A Unique Case of a Tracheostomal Recurrence in a Thyroid Carcinoma

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Sir,

A majority of patients with thyroid carcinoma have tumors with a well differentiated histology and an excellent overall prognosis. Aerodigestive tract invasion by well-differentiated thyroid carcinoma occurs infrequently; (6–13 %) such tumors are associated with increased incidences of loco-regional recurrence, distant metastasis, and decreased survival. It is therefore believed that control of locally invasive well-differentiated thyroid carcinoma is an important clinical endeavor [1]. Tracheostomal recurrences have traditionally been described in relation to laryngeal cancers. We present a unique case of tracheostomal recurrence in a patient of thyroid carcinoma, to the best of our knowledge; this is a first of a kind report.

A 50-year-old man initially presented to us in June 1998 with a firm nodular thyromegaly 4×2 cm and a 2×2 left level 3 neck adenopathy with associated hoarseness of voice of approximately 6 months duration. A total thyroidectomy and a partial tracheal resection was performed in view of infiltration of the left lateral wall of the second and third tracheal cartilages. A window tracheostomy was fashioned then with an intention to close it at a later date. A left functional neck dissection was also performed in addition to a central compartment dissection. The post operative histopathology was suggestive of follicular variant of papillary carcinoma thyroid (FVPC) with extrathyroidal spread to the surrounding soft tissues and trachea and metastatic spread in 2 out of the 14 cervical lymph nodes. The tracheal cut margins showed microscopic positivity for tumor; he was hence given adjuvant 60Gy of external beam radiotherapy (EBRT). He was then kept on follow up on eltroxin suppression after ablation of the residual thyroid, the whole body I-131 scan being negative. He was subsequently lost to follow up; the window tracheostomy could not be closed as planned.

Eleven years later he presented to us with an ulcerated nodule of size 5×4 cm at 1 o'clock position of the tracheostoma, gradually increasing over 2 years with occasional bleeding episodes. (Figure 1a) Biopsy from the nodule confirmed it as a Sisson Type 2 tracheostomal recurrence. A CT scan revealed the tracheostomal ulcer infiltrating the laryngeal cartilages and pharynx. (Figure 2a) Chest skiagram revealed multiple bilateral pulmonary metastasis. (Figure 2b) The tracheostomal nodule and the pulmonary lesions were non functional on I-131 scan.

He underwent a total laryngectomy including the tracheostomal recurrence and a pectoralis major myocutaneous flap for pharyngeal closure augmentation. The final histology was consistent with FVPC. (Figures 3 and 4) He is loco regionally controlled and is on follow up on eltroxin suppression for more than 2 years post his salvage surgery.

Keim [2] introduced the concept of recurrence in the tracheostoma as a diffuse neoplastic infiltration, at the junction between the trachea stump and the skin in relation to laryngeal cancers. The true rates of tracheostomal recurrences are unknown because many series classify these as part of local recurrences. A prior tracheostomy has been identified as an important risk factor for tracheostomal recurrences. This is due to the fact that a prior tracheostomy may allow the implantation of viable neoplastic cells from tumor shedding; thereby creating a bed that has an intense inflammatory response which promotes cell adhesion. Many prevention methods have been proposed to prevent tracheostomal recurrences such as lower trachea resection to prevent positive cut margins; a para-tracheal lymph node dissection; avoiding tracheostomies prior to the definitive surgical procedures and incorporation of EBRT [3]. The positive tracheal cut margin in all probability was the etiology for the tracheostomal recurrence in our patient despite the addition of radiotherapy and a paratracheal lymph node dissection.

The surgical options for management of laryngotracheal invasion in a thyroid carcinoma include shave or peeling procedures, partial laryngectomy and total laryngectomy; which are

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Fig. 1 **a** Clinical photograph prior to the salvage surgery, **b** Post operative picture 6 months post salvage surgery

Fig. 2 **a** Axial CT showing the tracheostomal ulcer infiltrating the cricoid. **b** Chest skiagram showing bilateral pulmonary metastasis

Fig. 3 Laryngectomy specimen with tracheostomal ulcer

Fig. 4 H & E- showing follicular variant of papillary carcinoma

to be selected after careful consideration of preservation of laryngeal function as well as complete resection of tumor. Many authors have advocated radical surgery as the best approach for recurrences that are localized and resectable [4]. Progressive tracheostomal obstruction or massive hemorrhage would invariably develop if such stomal recurrences are left untreated, therefore such interventions definitely help improve quality of life and may prolong survival in carefully selected patients.

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