpretation of PET/CT, incorporating a diagnostic-quality anatomic imaging component, can correctly identify clinically inapparent synchronous tonsil cancers and assist in the evaluation for distant disease.

2. Case Report

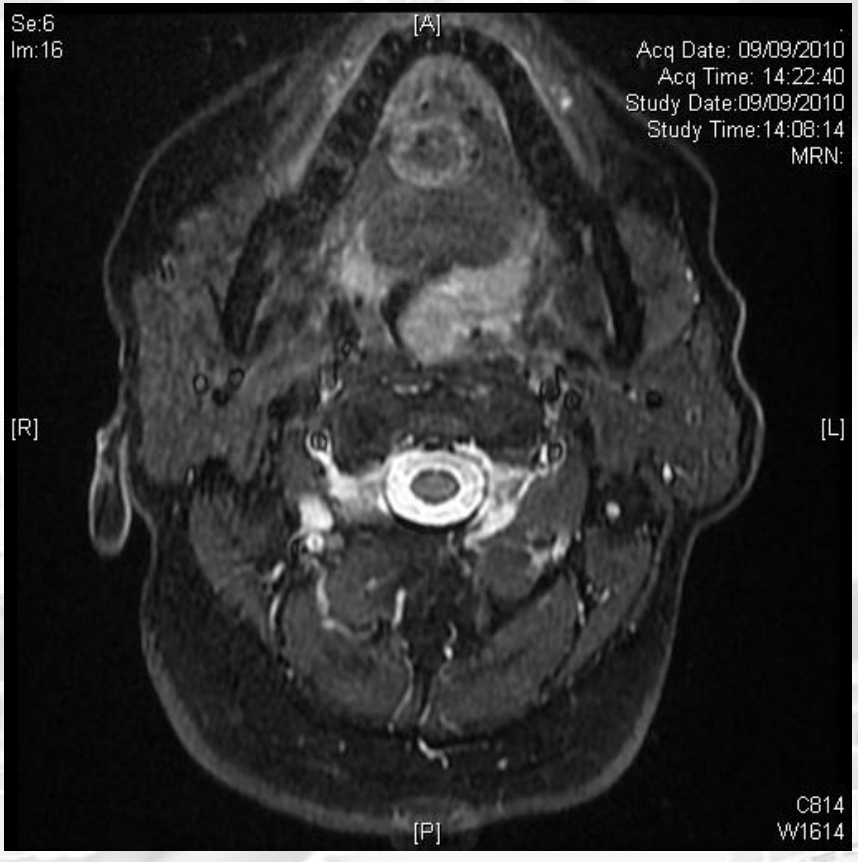
A 57-year-old man presented with a flu-like syndrome and right neck swelling. Fine-needle aspiration of the right neck mass revealed squamous cell carcinoma, and a CT scan of the head and neck revealed an enlarged right jugulodigastric lymph node (2.9 × 2.5 cm). A CT scan of the chest showed mediastinal and bilateral hilar lymphadenopathy with bilateral interstitial nodular opacities in the upper lobes. A diagnostic PET scan showed the right jugulodigastric node to have a standardized uptake value (SUV) of 5.98 with bilateral oropharyngeal radiotracer activity. Surprisingly, radiotracer uptake in the oropharynx was higher in the left tonsil compared to the right. The patient underwent two rounds of panendoscopy with biopsies which revealed, respectively, mild dysplasia of the right tonsil and a friable and nodular inferior border of the right tonsil containing carcinoma in situ. Diagnostic right tonsillectomy showed extensive squamous cell carcinoma in situ with a high suspicion of invasion. The left tonsil was specifically noted to be clinically unremarkable.

A repeat PET/CT was performed for the purposes of radiotherapy planning and this study confirmed the presence

