TORS & Supraglottic Laryngectomy

Rohan R Walvekar, MD
Associate Professor
Department of Otolaryngology Head & Neck Surgery
LSU Health Sciences Center, New Orleans

Disclosure
Dr. Walvekar,
I have the following relationship(s) with commercial interests.

Hood Laboratories – Rec. Royalties
Cook Industries – Rec. Honoraria
Medtronic – Rec. Honoraria

RELATIONSHIP (Consultant)

A commercial interest is any entity producing, marketing, re-selling, or distributing health care goods or services consumed by, or used on, patients.

Access!

The da Vinci Surgical System

Otorhinolaryngology: Head and Neck Surgery at PENN
Excellence in Patient Care, Education and Research since 1870
The Robotic Bedside Cart

Feyh-Kastenbauer (FK) retractor
OR
FK-WO retractor

The Operating Room Setup
as if the surgeon’s hands are miniaturized and working in the mouth”

ROBOTIC B.O.T RESECTION
Traditional Non-Robotic Transoral Surgery

- Can sometimes be awkward technically
- Microscopic optics are outside the oral cavity
- Transoral laser offers a line of sight beam that cannot turn corners
- Challenges of TLM are limited working space requiring multiple types of retractors to get exposure
- Compartment surgery

TORS - Advantages

- Optics provide a three dimensional image
- Ability to magnify image from a distance to optimize working space
- Tips of robotic instruments are “wristed” so surgeons hand movements are scaled down to the robotic instruments with “tremor filtration”
- This makes the experience similar to the feel of open surgical
- Assistants can visualize and a participate more actively in the surgical experience.
- Disadvantages: Lack of haptic feedback

Indications

- T1 T2 lesions of the oropharynx
  - Tongue base
  - Tonsil
  - Lat pharyngeal wall
- Benign and malignant lesions of the oral cavity
  - Pathologic tonsils
  - Obstructive sleep apnea
- Supraglottic and hypopharyngeal tumors
- Robotic thyroid surgery
- Para-pharyngeal space tumors
- TORS Submandibular Stones and Ranula* - LSU

Value of TORS for the Patient: Efficacy / Invasiveness

- Chemoradiation
- TORS
- Open Surgery
- Patient’s Comfort Zone
- TORS
- Chemoradiation
- Invasiveness
- Efficacy

* LSU Otorhinolaryngology: Head and Neck Surgery at PENN Excellence in Patient Care, Education and Research since 1870
Current trends in initial management of laryngeal cancer: the declining use of open surgery

Carl E. Silver · Jonathan J. Brittle · Ashok R. Shaha · Alessandra Rinaldo · Alito Fertita

• Early stage SGL cancer – TLM comparable to Open Surgery
• Late stage SGL cancer - concurrent CRT
• In general, surgical modalities preferred for SGL tumors; pre-epiglottic space involvement
• Robotic surgery could overcome some of the technical limitations of TLM

Clinical outcomes of transoral robotic supraglottic laryngectomy

Eswar Ozer, MD · Banica Alvarez, Kiran Kakarala, MD, Kasim Durmus, MD, Theodoros N. Teknos, MD, Ricardo L. Carrau, MD

• 13 patients
• Majority T2 tumors (8/13)
• Negative margins in 100 %
• Tracheostomy and PEG dependence 1/13
• Adjuvant Radiation 2/13
• Tumor sub-sites
  • Epiglottis
  • AE fold

Cost comparison of open approach, transoral laser microsurgery and transoral robotic surgery for partial and total laryngectomies

Manon Donbrée · Ralph Croft · Georges Lawson · Pascal Janne · Aidenn Castiaux · Bruno Krug

• Actual cost structure of Open – TLM and TOR SGL and TL
• 17 primary activities to which direct cost related were identified
• One-way sensitivity analysis on patient throughput, cost of equipment or op times was performed
• TORS is more expensive than standard approaches; cost driven mainly by purchase, maintenance and use of proprietary instruments
• This was true even when case loads were doubled per year, used shortest operative times.
• TORS cost influenced by equipment

Feasibility of Transoral Robotic-Assisted Supraglottic Laryngectomy

Eran E. Alon, MD · Jan L. Kasperbauer, MD · Kerry D. Olsen, MD · Eric J. Moore, MD

• Robotic SGL feasible and safe
• Potential advantages improved visualization and access
In conclusion

- TORS for Supraglottic tumors is feasible and oncologically sound.
- Success is dependent on patient selection and working within limits of surgeon expertise.
- Surgeons with experience in TLM would be better equipped to make the transition to TORS SGL surgery.
- Open, TLM and TORS approaches are all feasible, TLM and TORS have faster recovery and better functional outcomes.
- Factors impacting future applications of robotic surgery:
  - Cost of Equipment and Training
  - Technology

Future – defined by technology..


Thank You
rwalve@lsuhsc.edu / 412-251-8887
we are not under water anymore!
Thank You

Questions??