

# Clinical review of 2 rare cases of papillary thyroid carcinoma with parapharyngeal metastases

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**Abstract:** Papillary thyroid carcinoma is the most common thyroid carcinoma. Usually there is a high rate of metastases and micrometastases to the cervical lymph nodes, typically affecting the paratracheal and jugular lymph nodes. Papillary carcinoma rarely presents metastases to parapharyngeal and retropharyngeal lymph nodes. In well-differentiated thyroid cancers the incidence of parapharyngeal lymph nodes metastases was reported as 0.43 to 2.5%. Here we present two cases of papillary thyroid carcinoma with lymph node deposits in parapharyngeal space. The diagnosis was suspected by imaging studies (CT and MRI) but not confirmed until histological examination.

**Key words:** Parapharyngeal mass, Papillary thyroid carcinoma, Nodal metastases

## I. INTRODUCTION

Neoplasm of the thyroid gland is the most common endocrine malignancy. Papillary carcinoma is the most common histological variant in thyroid neoplasms. It usually metastases to lymph nodes<sup>1</sup> but the spread to retropharyngeal lymph nodes or parapharyngeal lymph nodes is rare. Around 112 cases of parapharyngeal and retropharyngeal node metastases have been reported in the literature till now and the incidence of parapharyngeal lymph node metastases of well-differentiated thyroid cancers varies from 0.43% to 2.5%<sup>2-4</sup>.

Here in we report 2 cases of thyroid papillary carcinoma with parapharyngeal metastasis. One case is a recurrence and another case presented with primary lesion in the right lobe of thyroid and metastasis to lateral cervical lymph node.

### **Case report 1**

A 19-year-old man presented to our ENT opd with the history of thyroid swelling since 6 months. Physical examination revealed thyroid swelling with no palpable cervical lymph nodes. FNAC was done which confirmed the diagnosis as papillary thyroid carcinoma. CT scan was done but no parapharyngeal and cervical lymph nodes were traced. The treatment planned was total thyroidectomy and the histopathological examination of the thyroidectomy specimen showed the existence of multifocal microscopic centers of papillary deposits within the gland, which confirmed papillary carcinoma of thyroid. The patient had been free of disease for approximately 10 years.

The patient again presented at 30 years of age with multiple enlarged cervical lymph nodes. FNAC from the nodes showed papillary deposits indicating recurrence of the papillary thyroid carcinoma. There was elevated thyroglobulin. The patient was sent to CT with contrast for further evaluation and CT showed multiple cervical lymph nodes along with a parapharyngeal lymph node. The patient then underwent a selective neck dissection, total thyroidectomy and a transcervical approach to the parapharyngeal node. There were no complications after the surgical procedure. The histopathological diagnosis of resected parapharyngeal lymph node confirmed metastasis of papillary thyroid carcinoma. Post-operatively radioiodine ablation was done. We followed the patient for 5 years and there was no recurrence reported till now and the patient is doing well.

### **Case report 2**

This a case of a 40yr old female who presented with thyroid swelling since 2 years with an enlarged level 3 cervical lymph node. The patient also had the history of dysphagia and on examination there was medial displacement of tonsil . Ultrasound was done which showed enlarged right lobe of thyroid gland with nodules and enlarged level 2 and 3 cervical lymph nodes on right. CT with contrast was performed which showed an enlarged parapharyngeal lymph node and the surgery was planned considering the parapharyngeal lymph node as a metastatic node. A total thyroidectomy with selective neck dissection and a transcervical approach for the removal of parapharyngeal lymph node was performed. Post operative radio iodine ablation was done. Histopathology confirmed the presence of papillary deposits in the parapharyngeal lymph node. Patient was on follow up for 3 years and the patient is free of disease till now.

## II. DISCUSSION

Thyroid neoplasms present the most common endocrine malignancies. The common histological variant is the papillary carcinoma. The incidence of papillary carcinoma is frequent in women (2.3:1) aged between 20 years and 50 years<sup>5</sup>. The common risk factor for this cancer is exposure to ionizing radiation during childhood. Reports from the literature depicted that one third of individuals exposed to radiation develop thyroid nodules and one third of them are malignant<sup>6</sup>. The common presentation of this tumor is as an asymptomatic thyroid nodule. Though the prognosis of this carcinoma is good small subgroups of patients have poor outcomes due to metastasis. The route of spread is through the lymphatics and vascular spread is rare. The metastasis to the bone, brain, lungs, and soft tissue occurs by vascular spread and is rarely reported. The incidence of lymphatic metastasis reported was 30% to 40% and haematogenous metastasis was 10 %<sup>7</sup>. The tumor can infiltrate internal jugular vein and recurrent laryngeal nerve in the neck. Though the involvement of cervical lymph node is common it is very rare for the parapharyngeal lymph node to involved. The literature<sup>2</sup> reported that only 0.43% of thyroid papillary carcinomas had parapharyngeal node metastasis. A recent study<sup>4</sup> demonstrated 25 parapharyngeal node tumours in a series of 5381 thyroid cancers which accounts to 0.43%. Kainuma<sup>8</sup> et al described recurrent cases of retropharyngeal and parapharyngeal lymph node metastasis. In a recent study Wang et al<sup>4</sup> evaluated 25 patients with thyroid malignancies with 22 papillary carcinomas, 2 medullary carcinomas, and 1 follicular carcinoma. In their study ,Parapharyngeal node metastases presented as nodal relapse after previous surgical treatment in 64% of patients, cervical and parapharyngeal node involvement during the initial presentation of thyroid carcinoma in 20 percent and only parapharyngeal lymph nodal involvement in initial diagnosis in 16% of cases. The authors concluded that neck dissection and wide spread cervical node involvement can alter the direction of lymphatic drainage and increase retropharyngeal drainage resulting in metastasis of parapharyngeal nodes.

Rouvier<sup>9</sup> in his study described a lymphatic connection between the upper pole of the thyroid and the retropharyngeal lymphatic system. He demonstrated this in one fifth of the cadaver dissection specimens and this lymphatic vessel was called the postero-superior collecting vessel. He observed the communication of retropharyngeal space with the parapharyngeal space through a dehiscence of the superior constrictor fascia that results in parapharyngeal metastasis from thyroid carcinomas.

In our patients radiological imaging with CT with contrast provided a key to the diagnosis of parapharyngeal metastases from thyroid carcinoma as the parapharyngeal area cannot be evaluated clinically or with ultrasound. Treatment was done with surgical resection and postoperative radioiodine ablation.

## III. CONCLUSION

CT with contrast or MRI is mandatory to evaluate parapharyngeal lymph nodes as they cannot be detected clinically and by ultrasonography. Radiological imaging provide guidance in patients who have undergone a previous neck dissection. Surgical resection with postoperative beam radiotherapy or radioiodine ablation are is the main stay of treatment for papillary carcinoma of thyroid to avoid recurrence. Parapharyngeal lymphnodes should be evaluated at the time of diagnosis of thyroid carcinoma even if their occurrence is rare and the differential diagnosis of a mass in the parapharyngeal space should include metastasis from thyroid carcinoma.

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