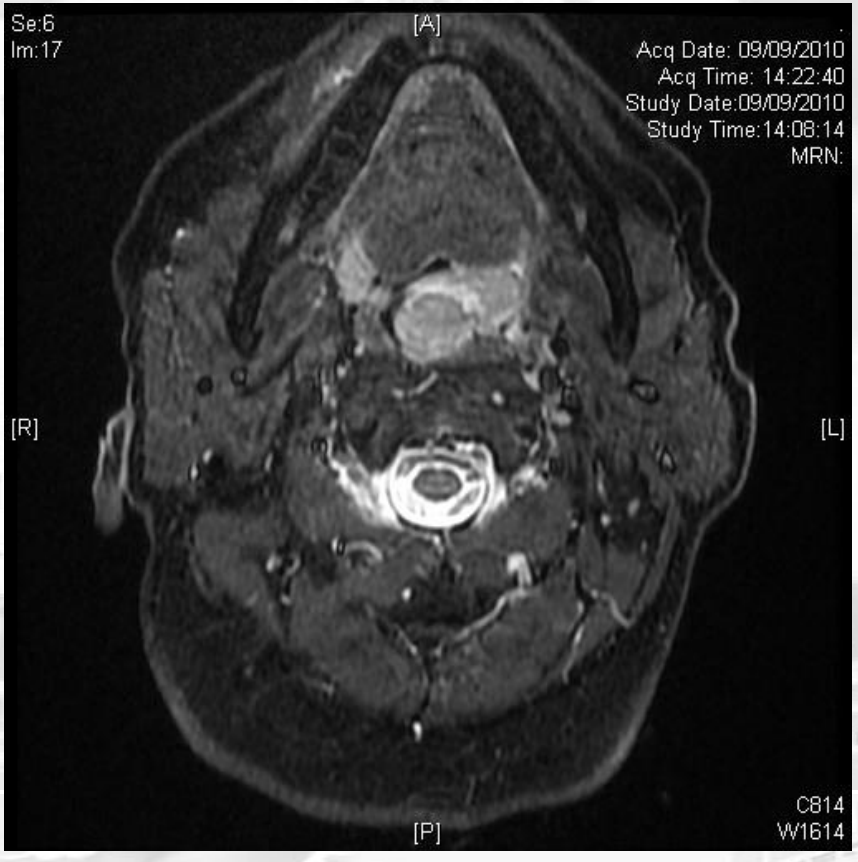
Bilateral synchronous tonsillar cancer



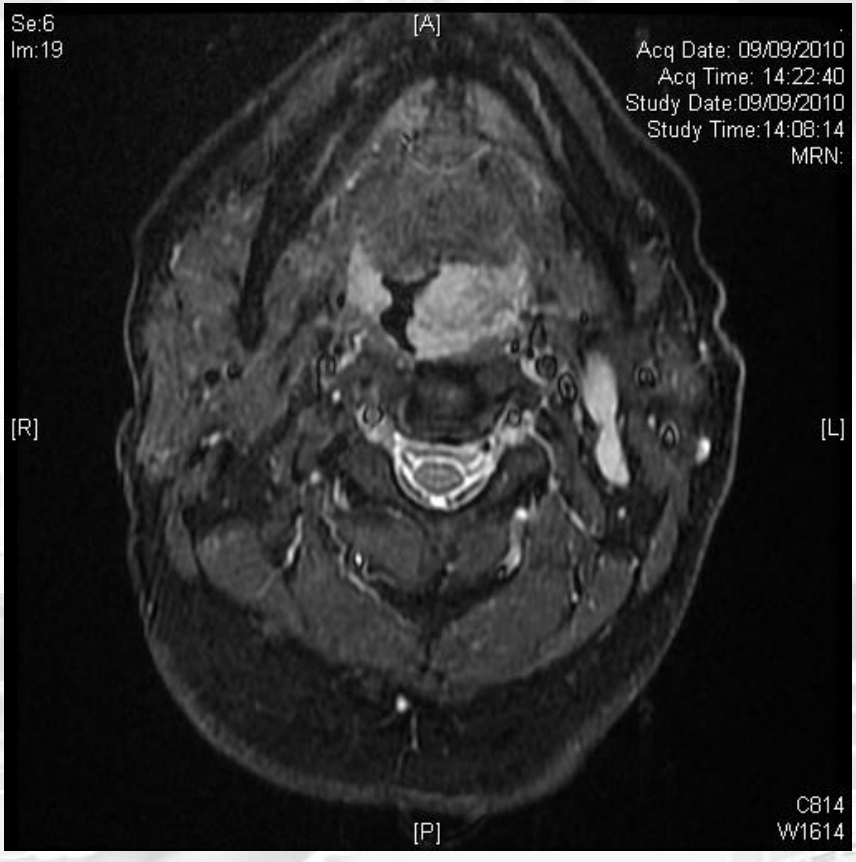
Bilateral synchronous tonsillar cancer



Bilateral synchronous tonsillar cancer



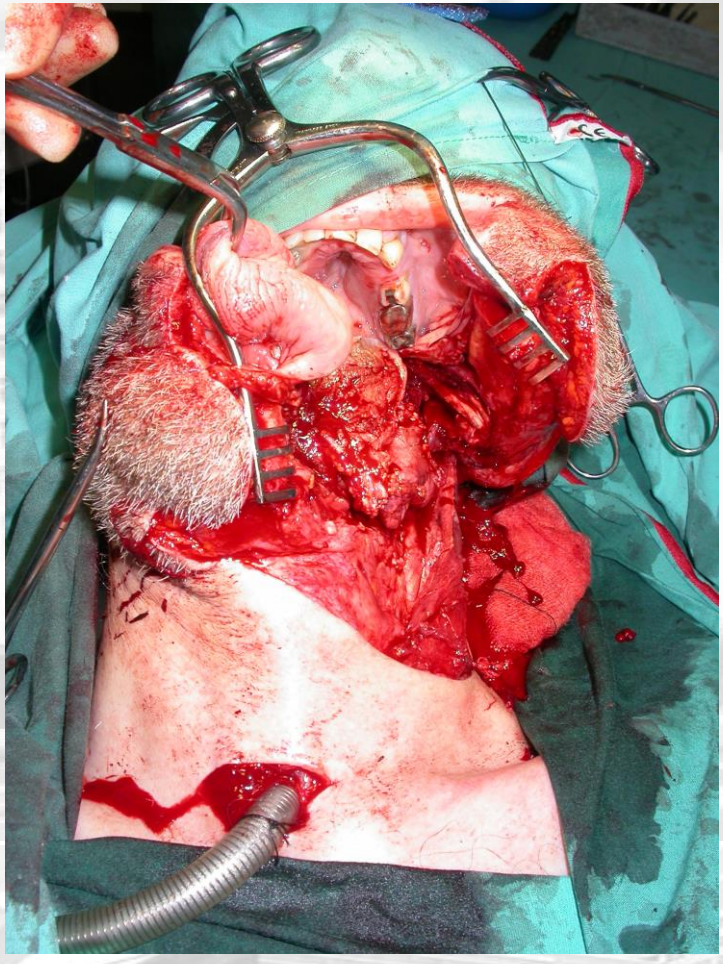
Bilateral synchronous tonsillar cancer



Bilateral synchronous tonsillar cancer

Principles of management

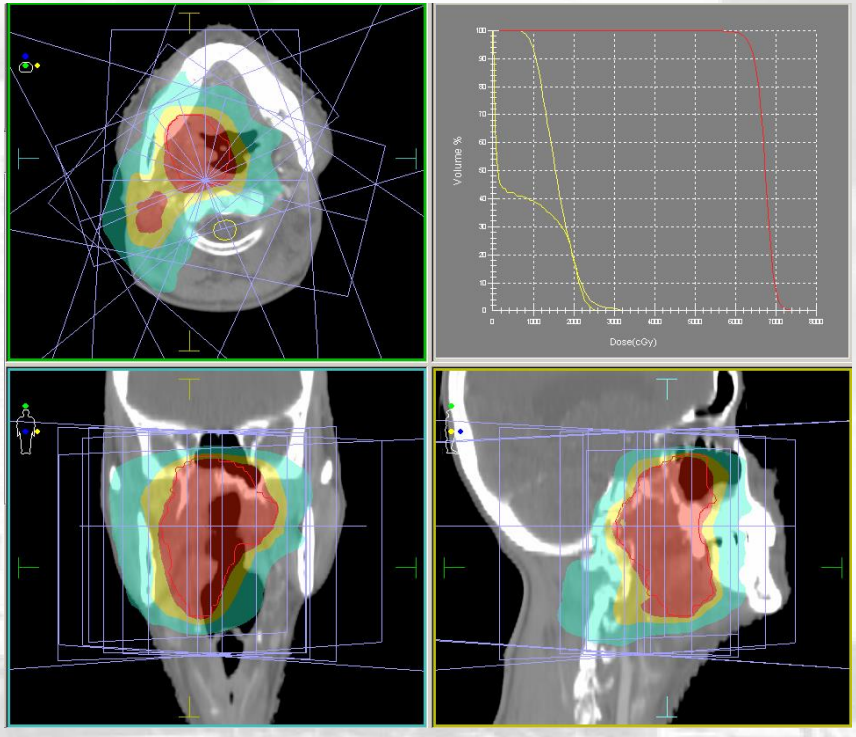
- Surgery and post-op RT gives best survival outcome
- Functional results were poor using conventional open surgery
- Chemoradiation offers good outcome
- IMRT now offers less xerostomia and ORN but not better trismus or swallowing



