Management of Inverted Papilloma

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Disclosures

Patent Pending
– 61/624, 105; Sinus diagnostics and therapeutics
Siesta Medical, Apnicure
– Stock holder, OSA device

Overview

• Management and decision making
• Open versus endoscopic management
• Endoscopic techniques
• Conclusion

Inverted Papilloma

• Benign Nasal Epithelial Tumor
  – Described by Ward in 1854
  – Invasiveness described by Ringertz in 1938
  – Uncommon tumor ~ 0.6 cases / 100,000 population
  – Associated with HPV 11, 16, 18 in 30/38 cases Zhou 1997
  – HPV associated with SCCa Katori 2005
• Characterized by
  – Tendency to invade bone
  – Tendency to recur
  – High incidence of Squamous Cell Ca ~ 13%
• Be suspicious of any unilateral process in the sinuses!!
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Inverted Papilloma - staging

T1 Confined to the nose without sinus extension
T2 Involving the OMC / medial maxillary sinus / ethmoid
T3 Involving other areas of maxillary sinus, sphenoid and/or frontal sinus
T4 Extranasal/extrasinus involvement (e.g., orbit, intracranial, pterygomaxillary space or any malignancy)

Krouse Laryngoscope 2000

Management of Inverted Papilloma

- What needs to be done to treat this tumor?
  - Resection of tumor including the tumor base
  - Removal of bone, or burring base
  - Currently, no medical management strategies are available
  - Radiation therapy can be considered in
    - Tumors with malignant transformation Gomez AJO 2000
    - Mendenhall AJCO 2007
    - Incompletely resectable tumors
    - Multiply recurrent tumors

Evolution of Surgical Approach

- Transnasal approaches resulted in a high recurrence rate
  - up to 75% for “polypectomy”
  - wide local excision was recommended Hyams AnnORL 1971

- Radical surgery was gradually replaced by more tailored approaches Lawson Laryn 1983

- Medial Maxillectomy was recommended through 1990 Myers Laryn 1990
Surgical Management

- Open approach advantages
  - Possibility for en block resection (not always realized!)

- Access to areas not well instrumented endoscopically

- Anterior Maxillary Sinus
Surgical Management

• Open approach advantages
  – Access to areas not well instrumented endoscopically
    • Region of the nasolacrimal duct

Lateral Frontal Sinus – Pre-op
Lateral Frontal Disease – Post-op

Surgical Management

- How do you decide what resection to do? PE/imaging
- What approach to use? Tumor base access / Surgeon pref

Results of Open and Endoscopic Approaches

- Are recurrence rates comparable?
  - 160 patients reviewed 5.2 year follow up
  - Endoscopic recurrence rate 12%; open 18%
  - Involvement of maxillary sinus floor and lateral recess required additional sublabial exposure
    (Lawson Laryn 2003)

- What happens to patients with recurrence?
  - 51 cases reviewed mean follow up 30 months
  - 7 recurrences; 4 definitively managed in office, 3 in OR
  - All free of disease after follow up (Kaza and Casiano AJR 2003)

Endoscopic Approaches

- Improved precision for resection of involved areas
- Realization that site of attachment may be small and other structures can be spared
- Greatly improved visualization to determine site of attachment before resection is complete
- Improved follow up in the office to detect and resect recurrences early
Targeted Approach to Base of Lesion

• CT scan correlates to endoscopy, with R mm IP

Targeted Approach to Base of Lesion

• Improved precision in resection of involved areas

Targeted Approach to Base of Lesion

• Preservation of periorbita and resection of tumor base

Targeted Approach to Base of Lesion

• Extent of resection may be deceiving on imaging
Targeted Approach to Base of Lesion

• Without removing tumor bulk, you may miss the base!

Orbital floor
Site of attachment

Medial
Lateral

Targeted Approach to Base of Lesion

• Site of attachment is small

Targeted Approach to Base of Lesion

Extended Frontal Approach Inverted Papilloma

• Improved visualization versus open approach
Targeted Surgery for Difficult to Reach Areas

- 60 year old man with left nasal obstruction
- Referral from allergist for + CT scan
- Biopsy x 2 inflammatory
- CT and MRI done…
Endoscopic Surveillance for Early Detection

Surgery in 2 stages

- Defines the tumor and assists planning
  - First surgery resects tumor bulk and identifies attachment
  - If easily resectable, surgery is completed

- Pathology is final – SCCA or benign IP

- If open approach is needed - plan definitive procedure at a later time, typically 6 weeks

Staging surgery

Endoscopic appearance does not shed light on approach

Staging surgery

- CT scan helps modestly in guiding surgery
Staging surgery

- Use of microdebrider reduces bulk of papilloma

Staging surgery

- Make a difficult case into an easy case!

Staging surgery

- Attachment point focal area of orbital wall

Staging surgery

- 6 weeks later, resection in OR of residual papilloma
Conclusion

- Inverted papilloma of the nose and paranasal sinuses can be resected with low incidence of recurrence
- Endoscopic approaches allow for reduced morbidity
- Endoscopic visualization of the attachment is superior to open techniques, in my opinion
- Improved instrumentation and techniques will continue to evolve