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TRACHEAL RESECTIONS IN ADVANCED THYROID MALIGNANCY: OUR EXPERIENCE

Oncology

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ABSTRACT

Thyroid malignancies are mostly locoregional in spread and around 30% of thyroid cancers develop tracheal invasion during the course of disease progression. Identification and management of this problem is of utmost importance as the disease is curable even at this stage and complete excision requiring tracheal resection greatly improves the prognosis and outcome. We report the clinical presentation and successful management of 6 patients over a period of 3 years at a tertiary cancer care centre who underwent tracheal resection for advanced thyroid cancer.

KEYWORDS

Tracheal resection, Advanced thyroid cancer, Thyroid malignancy, Surgery for thyroid cancer

I. INTRODUCTION

Tracheal resections involve removal of part or whole of tracheal cartilage and may involve removal of one or more rings. The tracheal cartilage is removed en bloc with the tumour to satisfy oncologic clearance in case of involvement by tumour. We report our experience with tracheal resection done for advanced thyroid cancer in a tertiary cancer care hospital in the public sector.

II. AIM OF STUDY

To study the clinical presentation, extent of tracheal resection required and postoperative outcome of patients with advanced thyroid cancer

III. MATERIALS AND METHODS

The study was a retrospective analysis conducted at the Department of Surgical Oncology at Government Royapettah Hospital, Kilpauk Medical College, Chennai between August 2011 and March 2014. All patients who had undergone tracheal resection for thyroid cancer were included. The case sheets were retrieved and analysed to determine the clinical presentation, evaluation and surgical management. Post operative outcome during the hospital stay was compared.

IV. RESULTS

A total of 6 patients underwent tracheal resection during the study period. Of them 4 were male and 2 female with average age of 65 years (58-75 years). 3 of these patients had tracheal invasion at presentation (50%) while 3 (50%) developed local recurrence of the disease with invasion of the trachea. All patients with invasion at presentation underwent total thyroidectomy and those with recurrence had completion thyroidectomy, along with tracheal resection and central nodal dissection. One patient underwent functional nodal dissection in addition. In all patients, primary anastomosis of the trachea was possible as less than 3 rings were involved, and prosthesis was not required. Average postoperative stay was 15 days (12-18 days). One patient required prolonged ventilator support due to bilateral vocal cord palsy, which recovered with conservative management. Apart from local wound morbidity which included infection in 2 cases and wound dehiscence requiring resuturing in one patient, no major complications were encountered.

V. TABLE

S. No	Age/ Sex	Clinical presentation	Surgery done
1	63/M	Tracheal invasion at presentation	TT with CND & R FND and tracheal resection
2	60/F	Tracheal invasion at presentation	TT with CND with tracheal resection and primary anastomosis
3	66/M	Tracheal invasion at presentation	TT with CND with tracheal resection and primary anastomosis
4	58/M	Local recurrence with tracheal invasion	Completion thyroidectomy with CND & tracheal resection with primary anastomosis
5	68/M	Local recurrence with tracheal invasion	Completion thyroidectomy with CND & tracheal resection with primary anastomosis
6	75/F	Local recurrence with tracheal invasion	Completion thyroidectomy with CND & tracheal resection with primary anastomosis

VI. CONCLUSION

Tracheal resection is a viable procedure which must be offered to all patients found to have tracheal invasion due to advanced thyroid malignancy as it has a favourable outcome even in older individuals. Tracheal invasion must be suspected in all patients with thyroid cancer who complain of respiratory symptoms or show narrowing of tracheal air shadow on imaging and in all patients with local recurrence and must undergo fibreoptic bronchoscopy as part of the preoperative evaluation.

VII.DISCUSSION

According to literature, thyroid cancers have a 30% risk of tracheal invasion. The risk of adjacent structure involvement is more with increasing age, increasing tumour size, presence of extra thyroidal extension and extra capsular extension in metastatic nodes. The first tracheal resection for thyroid malignancy was reported by Grillo in1965. Since then, several studies have shown completeness of resection to be associated with improved survival and is indicated even in the metastatic setting. The mechanisms for laryngotracheal invasion proposed by Mc Caffrey et al are Involvement of paraglottic space through thyroid ala posteriorly,direct invasion of trachea by paratracheal lymph node,direct invasion of thyroid ala by tumour in superior pole or direct invasion of cricoid or trachea by tumour in the isthmus. Tracheal invasion is symptomatic only in 18% of patients.Dyspnoea occurs only if there is >50% involvement. Hoarseness, hemoptysis may occur. Fibreoptic bronchoscopy reveals submucosal and intraluminal extension. Exact location of tracheal involvement especially proximity to cricoid cartilage can be assessed accurately.Number of rings involved can also be determined and need for prosthesis determined preoperatively.Tracheal resections may be shave resection involving removal of macroscopic disease from the surface of the trachea without a full thickness resection or window resection involving full thickness resection of a portion of the airway. Maximum of one third of the circumference can be removed. Following window resection, reconstruction is done either by sliding tracheoplasty that allows primary repair to be performed free of tension or Flap reconstruction is performed using sternocleidomastoid flap.

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