Unknown Primaries of the Head & Neck – The Role of PET CT

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Lecture goals:

- **Diagnostic** options in evaluation of primary occult head & neck carcinoma

- Advantages and limitations of PET CT in **diagnostic** evaluation of occult head & neck carcinoma
Carcinoma of unknown primary – (CUP syndrome)

- Cervical carcinoma with no apparent primary
- 3-5% head and neck malignancies
- 2/3 SCCA
- Non-SCCA commonly located outside head & neck (20%)

- Improved survival rates if identified
- Identification of primary changes therapeutic planning
- Less morbidity
- Many proposed diagnostic algorithms
Conventional Evaluation

- Complete H & P
- Thorough head & neck exam (NPL & Palpation)
- CT/MRI
- Rigid Pan endoscopy
- Blind biopsies
  - Tongue, Hypopharynx, Nasopharynx
- Tonsillectomy
  - Unilateral vs. Bilateral
- Overall detection rate approximates 50%
PET - Story of Controversy

- Increased cost
- Access
- Positive after blind biopsies
- Delay of treatment
- Small size of primaries

- High false positive
  - 1999, WF, Cancer
  - 2012, UK, Clin Onc

- Therapeutic dilemma
  - Which algorithm?
PET advantages

- Identifying occult primary cancers
  - Reduce extent of endoscopy
  - Tumors outside of head & neck
- Sensitivity/Specificity
  - Better than MRI or CT alone
  - Improved NPV (PPV?)
- Improved tumor staging
  - Upstage
- Identification of synchronous lesions
  - Better than panendoscopy?
- Treatment implications
  - Radiation fields
  - Fractionation
PET vs. PET CT

- PET fused with CT is superior
- Higher overall detection rates for occult primaries (55% vs. 30%)
- Improved positive predictive value
- Better anatomic delineation
Summary

- Improved detection with PET (37.5% - 11%)
- Improved therapeutic planning
  - Better overall 5 year survival
  - Less morbidity
- Greatest yield
  - H&P + Head & Neck exam
  - CT/MRI
  - PET
  - Panendoscopy w/biopsies
  - Bilateral tonsillectomy
Immunohistochemistry

- p16 (marker for HPV)
  - oropharynx
- Cytokeratins
  - 10 in oral cavity
  - 19 pharynx/larynx
- Testing FNA results
  - HPV and EBV
TLM & TORS

Washington University
(STL)

- TLM for detection
  - 94% vs. 25% (EUA)
- Immediate resection
- Improved 5 year DFS
  - 100% vs. 44%

University of Michigan

- TORS for inspection of the tongue base
- Case report
- Dx. and Treatment at same time
The future

- Increased knowledge of occult sites prior to panendoscopy
  - FNA, immunohistochemistry, imaging
- Ability to treat and diagnose at same time
  - TORS/TLM
- Improved overall survival for patients
- Less morbidity of treatment
  - Surgery/Radiation/Chemo
Thank You.
References

References


References


5. Eur Arch Otorhinolaryngol. 2010 Nov;267(11):1653-5. The real additional value of FDG-PET in detecting the occult primary tumour in patients with cervical lymph node metastases of unknown primary tumour. de Bree R.