Principles of management

However…

- CRT does not equate ‘organ preservation’
- Data supporting ‘organ-preserving’ CRT comes from larynx trials
- Salvage surgery for oropharynx has worse outcome than in the larynx
- Primary transoral surgery offers better function



Early stage disease

Video 1

Video 2

Early stage disease

- Primary surgery +/- RT or RT then salvage
- 5 year disease-specific survival:

  Surgery + Adj RT = 81-100%

  RT + salvage = 77 - 89%
- Radical RT dose is 70 Gy in 35# but a 55Gy in 20# often is preferred

Transoral surgery offers most ‘functional outcome’

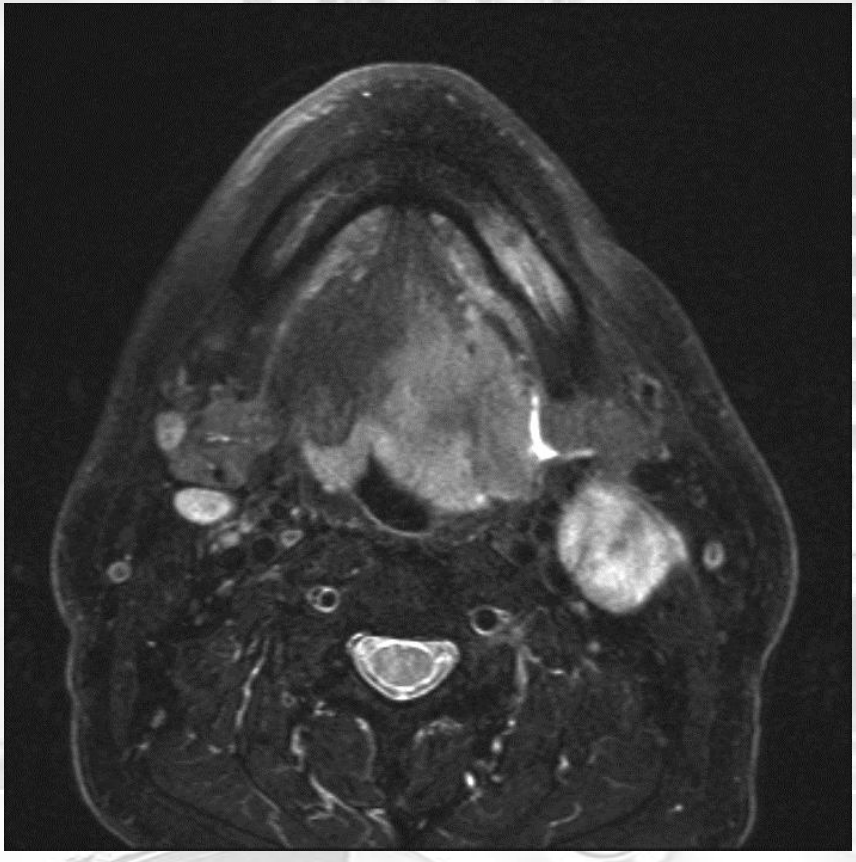
Late stage disease

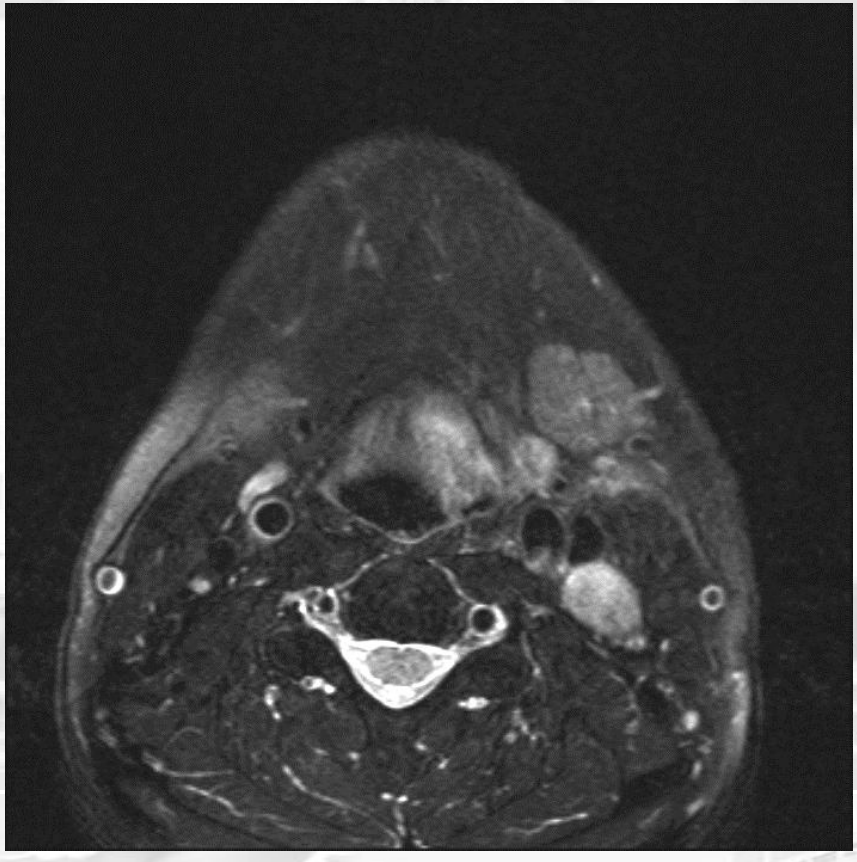
- Primary surgery has poor functional outcome
- Selected T3 / T4 disease where clear margins can be achieved and free flap reconstruction possible
- Most patients will not be surgical candidates and be suitable for chemoradiation

