Microdebrider

In
The Management of
Different Laryngeal Lesions

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Microdebrider

The microdebrider is a powered dissection device with suction assistance. It is designed to minimize trauma to surrounding tissues.
Microdebrider

- **Historical background:**
  - In the early 1990s, used in endoscopic sinus surgery.
  - Newer blades that are longer and have angulated tips have been introduced more recently for laryngeal and tracheal application.

- **Blade tips (skimmer & Tricut)**
  - Blade length 18 to 45 cm
  - Blade diameter 2.9, 3.5, 4.0 mm

Microdebrider

- **Historical background:**
  - In 1999, Myer et al → recurrent respiratory papillomatosis in the larynx.
  - In 2000, Flint et al → non-neoplastic airway lesions, including stenosis, laryngeal mucosal lesions and vallecular cysts.
  - In 2003, Simoni et al → obstructive laryngotracheal tumors.
Our experience

Total excision of laryngeal lesions
- Papilloma 5 cases
- Valleeclar cysts 3 cases
- Laryngeal Benign tumors 3 cases

Tumor debulking 17 cases
Posterior cordotectomy 5 cases

Settings

- The oscillating speed, 500 rpm for mucosal lesions & 3000 rpm for bulky tumor lesions in the larynx.
- The cutting tip engaged the free edge of the lesion under vision.
- Saline irrigation with suction facilitates dissection with clearance of resected tissue.
- Haemostasis: Pledgets soaked in adrenaline or a bi- or monopolar suction device.
Recurrent Respiratory Papillomatosis

- 5 cases
- Anesthesia
- Complete removal of the lesion
- Bleeding is minimal

Vallecular Cysts (3 cases)
Benign Tumors (3 cases)

Benign Tumor
Posterior Cordectomy

- 5 cases
- Anesthesia
- Bleeding is minimal
- No edema
- Smooth postoperative

Obstructive laryngeal Carcinoma

- Tracheostomy
- Emergency Laryngectomy
- Debulking
Obstructive laryngeal Carcinoma

- Tracheostomy
- Emergency Laryngectomy
- Debulking

- Wound infection, pneumothorax, tube obstruction, or displacement.
- Postlaryngectomy stomal recurrence.
- Transect malignant tissue in extra laryngeal spread
- Contaminated field for future total laryngectomy.

Obstructive laryngeal Carcinoma

- Total laryngectomy done within 24 hours of admission for a previously undiagnosed and untreated malignancy.

  - Reliance on frozen-section pathology
  - Lack of prior workup
  - Patients are ill prepared nutritionally and psychologically for its consequences.
  - No survival advantage when compared with staged laryngectomy.
Obstructive laryngeal Carcinoma

- Tracheostomy
- Emergency Laryngectomy
- Debulking

Reduction of tumor volume, safe extubation following surgery and discharge after an adequate postoperative observation period.

Obstructive laryngeal Carcinoma

- Tracheostomy
- Emergency Laryngectomy
- Debulking

- Electrocautery → edema → tracheostomy.
- Cold steel → bleeding from the raw tumor surfaces → tracheostomy
- CO₂ laser
  - It requires specialized laser equipment, trained staff and safety measures which may not be available in the acute setting.
  - Laser fires
Debulking With Microdebrider

Airway patency was first secured through:
Microlaryngeal endotracheal tubes with small internal diameter ID from 4.0 to 6.0 mm
- Ordinary laryngoscope (Mackintosh)
- Awake intubation using flexible fiberoptic laryngoscope

17 cases
With
laryngeal carcinoma presented with moderate stridor

Debulking With Microdebrider

17 cases
With
laryngeal carcinoma presented with moderate stridor

Preoperative laryngoscopy
Debulking With Microdebrider

- 17 cases with laryngeal carcinoma, patients showed improvement of stridor for 2 to 3 weeks after debulking without need for postoperative tracheostomy.

- Crustations

Pathological assessment of tissues collected by microdebrider

Comparing 2 biopsies
Conclusion

- Use of laryngeal microdebrider is a rapid, feasible and well tolerable tool in the management of obstructive laryngeal lesions.
- It allows successful debulking of laryngeal tumors → preventing tracheostomy in most cases.
- It allows use of angled telescopes → good access to laryngeal lesions that were difficult to reach.
- The use of microdebriders does not preclude the submission of tissue for histological analysis.

Conclusion

- Limitations of laryngeal microdebrider:
  - Lack of histologic margin control.
  - The coarseness of the tools; the blade of 2.9 mm diameter is still too large to be used for most inflammatory glottic lesions.
THANK YOU

Prof. Mohamed Hesham