TORS: A PERIOPERATIVE NURSING PERSPECTIVE

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DISCLOSURES

I have no conflicts of interest, there are no off-label uses discussed in this presentation. Therefore, I have no disclosures.

OBJECTIVES

1. Identify ideal patients that are candidates for TORS
2. Examine the pre-operative education that will help the patient understand what the surgery and post-op care will entail
3. Discuss common complications and symptom management after TORS
4. Review the oncologic and functional outcomes of TORS
5. Participate in an interactive discussion on TORS as it relates to nursing

OROPHARYNGEAL SQUAMOUS CELL CARCINOMAS

- Oropharynx
  - Soft palate to epiglottis ➔ composed of tongue base, tonsils, & posterior pharyngeal wall
  - Majority are squamous cell carcinomas
- Incidence of diagnosis is rising

WAIT – AREN’T THERE LESS PEOPLE SMOKING? WHY IS THE INCIDENCE OF ORAL CANCER RISING??

Yes, current smoking has declined overall
- In 2005, 21 of every 100 adults smoked (20.9%)
- In 2013, 18 out of every 100 adults smoked (17.8%)
  - Smokers are more likely to be:
    - Men
    - Higher in those living below the poverty level
    - Higher in those living in the Midwest & South
    - Higher among persons with disabilities
  - Aren’t less kids smoking?
  - Yes, cigarette smoking has declined among middle and high schoolers
  - However, electronic cigarettes, hookahs, & smokeless tobacco use has increased

THE ‘NEW’ HEAD & NECK CANCER PATIENT

The demographics of newly diagnosed OPSCCs are evolving to:
- HPV-related (human papillomavirus) related disease
  - HPV serotype 16 and 18, most common 16
  - Younger patients that do not have a significant smoking/drinking history
  - Typically non-smokers, social drinkers
  - Typically from higher socio-economic backgrounds & are educated
  - 20-64 year old white males
Rising at a rate of 4% per year in the US

About 2/3 of all oropharyngeal cancers diagnosed are HPV-related; the other 1/3 related to smoking/alcohol abuse
TYPICAL PRESENTATION OF HPV+ CANCERS

Two common presentations:
1) A symptomatic mass of the tonsil or base of tongue
   May or may not have lymphadenopathy
   Symptoms may or may not include: pain, globus sensation, hemoptysis, voice or swallowing dysfunction
2) An asymptomatic neck mass without a symptomatic primary site
   Present in up to 70% of cases

Next course of action is typically ordering imaging studies (usually a CT scan) and FNA of neck mass (if applicable)
If suspicious or positive for SCC, next course of action is developing a treatment plan.

TREATMENT MODALITIES

HPV+ cancers have significantly higher cure rates than HPV- cancers
As with any cancer, treatment is decided based on tumor staging
Is intent curative or palliative?
- Curative
  1. Primary chemotherapy/radiation therapy
  2. Surgery
     - Traditional open approach
     - Trans-oral surgical approaches
     - Trans-oral robotic surgery (TORS)
  3. Palliation
     - Symptom control

WHAT EXACTLY IS TORS?

TORS uses the da Vinci surgical robot to resect lesions via the mouth
FDA approval was granted in 2009 for treatment of T1 & T2 benign and malignant lesions
Offers access to the oropharynx without the morbidity of open procedures
Achieves excellent oncologic & functional outcomes
Much better visualization and easier learning curve than TLS

RELATIVE CONTRAINDICATIONS FOR TORS

Limitations to intra-oral access (such as trismus)
Anatomical limitations to neck extension
Aberrant carotid artery anatomy
Extensive lesion (ie soft palate involvement) which post resection would impair speech or swallowing
Patient who would likely require chemoradiotherapy secondary to disease staging or extensive neck disease

ABSOLUTE CONTRAINDICATIONS FOR TORS

<table>
<thead>
<tr>
<th>Tumor Related</th>
<th>Non-Tumor Related</th>
</tr>
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<tbody>
<tr>
<td>T4a disease with invasion of mandible, medial pterygoid involvement causing trismus, involvement of intrinsic tongue musculature</td>
<td>Medication contra-indications for anesthesia or surgery (such as anti-platelet therapy)</td>
</tr>
<tr>
<td>Pharyngeal involvement requiring resection of &gt;50% of the posterior pharyngeal wall</td>
<td></td>
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<tr>
<td>Fixation of the tumor on palpation</td>
<td></td>
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<tr>
<td>Invasion lateral to carotid or into pre-vertebral fascia</td>
<td></td>
</tr>
<tr>
<td>Radiological involvement of carotid artery</td>
<td></td>
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<tr>
<td>Unresectable neck disease</td>
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WHY SHOULD A PATIENT CHOOSE TORS VERSUS CHEMOTHERAPY & RADIATION?

