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General Surgery

PAPILLARY THYROID MICROCARCINOMA PRESENTING AS LYMPH NODE METASTASIS IN A 27YR OLD ADULT--A DIAGNOSTIC CHALLENGE: CASE REPORT

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ABSTRACT Papillary thyroid microcarcinomas (PTMCs) have an excellent prognosis, although a few may metastasize to cervical lymph nodes. However, an infiltrated palpable neck node without evidence of thyroid disease at presentation is uncommon. We report a patient with PTMC presenting as a lymph node metastasis without evidence of palpable primary thyroid tumor on clinical examination and with inconclusive lymph node fine-needle biopsy (FNB) cytology. In our case, thyroid imaging and histological examination of the FNB specimens of thyroid set the diagnosis and verified it.

KEYWORDS :

INTRODUCTION:

The maximum dimension of papillary thyroid microcarcinoma (PTMC), a specific subset of papillary thyroid carcinoma (PTC), must be 1.0 cm or smaller, according to the World Health Organization.The majority of PTMC cannot be seen clinically and is only discovered accidentally during autopsy or pathologic evaluation of thyroid materials following surgery for benign thyroid disorders. Psammoma bodies, cleft nuclei with a "orphan-Annie" appearance brought on by big nucleoli, and the development of papillary structures are all distinctive cytologic characteristics of PTC that aid in the diagnosis by FNA or after surgical resection[1].

In addition, the pathologic diagnosis of accidental PTMC has become more common due to the pathologic thyroid examination's increasing accuracy, particularly with the thinness and quantity of anatomical slices obtained for thyroid tissues. On the other hand, over the past few decades, the rate of preoperative diagnosis of PTMC has increased due to the widespread usage and technical advancement of thyroid ultrasonography and fine-needle aspiration biopsy (FNAB).The rate of minor thyroid cancer detection has increased as a result of the development of sensitive imaging tools[2]. The subsequent improvement in diagnostic processes led to a rise in the discovery of PTMC[3].

The prevalence of ultrasonography use has increased the likelihood of finding tiny thyroid nodules[4]. For malignancies greater than 10mm, fine-needle aspiration biopsy has improved, and this technique can detect microcarcinomas[5]. Some of the increases in PTMC incidence can be attributed to increased thyroid ultrasonography monitoring, fine needle aspiration biopsies (FNA), and higher specimen sampling by pathologists[6].

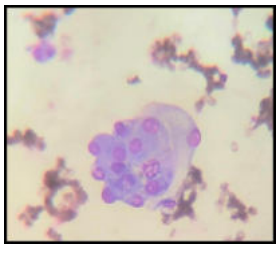


FIGURE : 1

CASE :

A 27 yr old male patient has presented with painless swelling on the left side of his neck for 4 months which was initially of size 2*2 cm and it had gradually progressed over a period of 4 months to attain a size of 4*2 cm, not associated with fever, no aggravating and relieving factors with no symptoms of hypo or hyperthyroidism, no significant past, family, personal history .on clinical examination he has enlarged level II, III of the left side of the neck with no other palpable swellings in the neck, the patient has been sent for FNB which revealed few cell clusters having round to oval nuclei and moderate cytoplasm mixed with inflammatory cells and many macrophages suggestive of secondary deposits in lymph node (Figure no :1)

Followed by he has been advised for ultrasonography of the neck which revealed An ill defined irregular shaped hypoechoic leison measuring 10*7 mm is seen in the left lobe of thyroid with tiny specks of calcifications,with internal vascularity -TIRADS 5 Few enlarged lymphnodes with simillar echotexture and calcifications seen in II,III cervical stations and posterior triangle - largest measuring 13*18 mm - F/S/O Malignant leison in left lobe of thyroid likely to be Papillary carcinoma of thyroid.

Followed by usg guided fnac of thyroid swelling which revealed smear study shows moderate cellularity comprised of follicular cells arranged in a papillary pattern, cells show pleomorphism, nuclear grooving cytological features suggestive of papillarythyroid carcinoma BETHESDA GRADE VI

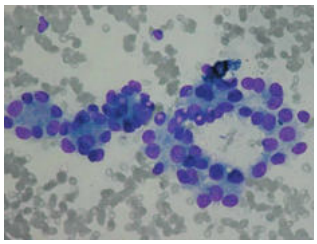
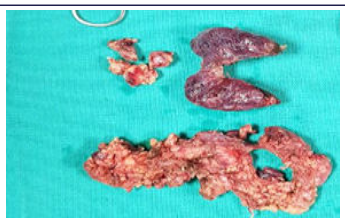


Figure no : 2

CECT neck for grading of tumor -an ill-defined hypodense lesion is seen in the left lobe of the thyroid measuring 10*7 mm with few tiny punctate microcalcifications. multiple enlarged lymph nodes showing heterogenous intense enhancement seen in left level II, III cervical stations, left supra clavicular region, and visceral space -F/S/O - a malignant lesion in the left lobe of thyroid with lymph node metastasis.provisional staging - T1a,N1b,Mo.

The patient has been treated by total thyroidectomy with functional neck dissection the left side (Figure 3).