Video 3

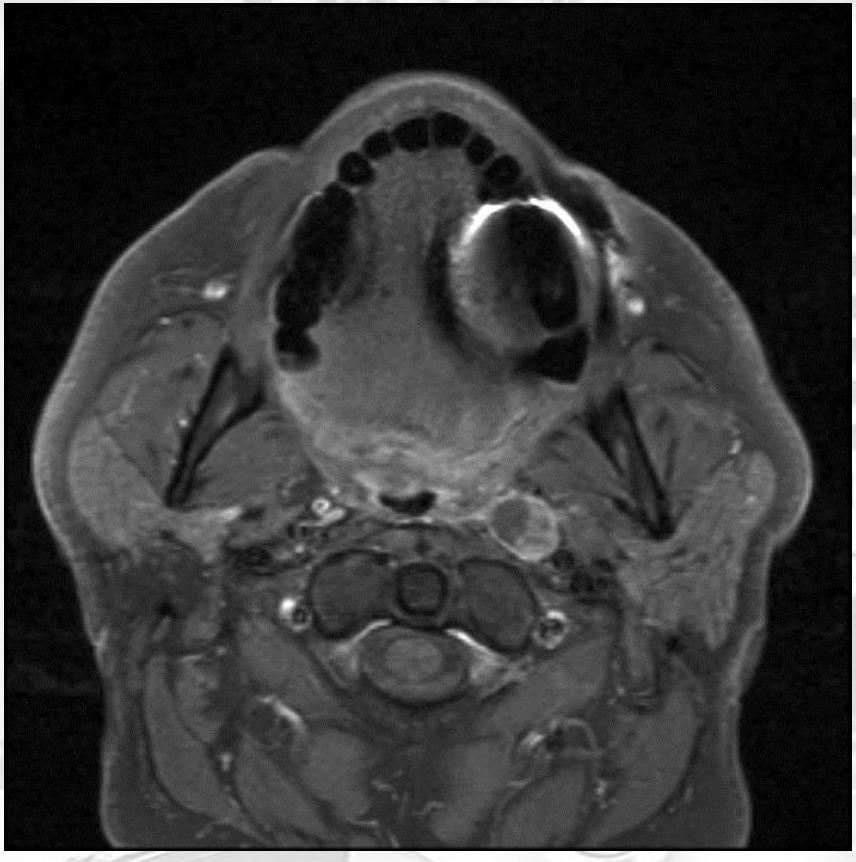
Video 4

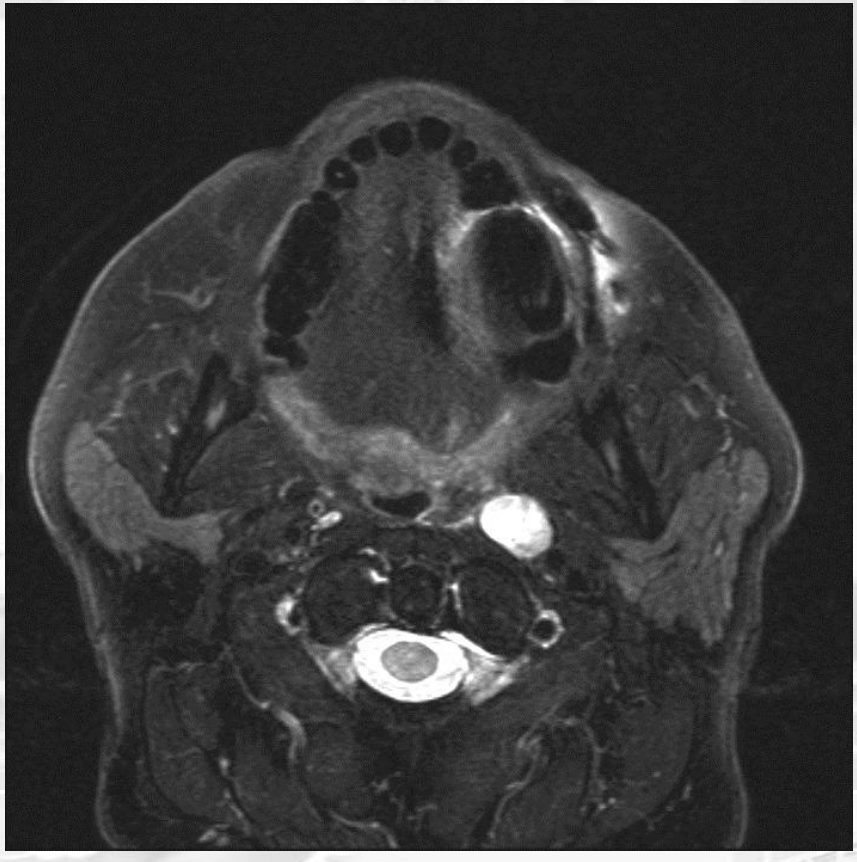
Surgical access to the retropharynx is poor





Beware the RP node





Transoral Robotic Surgery (TORS)