Chemoradiation has treatment-related toxicity & long term side effects
- Mucositis
- Keratosis
- Loss of taste
- Tissue fibrosis
- Sticker
- Osteoradionecrosis
- Neuropathy
- Fatigue
- Esophageal strictures
- Renal failure or sepsis (chemotherapy)
- Development of a second primary malignancy
- Other systemic side effects

Organ preservation does not equate to function preservation!
TORS AT OUR INSTITUTION

- Neck dissection
  - Level 2-4 neck dissection
  - Ligation of branches of external carotid artery to decrease risk of post-operative bleeding
- TORS performed one week post neck dissection
  - A dubhoff feeding tube is routinely placed at the end of the operation
  - Patient discharged 1-2 days post-operatively
- Why not do the two operation together?
  1. Risk of intra-operative fistula into the neck

POTENTIAL COMPLICATIONS OF TORS

- Bleeding
- Post-operative hemorrhage can occur early after surgery or can be a late bleed
- Most common reason for readmission
- Neck hematoma s/p neck dissection
- Dental injury
- Temporary lingual or hypoglossal nerve injury
- Dehydration
- Aspiration pneumonia
- Airway compromise requiring temporary tracheostomy (rare)

NURSE DRIVEN PRE-OP PATIENT EDUCATION

Reinforce physician explanations regarding surgery, length of stay, and potential complications to ensure comprehension

Expose patient to post-operative expectations
- Show patient actual Jackson-Pratt drain if having a neck dissection
- Explain how to care for drain
- Patient will get instructions prior to discharge
- Show patient actual Dobhoff feeding tube to be placed in stomach
- Explain routine course of action regarding Dobhoff tube

Hand out an educational folder with information about their diagnosis, surgery, & post-op care instructions. Include HPV information sheet if appropriate.

Discuss general post-op course including lidocaine lollipops.
OTHER PRE-OPERATIVE EDUCATION

Speech-Language Pathologist
- Reviews importance of swallowing after surgery regardless of pain
- Educates patient on ‘routine’ post-op TORS course with regards to SLP involvement
- Aspiration signs & symptoms reviewed
- Encourages patient to minimally swallow saliva to maintain swallowing muscle functionality

Dietitian
- Weighs patient on InBody body composition scale
- Selects appropriate tube feed formula per patient (provided patient will be tube feed dependent)
- Selects appropriate diet supplements if patient is able to eat full liquids or soft foods to minimize muscle wasting/loss

IS TORS JUST USED TO TREAT CANCER?

TORS for Obstructive Sleep Apnea (OSA)
- Indications
  - Patients that fail or cannot tolerate continuous positive airway pressure (CPAP)
  - Moderate to severe OSA based on a formal polysomnogram (sleep study)
  - Abnormal anatomy that would benefit from surgery
- Sleep endoscopy may be performed to assess the anatomical sites of obstruction
- Procedure is a bilateral lingual tonsillectomy
- Additional tissue is removed as needed
- Post-operative management is the same as TORS for cancer
- Continuous pulse ox is recommended
- Repeat sleep study done 3-6 months after healing is complete
- Surgical response vs. surgical cure

~ THE MAIN EVENT ~

SET-UP OF THE OPERATING ROOM

Components of the daVinci surgical robot. Source: www.intuitivesurgical.com

~ THE MAIN EVENT ~
Surgery is over ~ Now what?

Video of TORS surgery

Post-op nursing care after TORS

23-hour observation to in-patient ward
No fluids or NPO for 24 hours

ICE CHIPS/SIPS OF WATER PERMITTED

All patients receive a specific order set that includes:

- Scheduled pain medications
- IV pain meds available for breakthrough pain if necessary
- Patients bring lidocaine lollipops to use, may keep at bedside
- Alternatively, can order viscous lidocaine to swish & spit
- Decadron 8mg IV q8hr x 2 doses
- Head of bed elevated
- Rigid suction set up (yankauer tip)
- Patients often use for managing saliva

Surgery is over ~ Now what?
POST-OP NURSING CARE AFTER TORS

**Nursing Assessment ~ What to look for?**
- Airway edema – at risk for swelling
- Signs/Symptoms
  - Tongue swelling
  - Increased hoarseness
  - Stridor

