Resection of Unresectable Stage IVB Thyroid Cancer Encasing the Carotid Artery

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Abstract Stage IVB thyroid cancer includes carotid encasement or infiltration of the prevertebral fascia and mediastinal vessels. Stage IVB disease is considered unresectable due to grave consequences of attempting resection. We report a rare case of carotid artery engulfment being resected uneventfully without carotid resection.

Keywords Anaplastic thyroid cancer · Carotid artery encasement · Resection · Total thyroidectomy · Prevertebral fascia · Mediastinal vessels

A 65-year-old lady presented with large nontoxic multinodular goitre (MNG) since 10 years and respiratory distress for 1 month. Computerised tomography showed a large heterogeneous mass and lymphadenopathy encasing the left common carotid artery (CCA) and trachea with extension up to the arch of aorta (Fig. 1). Doppler ultrasound showed normal blood flow at the site of carotid encasement. Through neck approach and sternotomy, total thyroidectomy with left modified radical neck dissection and mediastinal dissection was done. The carotid artery could be freed completely from the tumour and left lymph nodal mass, though it breached the carotid sheath (Fig. 2). Surgery was uneventful and histopathology was papillary thyroid cancer with anaplastic dedifferentiation and 22/44 lymph nodes positive for metastasis. Final diagnosis was T4bN1bM0—stage IVB.

Stage IVB includes a differentiated thyroid cancer (DTC) with either encasement of the carotid artery or infiltration of the prevertebral fascia and mediastinal vessels [1]. In our case, the tumour along with jugular lymph nodal mass had encased the common carotid artery on the left side, though usually structures like the carotid sheath and oesophagus are less vulnerable to invasion. In this case, a long-standing DTC upstaged to anaplastic cancer at the site of invasion might have led to carotid sheath invasion. Traditionally, IVB disease is considered unresectable, though few case reports of aggressive resection with or without neurological sequelae have been reported in past [2]. Though IVB disease is unresectable, careful and meticulous planning

Fig. 1 CT scan of the neck showing the left carotid artery encasement (black arrow down) by tumour mass (white arrow) with tracheal displacement (hollow arrow)

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Fig. 2 Intraoperative view of the carotid artery encasement (*black arrow*), sternotomy wound (*white arrow*), vagus nerve and innominate vein (*hollow arrow*)

aided by CT scan, Doppler carotid and optimistic approach during surgery can resect the disease in few cases such as this [3, 4]. This case also demonstrates

that resectability cannot be judged by radiology alone, but dictated intraoperatively by assessing the surgical planes. The only possible absolute contraindication for resection in IVB could be intraluminal invasion or tumour thrombus.

Conflict of Interest There are no conflicts of interest amongst the authors regarding the content of article and clinical work of this case.

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