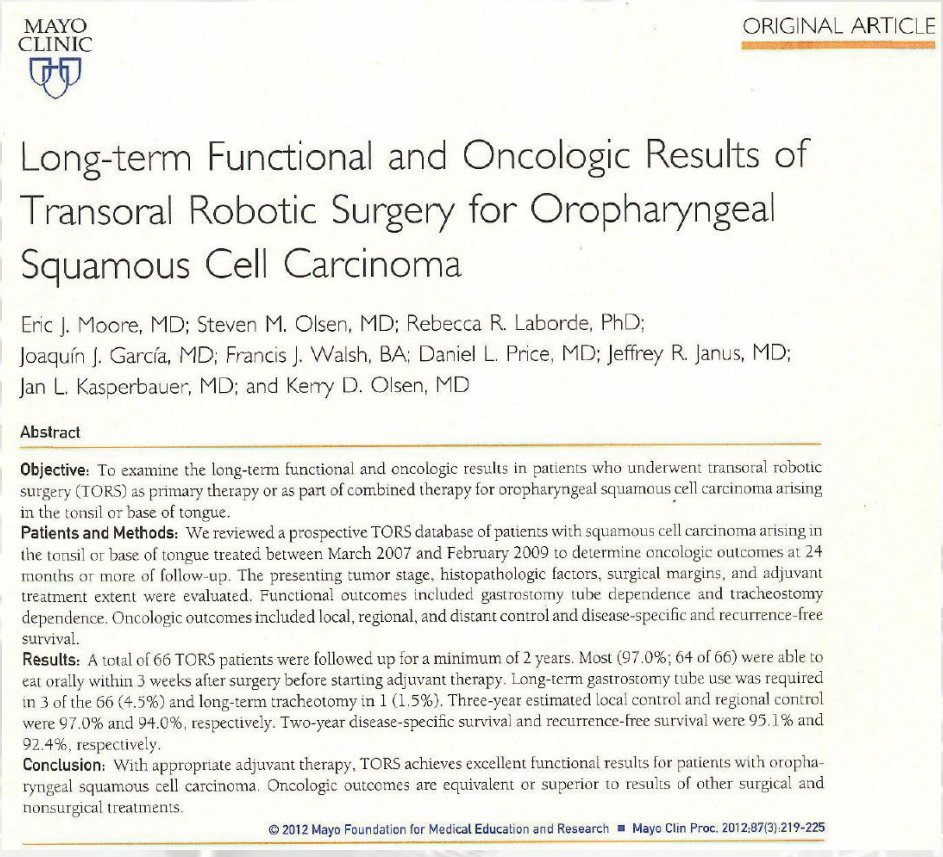
- Developed by Weinstein and O'Malley in Philadelphia

Video 5

Transoral Robotic Surgery (TORS)

Benefits:

- 2 year disease-specific survival = 95.1%
- 2 year recurrence-free survival = 92.4%
- 97% of patients able to eat within 3 weeks
- 4.5% permanent G-tube; 1.5% long term tracheostomy
- 77.3% had pathological stage IV disease!



MAYO CLINIC

ORIGINAL ARTICLE

Long-term Functional and Oncologic Results of Transoral Robotic Surgery for Oropharyngeal Squamous Cell Carcinoma

Eric J. Moore, MD; Steven M. Olsen, MD; Rebecca R. Laborde, PhD; Joaquín J. García, MD; Francis J. Walsh, BA; Daniel L. Price, MD; Jeffrey R. Janus, MD; Jan L. Kasperbauer, MD; and Kerry D. Olsen, MD

Abstract

Objective: To examine the long-term functional and oncologic results in patients who underwent transoral robotic surgery (TORS) as primary therapy or as part of combined therapy for oropharyngeal squamous cell carcinoma arising in the tonsil or base of tongue.

Patients and Methods: We reviewed a prospective TORS database of patients with squamous cell carcinoma arising in the tonsil or base of tongue treated between March 2007 and February 2009 to determine oncologic outcomes at 24 months or more of follow-up. The presenting tumor stage, histopathologic factors, surgical margins, and adjuvant treatment extent were evaluated. Functional outcomes included gastrostomy tube dependence and tracheostomy dependence. Oncologic outcomes included local, regional, and distant control and disease-specific and recurrence-free survival.

Results: A total of 66 TORS patients were followed up for a minimum of 2 years. Most (97.0%; 64 of 66) were able to eat orally within 3 weeks after surgery before starting adjuvant therapy. Long-term gastrostomy tube use was required in 3 of the 66 (4.5%) and long-term tracheotomy in 1 (1.5%). Three-year estimated local control and regional control were 97.0% and 94.0%, respectively. Two-year disease-specific survival and recurrence-free survival were 95.1% and 92.4%, respectively.

Conclusion: With appropriate adjuvant therapy, TORS achieves excellent functional results for patients with oropharyngeal squamous cell carcinoma. Oncologic outcomes are equivalent or superior to results of other surgical and nonsurgical treatments.

 ■ Mayo Clin Proc. 2012;87(3):219-225

Transoral Robotic Surgery (TORS)

But:

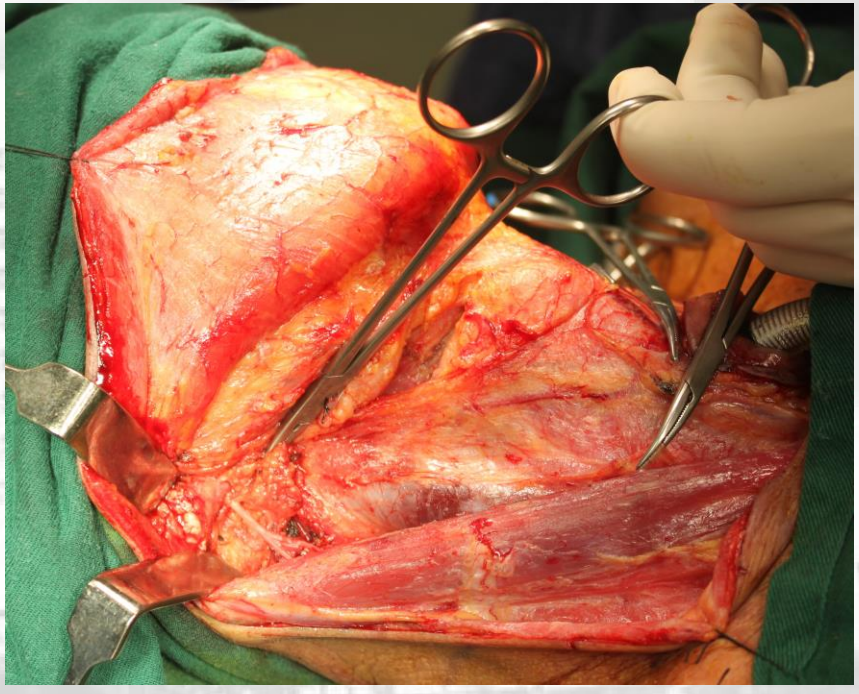
72.1% were HPV+ve

Complications in 7.6%

21.2% had post-op RT and 62.1% had post-op CRT

Neck dissection

- 10–31% of T1-2 N0 will have occult nodal disease
- Contralateral neck should be treated in tumours approaching midline
- Evidence suggests dissecting levels II - IV and possibly level I
- Level IIb need <u>not</u> be dissected, if no findings pre-operatively of level IIa disease