  **If airway edema is present, what do I do?**
  - Typical management can include:
    - Steroids
    - Heliox
      - Mixture of helium & oxygen gasses which reduce the resistance to flow within the airways and decreases the work of breathing
    - Racemic epinephrine (delivered by aerosol)
    - Possible need for reintubation

**DISCHARGE TEACHING**

Jackson-Pratt (JP) Drain Care
- Nurse teaches patient to milk / strip tubing TID
- Nurse teaches patient to measure output and record amount
- Instructed to call RN:
  - Clotted off/no output
  - Bright red blood in large amounts
  - White milk-like drainage (chyle leak)

Drain packs
- Alcohol pads to aid in stripping the tubing
- 240ml plastic cup to measure output
- Length of oxygen tubing for patient to use as a necklace when showering so that drain does not hang freely and pull at insertion site
- Drain Care instruction guide handout

**Timing:**
- Time to send them home!
DISCHARGE TEACHING

Hydration
- Importance of staying hydrated; patients taught to watch urine and if it becomes dark, start to increase amount of water being administered via dobbhoff tube.
- Patients tend to get wrapped up in being sure that they get in all of their prescribed tube feeds that they often forget about the need for water.

Medications
- Pain medicine
  - Typically given: Percocet
  - Lidocaine lollipops
- Reinforce that the pain gets worse post-op days 2-4 (peaking around day 3) and not to be alarmed, as this is expected.
- stool softener: docusate liquid 100mg BID
- Patient can also use prune juice (no pulp) via dobbhoff tube if preferred
- Miralax also recommended

DISCHARGE TEACHING

Typical post-op surgery instructions:
- Fever is greater than 101.5
- Signs/symptoms of dehydration (dark urine)
- Pain not controlled by prescribed pain medication
- Difficulty breathing, chest pain
- Call on-call provider and proceed to closest ER if experience bleeding of bright red blood over a tablespoon

Outcomes
- Oncologic Outcomes: Oncologic outcomes are equivalent or superior to the results of other surgical and non-surgical treatments.
- Margin status is an important prognostic factor in TORS.
- Achieving negative surgical margins is most important for ultimate disease control.

When is post-operative therapy indicated?
- General indications for chemotherapy include:
  - Radiation
  - Perineural or lymphovascular spread at the primary site
  - Greater than N1 nodal disease
  - Chemotherapy
- Positive margins on final pathology that cannot be re-resected
- Extensive spread
OUTCOMES

Functional outcomes

- Airway function (measured by tracheostomy dependence)
  - Tracheostomy avoided in 70-100% of TORS cases
- Feeding tube (nasogastric and PEG) use varies widely by disease stage & institutional practices
  - Average duration of nasogastric tube usage was 2-13 days
- Dysphagia is the most common impairment in oropharyngeal cancer survivors
  - Swallowing outcomes are highly dependent on baseline function and post-treatment status
  - MOAD scores showed no significant difference at 3 months (TORS patients vs. primary chemoradiation)
  - MOAD scores were significantly better 6-12 months after TORS than the primary chemoradiation group
  - Use of TORS alone had minimal and temporary effects on swallowing
- MDADI scores showed no significant difference at 3 months (TORS patients vs. primary chemoradiation)
  - MDADI scores were significantly better 6-12 months after TORS than the primary chemoradiation group

OUTCOME CONCLUSIONS

- The ability to preserve normal tissue and neurovascular supply using TORS contributes to rapid healing and a return to acceptable oropharyngeal function
- In cancer patients, early studies suggest better long term recovery and morbidity reduction after TORS vs treatment with primary chemoradiation
- Research is being done to see if the use of minimally invasive surgery such as TORS may allow consideration of de-intensification of adjuvant radiation and / or chemotherapy

NURSING IMPLICATIONS

What does this mean for nurses?

- Prepare for more TORS patients!
- Pre-operative nursing:
  - Be sure to educate as much as possible before surgery to adequately prepare the patient and their family
- Post-operative nursing:
  - Fine-tune assessment skills to be on the lookout for any subtle changes
  - Specifically airway edema & hemorrhage
  - Be sure to educate comprehensively in order to properly prepare the patient and family for care at home after discharge

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REFERENCES

REFERENCES

CONTACT INFORMATION
CELEBRATION HEALTH FLORIDA HOSPITAL
The staff is here. The options are vast.

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~ THANK YOU! ~