iPad in Otolaryngology
Changing the way we learn, teach, and collaborate

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Grand Rounds Presentation
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Outline

• iPad background
• Application review
• Accessories
• Demonstration of applications
iPad

• first released in 2010
• development began in early 2000’s
• marketed as a new device, larger than an iPhone, smaller than an iMac, with many of the capabilities of both
Types of iPad

• iPad mini in 16GB, 32GB, and 64GB (7.9in display)
• iPad 2 in 16GB (9.7in display)
• iPad with retina display in 16GB, 32GB, 64GB, and 128GB (9.7in retina display)
Where are we seeing the iPad in the hospital?
On the wards...
at the bedside...

in the clinics...
in the operating room
How can we use the iPad in Otolaryngology

- Medical education
- Patient education
- Productivity
- Collaboration
American Academy of Otolaryngology
Advantages

- Institutional library
- Full articles
- Specialty directed
- User interface
Disadvantages

• New article availability
• Library journals
• No way to directly download articles
E-PIMP

- Question bank
- Organized by topic
- Free application
СМHB
• Head and Neck tumor
• Thyroid and parathyroid cancer
• Palliative and supportive care
• User friendly
Otolaryngology Call Guide
• Extensive list of problems
• Initial emergency department workup
• Easy to use
• Internet connection

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Background: This is more common in young to middle age patients. The disease begins in a crypt on the tonsill when bacteria become sequestered off which then becomes infected and spreads. The peritonsillar space is one of the potential spaces in the head and neck with the parapharyngeal space adjacent. With a parapharyngeal abscess there is often limited range of motion of the neck, which should not be present in a peritonsillar abscess.

What to do when called:
1. Decongest 10 mg IV (unless they are a diabetic) to help with inflammation and improve trismus.
2. Cefazolin 600 or 900 mg IV IV.
3. 1 liter bolus of normal saline.
4. Have 11 blade, face up, Hurricane spray (benactinic), 1% lidocaine with epinephrine 1:100,000, two 3 cc syringes, 1 ½" length 25 or 27 gauge needle, 18 gauge needle.
5. Tongue depressor.
6. Ask if there is a CT. It is a clinical diagnosis but a CT can help guide your therapy.
7. Ask for a suction device to be at the bedside.

Signs/symptoms: Sore throat, trismus, orula deviation away from the affected side, odynophagia causing anorexia, difficulty tolerating their own secretions, bulging tonsil, unilateral edema, hoarse voice. A classic history is a sore throat for more than 1 week which worsens with swallowing.

Setup: You need good light (headlight), examine the mouth to look for signs above, assess for difficulty breathing from enlargement.
1. Sit the patient upright to prevent aspiration.
2. Give the patient Yankauer suction to hold (this is especially important once you use Hurricane spray which blunts the gag reflex).
3. Anesthetize with Hurricane spray (this is optional as it has minimal effect and blunts the gag reflex which can be dangerous).
4. Inject the infected area with 1% lidocaine with epinephrine.
5. The biggest concern during this procedure is the internal carotid artery. As long as you stay medial to the molars, you should avoid this structure but older patients and those with vascular disorders may have a medialized internal carotid artery. An aneurysm may also medialize the carotid artery.
6. Some people recommend using the 19 gauge needle to aspirate pus and better localize the cavity, but this is often a dry tap and most people will still incise regardless of the results of the aspiration. The landmark to incise is in line with the molar and at the level of
• Similar to ENT call guide
• Lacking in content compared to ENT call guide
AO Surgery
• Interactive learning application
• Maxillofacial section
• User friendly
• Unique application
• Illustrations
• Library book access
• Limited Otolaryngology books available
• Registration
• Internet connection
Patient education
Advantages

- Interactive
- Helps explain common conditions
- Email, Print
- User interface
Advantages

- Import pictures
- Save illustrations
Disadvantage

• No way to communicate with EMR
• Time consuming
Luma ENT
Productivity

"Just measuring your job performance..."
GoodReader
Advantages

- File storage and organization
- Efficient large file management
- Annotate
- WiFi file transfer
- Cloud synchronization
Disadvantages

• User interface
• Complicated program
• Create and edit Office documents

• Syncs with cloud applications
iWork
Note Taking Applications

Notability
• Write, type, and Record

Notability helps you...

- write
- type
- record &
- organize

... your notes.

THE HUMAN EYE

<table>
<thead>
<tr>
<th>NAME</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cornea</td>
<td>The clear outer part of the eye’s focusing system.</td>
</tr>
<tr>
<td>Retina</td>
<td>Light-sensitive tissue lining at back of eye.</td>
</tr>
<tr>
<td>Vitreous humor</td>
<td>Clear gel filling inside of eye.</td>
</tr>
<tr>
<td>Pupil</td>
<td>The opening at center of iris.</td>
</tr>
<tr>
<td>Iris</td>
<td>Colored part of eye. Regulates amount of light incoming</td>
</tr>
<tr>
<td>Lens</td>
<td>Clear part, behind iris helps focus light on retina.</td>
</tr>
</tbody>
</table>

choroid  sclera  retina

lens

cornea  iris  optic nerve

aqueous humor  vitreous humor

pupil
Collaboration

- Dropbox
- Google Drive
Dropbox
• “Cloud” storage

• Primary storage
Advantages

• User friendly
• Application integration
• Widely used application
• File sharing
Disadvantages

- Internet connection
- Only 2GB storage with free account
- Internet data security
Google Drive

- 5GB free storage
- Synchronizes with Google docs
Accessories

- Keyboard
- Cover
- Stylus
Advancements
New Applications

• iMedicalapps.com
• Healthcare professional section of app store
Demonstration