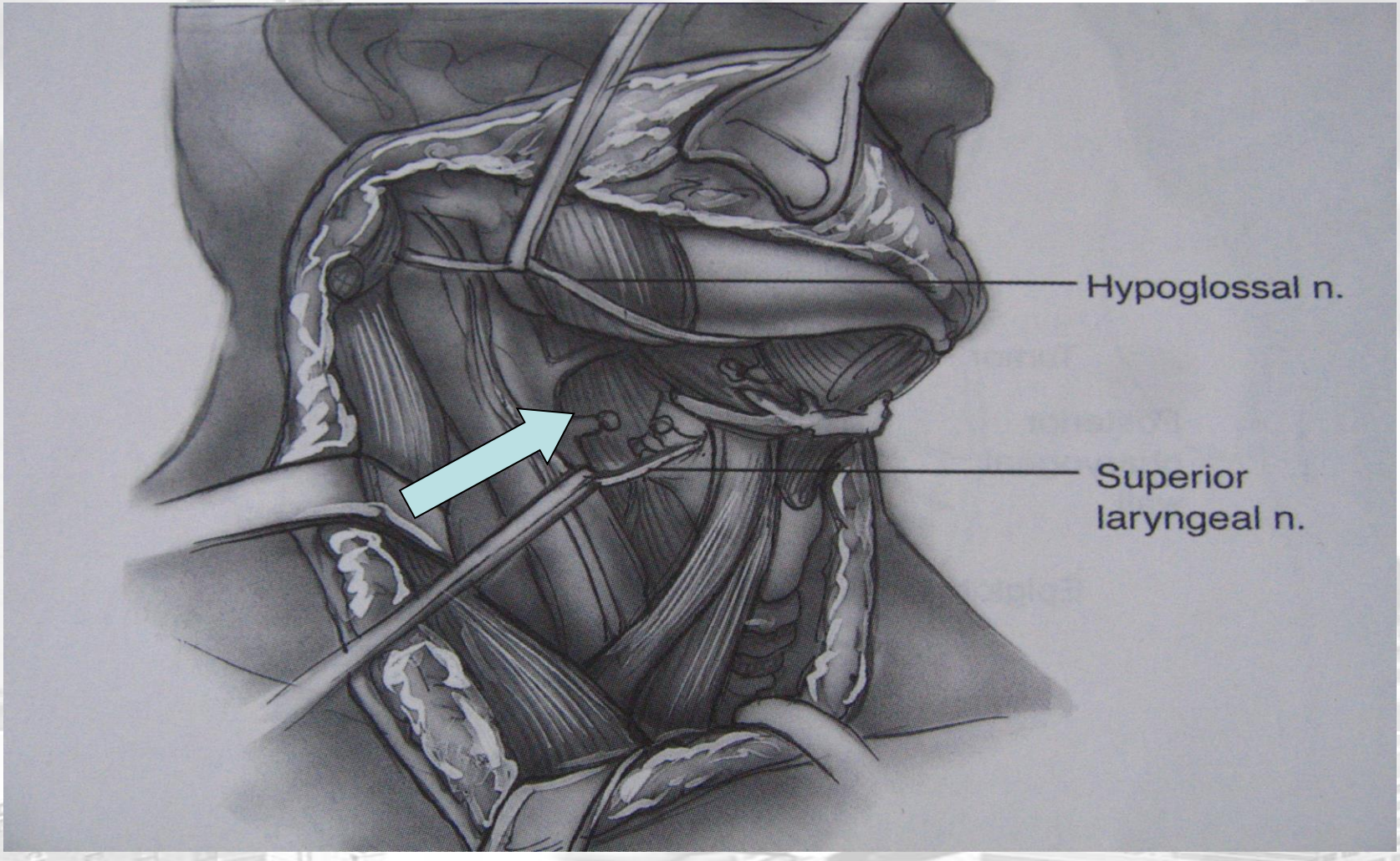


Synchronous neck dissection carries the risk of fistula formation

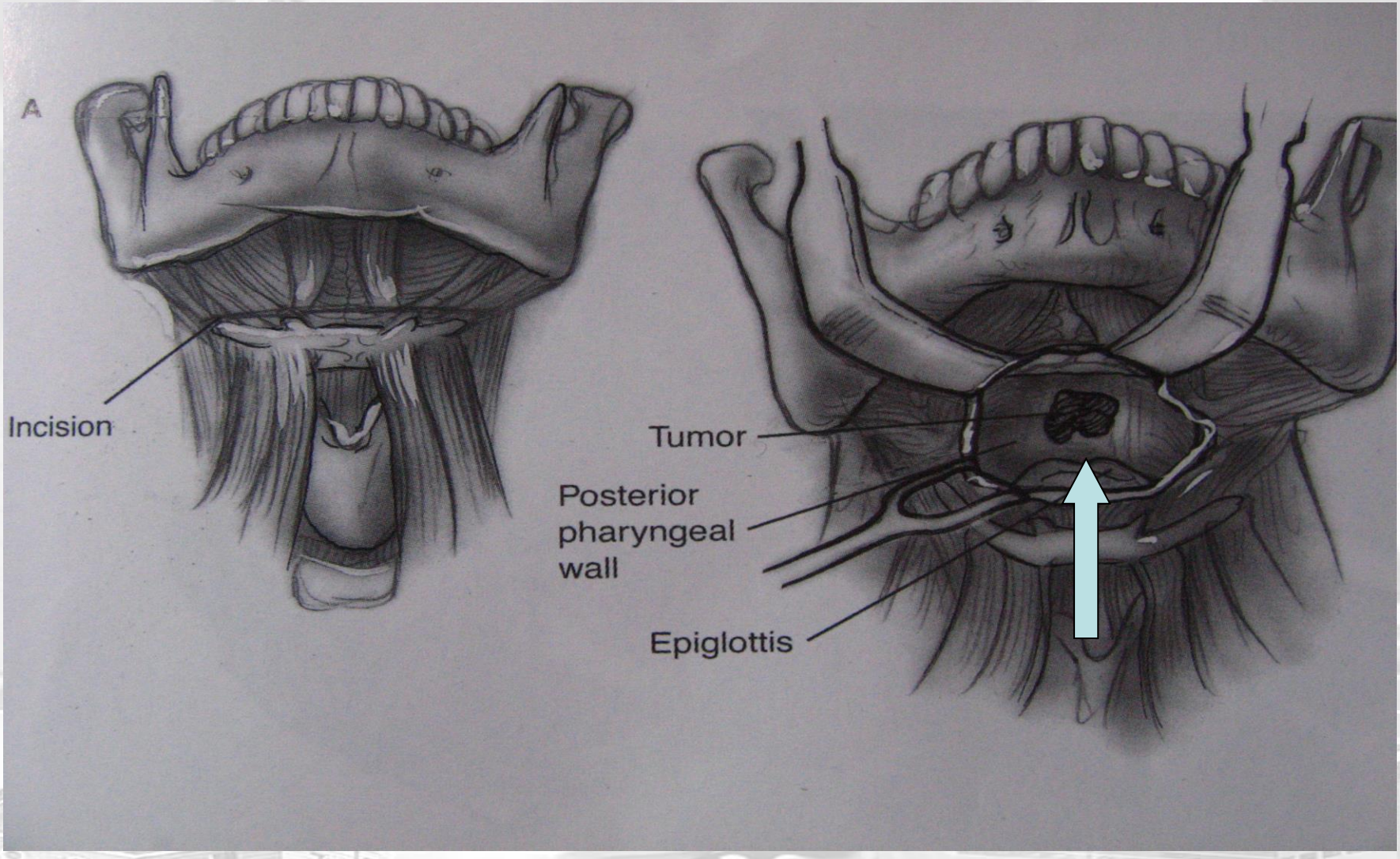
Conventional 'open' approaches

- Transpharyngeal
  - Lateral pharyngotomy
  - Suprahyoid pharyngotomy
- Transmandibular
  - Labiomandibular glossotomy
  - Mandibulotomy (mandibular swing)
  - Mandibulectomy

