PHOTO ESSAY

Use of Lenvatinib in Neoadjuvant Setting to Achieve Total Thyroidectomy in a Case of Inoperable Follicular Thyroid Carcinoma

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Abstract

Lenvatinib and other tyrosine kinase inhibitors (TKIs) are being used in locally advanced thyroid cancers like poorly differentiated and anaplastic, as well as in radiorefractory differentiated thyroid cancer (DTC). However, their role in the neoadjuvant setting for DTCs is being increasingly explored, but there are only anecdotal reports in the literature that too only for percutaneous transhepatic cholangiography (PTC). Our case seems to be the first case where it was used in follicular thyroid cancer in the neoadjuvant setting.

Keywords: Differentiated thyroid cancer, Endocrine surgery, Thyroid.

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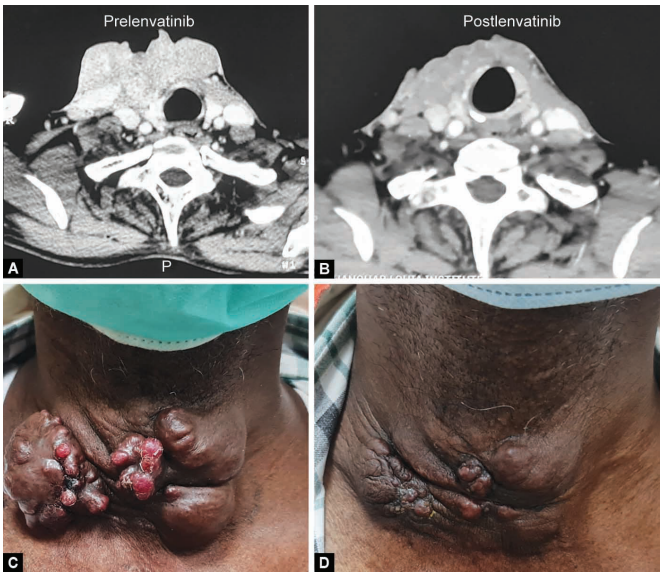
A 60-year-old gentleman presented with recurrent neck swelling. He was operated on (? nodulectomy) 22 years back for neck swelling, and holoprosencephaly was reported as follicular thyroid cancer. After 4 years, he developed a recurrence for which he was given radiotherapy. However, swelling continued to increase to the present size when he presented to us.

The growth continued to increase slowly, with occasional episodes of hemorrhage from the swelling and recurrent ulceration. Subsequently, the patient consulted Endocrine Surgery Outpatient Department. On examination, the patient had an ulceroproliferative mass measuring 9*5 cm fixed to the underlying muscles. The patient also had high free thyroxine and low thyroid stimulating hormone, hence started on neo-mercazole. Contrast-enhanced computed tomography (CECT) revealed a locally advanced thyroid mass—



Figs 1A to D: Prelenvatinib and postlenvatinib CECT and clinical pictures of a patient

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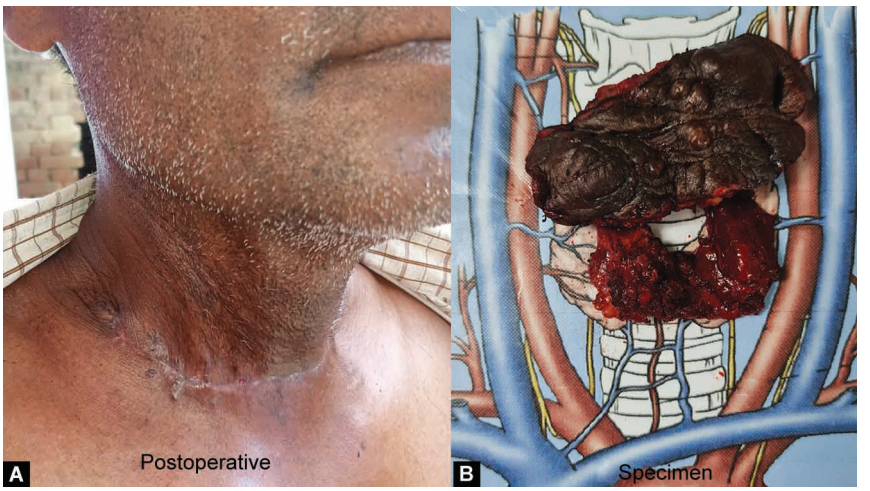
CECT showed ulceroproliferative mass in the anterior cervical space posteriorly infiltrating bilateral strap muscles and abutting thyroid gland with loss of fat planes. It was also infiltrating into b/l sternocleidomastoid muscle (R > L) with indistinct fat planes with right internal jugular vein (IJV). In view of an inoperable mass, the patient was started on lenvatinib 10 mg, which was gradually increased to up to 20 mg/day for a period of 5 months. The patient was able to tolerate it well without the need for discontinuation. He showed good response with lenvatinib with tumor reduction up to 40% and hence planned for surgery. The patient was then planned for surgery after 5 months of lenvatinib (Fig. 1). Intraoperatively tumor adhered to the strap muscles and sternocleidomastoid. IJV



Figs 2A and B: Postoperative clinical picture of patient and specimen

was reached *via* a posterior approach. Bilateral recurrent laryngeal nerves were identified and preserved. Primary closure was done (Fig. 2). Postoperatively, biochemical hypocalcemia was managed by oral calcium and vitamin D. Histopathology was suggestive of widely invasive follicular thyroid carcinoma. The patient is now planning for radioactive iodine treatment.

Lenvatinib and other TKI's are being used in locally advanced thyroid cancers like poorly differentiated and anaplastic as well as in radio refractory DTC,[1,2] However, their role in the neoadjuvant setting for DTCs[3,4] is being increasingly explored, but there are only anecdotal reports in the literature that too only for PTC. Our case seems to be the first case where it was used in follicular thyroid cancer in the neoadjuvant setting.

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