Endolaryngeal Debulking in a Case of Laryngeal Sarcoma

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ABSTRACT

Introduction: Sarcoma is a rare tumour accounting for less than 1% of all laryngeal malignancies.
Case report: We report a young gentleman who presented with progressively worsening hoarseness of 8 month duration. Examination under anaesthesia revealed a transglottic tumour which was histologically confirmed pleomorphic sarcoma of the larynx. Patient refused tracheostomy, total laryngectomy or chemoradiation. He underwent serial debulking of tumour to alleviate upper airway obstruction.
Conclusion: Serial endolaryngeal debulking of laryngeal tumour is a viable option to avoid tracheostomy but carries its own risks.

KEY WORDS
laryngeal neoplasm, sarcoma, airway obstruction, laryngoscopy, tracheostomy

INTRODUCTION

Laryngeal cancer is the 2nd commonest tumour in otolaryngology after nasopharyngeal carcinoma: Approximately 95% of laryngeal cancers are squamous cell carcinoma (SCC) and majority occur in 60-70 years old: 15-20% sarcomas occur in head and neck region, the para nasal sinuses and the neck are the most frequent sites: Sarcomas account for less than 1% of all laryngeal malignancies. By a wide margin, the chondrosarcoma is the most common laryngeal sarcoma, accounting for approximately 50% of all cases.

CASE REPORT

A 40-year-old chronic smoker was seen in otolaryngology clinic with progressively worsening hoarseness for the past 8 months. There was no breathing difficulty, odynophagia, dysphagia, haemoptysis or chronic cough. No constitutional symptoms were present. He smoked 20-40 sticks of cigarette in a day for more than 20 years. There was no family history of malignancy or pulmonary tuberculosis. He was a very actively travelling entrepreneur and a sole breadwinner to his extended family. He had no medical illnesses previously.

Physical examination revealed a healthy and comfortable gentleman with no stridor. Laryngeal crepitus was intact. There was no cervical lymph node palpable. Flexible Nasopharyngolaryngoscopy (FNLS) scope of the larynx revealed a friable and fungating mass arising from the anterior 2/3 of the left vocal cord with reduced mobility of the vocal cord. Right vocal cord was free from tumour and mobile. Computed tomography (CT) scan concurred with a mass arising from the left vocal cord which has involved the anterior commissure, ipsilateral ventricle with subglottic extension. The left paraglottic space is effaced. No thy cord which has involved the anterior commissure, ipsilateral ventricle with subglottic extension. The left paraglottic space is effaced. No thyroid cartilage erosion was seen. He underwent direct laryngoscopy (DL Scopy) and biopsy and showed a friable, fungating mass arising from the anterior 2/3 of the left vocal cord, involving the ventricle (Figure 1) and extending inferiorly to the subglottis. Tumour was debulked using cold instrumentation and specimen was sent for histopathologic analysis. Microscopically, the tumour consisted of tissue diffusely infiltrated by malignant spindle cells arranged in storiform and fascicles. The malignant cells are highly pleomorphic with elongated to rounded, vesicular to hyperchromatic nuclei, prominent nucleoli and moderate cytoplasm. No squamous component was present and immunohistochemical profiles do not support an epithelial origin of tumour. A diagnosis of pleomorphic sarcoma of the larynx was made. The patient was extubated following the procedure and did not require non invasive or invasive ventilator support.

Patient was informed regarding the diagnosis and options of management including surgery (total laryngectomy and tracheostomy) as well as chemoradiation was given. Following multiple clinic consultations, he refused any open surgical intervention or chemoradiation but persisted to come for monthly clinic visits.

4 months later, he presented with acute stridor and respiratory distress. Emergency tumour debulking was done using microdebrider (Figure 2). Post surgery, he was kept intubated for 24 hours. Following extubation, his respiratory symptoms were alleviated. FNLPs post operatively showed satisfactory airway at the laryngeal inlet. No symptoms of aspiration post surgery and he was discharged home 2 days following the surgery. He was reinforced regarding the need for further definitive management but still refused it. He was kept under close follow up and was advised not to work out stationed. 2 months later he represented with acute stridor and respiratory distress to a district hospital 69 kilometres (one hour drive) away from our centre where he succumbed due to upper airway obstruction.

DISCUSSION

Sarcomas can be divided into 2 types either soft tissue sarcomas or bone sarcomas depending to their site of origin. There is no relation of smoking in developing laryngeal sarcomas.

In laryngeal sarcomas, patient presentations are dependable on the site of the tumour. In this case, patient presented with hoarseness and later developed dyspnea and stridor. This correlates with a glottis tumour with transglottic extension.

Imaging in sarcomas importantly depict the extent of the disease. CT scan is useful in demonstrating bony involvement and tumour calcification. MRI is superior to CT scan in its ability to assess the extent of soft tissue involvement by sarcomas. Imaging can suggest correct diag-
Surgical field. Continuous irrigation and suction of the blades ensure a clear view of excess blood and tissue and can be controlled by a foot pedal. Shave tissue and bone. The tool is hooked up to suction that removes collateral thermal effect. It also provides adequate haemostasis. Extinction in water, which limits soft tissue penetration and minimizes properties for surgery in the larynx because of its high coefficient of extinction in water, which limits soft tissue penetration and minimizes collateral thermal effect. It also provides adequate haemostasis.

Microdebrider is a powered instrument that has a rotary cutting tool commonly used in ear, nose and throat surgeries. It is often used to shave tissue and bone. The tool is hooked up to suction that removes excess blood and tissue and can be controlled by a foot pedal. Continuous irrigation and suction of the blades ensure a clear view of surgical field.

Both of the method can be used in debulking of laryngeal tumours. Microdebrider is more efficient method in removing laryngeal tumor as demonstrated by Patel and Mackenzie reported that in five patients with laryngeal papillomatosis previously treated with CO2 laser, patients reported less post-operative pain and a return to an acceptable speaking voice sooner. The authors found the microdebrider effective, safe and technically an easier alternative to laser for the ablation of laryngeal papilloma. Microdebrider also caused less oedema and less tissue injury compare to laser surgery. Microdebrider also cost less compare to CO2 laser resection.

Role of debulking tumour is to avoid tracheostomy in acute airway obstruction by tumour. By debulking we can acutely stage the patient and plan for definitive surgery.

Endolaryngeal tumour debulking with microdebrider has shown to provide up to 3 months of stable airway in squamous cell carcinoma of the larynx. However, this may be variable with different histopathologic diagnosis and extent of disease. This case demonstrates the variability in frequency of endolaryngeal debulking required. We recommend 2 monthly debulking in sarcomas of the larynx as they behave more aggressively than its squamous cell carcinoma counterpart. Similar endolaryngeal debulking procedures can only be offered to patients who live in close proximity to the hospital for fear of delayed management of life threatening upper airway obstruction.

In our centre, we perform endolaryngeal debulking procedure to avoid tracheostomy in select cases of squamous cell carcinoma of the larynx. The debulking procedure gives adequate time for surgeons, patients and their family to consider definitive surgical management such as total laryngectomy.

CONCLUSION

Sarcoma of the larynx is a rare malignancy. Treatment is total excision of the tumour. There is a role of endolaryngeal debulking of tumour to avoid tracheostomy and as to plan further management with the patient.

REFERENCES


Figure 1. Endoscopic view of the larynx showing a fungating mass (black arrowheads) arising from the left ventricle obscuring view of the right true cord (grey arrowheads).

Figure 2. Final view of the laryngeal inlet following debulking showing a normal right true cord and a significantly improved glottal airway.