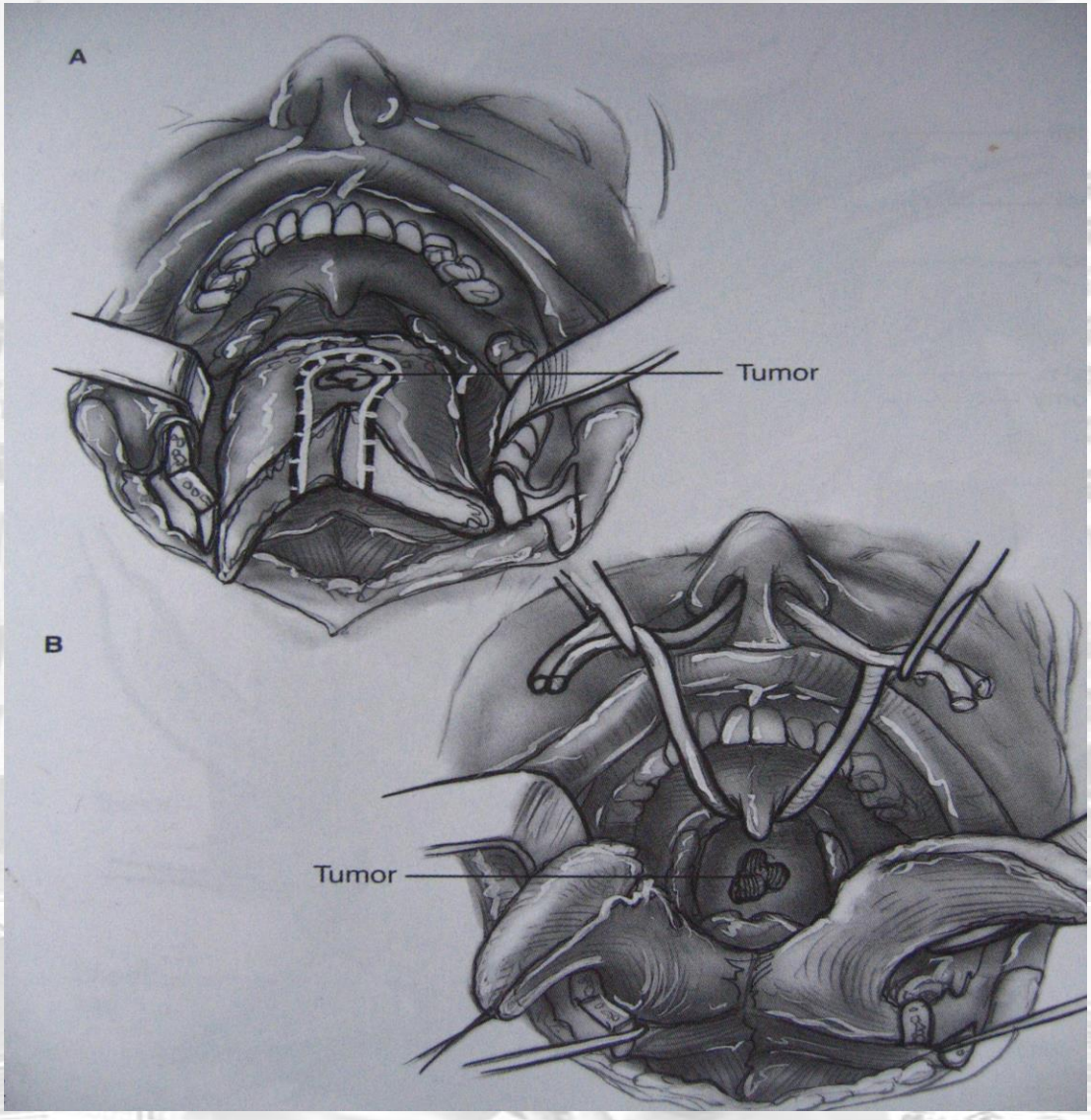
Open approaches



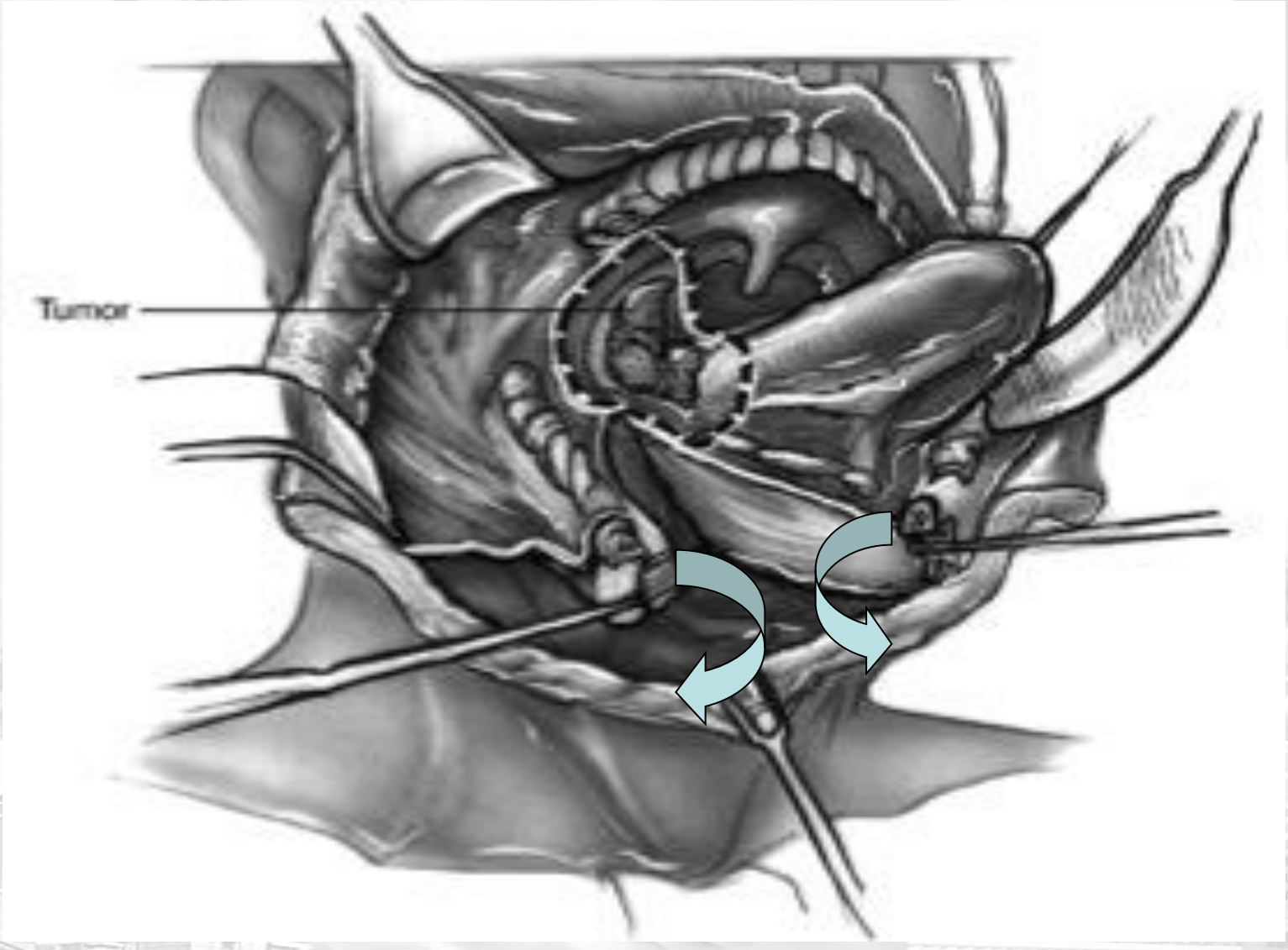
Open approaches



Open approaches

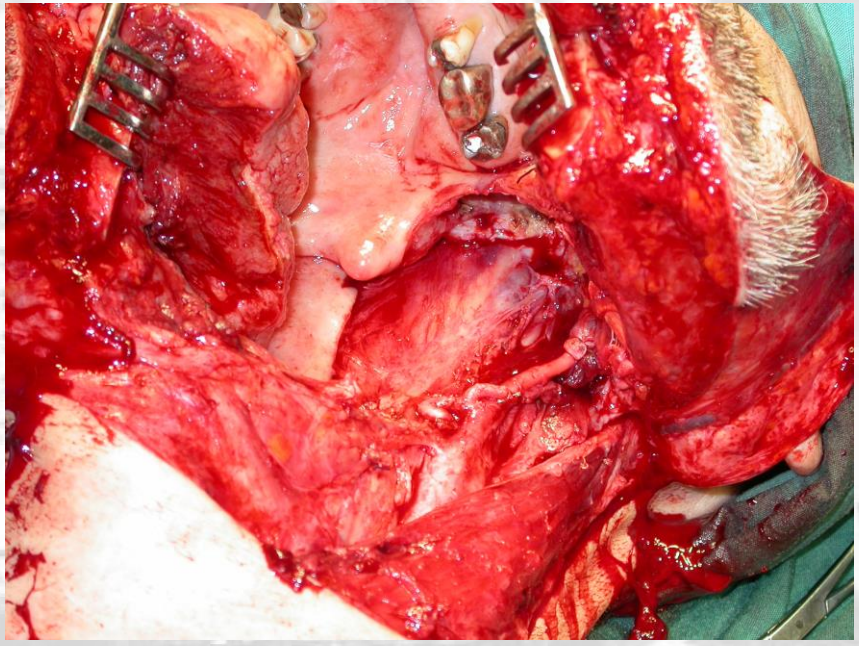


Open approaches



Salvage surgery

- Salvage surgery has 21% 5 year disease-free survival
- Complication rate was high at 40% - including carotid rupture
- On multivariate analysis, tumour size and disease-free interval were main prognostic factors



Salvage surgery after radiotherapy for oropharyngeal cancer. Treatment complications and oncological results. Righini CA, Nadour K, Faure C, Rtail R, Morel N, Beneyton V, Reyt E. Eur Ann Otorhinolaryngol Head Neck Dis. 2012 Feb;129(1):11-6. Epub 2011 Nov 21

Thank you

Questions?