Figure no : 3



also underwent radioactive iodine ablation of the thyroid post surgery(Figure no : 4 .

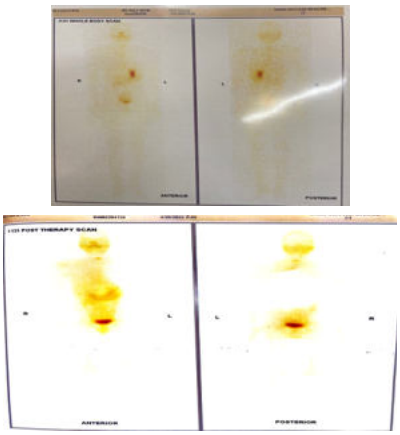


Figure : 4

DISCUSSION:

The most prevalent endocrine malignancy, differentiated thyroid carcinoma, has a steadily rising incidence globally. Papillary thyroid microcarcinomas (PTMCs) make up up to 43% of all thyroid malignancies, and they account for up to 50% of all new instances of papillary thyroid carcinoma (PTC) [7,8]. A form of PTC known as PTMC has a maximum diameter of one centimetre or less[8]. The majority of the time, PTMCs have been thought of as benign tumours with negligible clinical impact and no impact on patient survival. However, the extent of the disease in PTMCs varies greatly, and the reported frequency of the aggressive traits also vary greatly [7].

These tumours are typically found when the thyroid glands removed during a necropsy or surgery for a nonthyroidal or benign thyroid condition are examined histopathologically. Occasionally, a lymph node metastasis that manifests clinically as a neck mass may have a papillary microcarcinoma as its initial lesion. Papillary thyroid microcarcinoma incidence has rapidly increased as a result of high-resolution ultrasound-guided fine needle aspiration biopsy. The increasing rate of discovery has been attributed to the widespread use of ultrasound (US), fine needle aspiration biopsy (FNAB), and enhanced histopathologic analysis of surgical material[8].

Uncertainty persists regarding PTMC's clinical relevance. Although certain PTMCs may be linked to recurrence, distant metastasis, or death, the majority have an indolent course and a good prognosis. The favourable prognosis and potential benign behaviour of papillary microcarcinomas (possible partial spontaneous regression) can support a conservative therapy strategy. Microcarcinomas, on the other hand, are "real" malignancies that occasionally call for intensive therapy. Papillary thyroid microcarcinoma's clinical significance is debated. While some scientists have detected a malignancy that is surprisingly aggressive, others have found benign behaviour with no progression[9].

The long-term prognosis of PTMC is excellent, with a less than 1% cause-specific mortality rate at 20 years, but it regularly metastasizes to distant places and frequently spreads to the cervical lymph nodes [10]. Furthermore, extrathyroidal tumour expansion, a feature associated with a higher risk of locoregional recurrence, is also seen (10-20% in surgical and pathological studies), and PTMC is frequently multifocal (15.5-40% in surgical series and above 80% in systematic autopsy studies). In our study, the average rate of tumour multifocality was 28%, and the average rate of extrathyroidal extension was 24.2%. PTMC has a high risk of lymph node metastases to the central compartment despite the lack of palpable neck nodes [11].

Although PTMC is very prevalent, there is ongoing debate regarding the best way to treat these tumours. Some people believe that PTMC is a less aggressive subtype of papillary thyroid tumours that only needs modest care. Other organisations, on the other hand, have noted a significant frequency of metastasis from microcarcinomas and as a result they advocate vigorous surgery followed by ablation therapy. When tumour foci in a bilateral lobe are found before surgery, whole or nearly total thyroidectomy is typically done. However, in cases of unilateral PTMC, there appear to be two options for resection extent: unilateral lobectomy or total thyroidectomy. Whether a total thyroidectomy or lobectomy is the best course of action for PTMC[10] patients is up for debate.

According to the American Thyroid Association's guidelines, thyroid lobectomy is the recommended course of treatment for patients with isolated PTMC who are at low risk, whereas near-total or total thyroidectomy is advised for patients who have a history of radiation therapy to the head and neck, have a first-degree relative with differentiated thyroid cancer, or are older than 45. In our analysis, 77% of patients had a whole or nearly total thyroidectomy compared to 22% who had a lobectomy.

A radical therapeutic approach, similar to that used for classical PTC, based on a complete thyroidectomy, lymphadenectomy, central compartment, and radioiodine therapy, is required for individuals with aggressive PTMC, so it is crucial to identify these patients. Despite a body of literature that supports the use of I-131 therapy for patients with PTMC (especially those patients with poor histological features), few studies have been able to show a clinical benefit of I-131 therapy for patients with PTMC. I-131 therapy was used in about half of the patients, or 59% of them[12].

The recurrent laryngeal nerve can be surgically damaged, hypoparathyroidism can arise following radioiodine therapies, and aggressive PTMC therapy can result in new primary cancers[8]. Temporary and permanent problems after thyroid surgery were separated into groups for the current investigation. Temporary recurrent laryngeal nerve paralysis occurred in 3% of patients, followed by permanent paralysis in 1% of patients, permanent hypoparathyroidism in 24% of patients, and permanent paralysis in 3% of patients [13].

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