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Papillary Thyroid Carcinoma – Follicular Variant: A Case Report

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Abstract: Papillary thyroid carcinoma (PTC) is the most common thyroid carcinoma accounting for 85 to 90% of all thyroid cancers, the incidence of which is increasing worldwide. PTC has many variants and one of them is well-differentiated follicular variant (FV-PTC) that represents about 20% of the all PTCs, generally have a good prognosis. Important features for diagnosing FV-PTC are the ground glass appearance, nuclear grooving and intranuclear pseudo-inclusions, with an exclusive or almost exclusive follicular pattern of growth arranged in a nodular structure. Herein we report a case of PTC- follicular variant occurring in 52 years old woman involving the entire thyroid gland and adjacent lymph nodes, which was previously diagnosed as multinodular goitre. Involvement of cervical lymph nodes is very common (particularly in young patients), and it may be the first manifestation of the disease. The nodal metastases have a tendency to undergo cystic changes.
Keywords: Papillary thyroid carcinoma, follicular variant, thyroid carcinoma.

INTRODUCTION

Papillary thyroid carcinoma (PTC) is the most common thyroid carcinoma [1] accounting for 85 to 90% of all thyroid cancers, the incidence of which is increasing worldwide. PTC has many variants and one of them is well-differentiated follicular variant (FV-PTC) that represents about 20% of the all PTCs, generally have a good prognosis.

In follicular variant of PTC the malignant cells shows classical nuclear features of PTC, such as ground glass appearance, nuclear grooving and intranuclear pseudo-inclusions, with an exclusive or almost exclusive follicular pattern of growth arranged in a nodular structure. Capsule formation could be either incomplete or absent. Follicular architecture is largely prevalent, but a careful search for papillae usually demonstrates few scattered structures [2-4]. Herein we report a case of PTC- follicular variant occurring in 52 years old woman involving the entire thyroid gland and adjacent lymph nodes, which was previously diagnosed as multinodular goitre.

CASE REPORT

A 52 years old woman with known case of multinodular goitre came to Department of Surgery, Sree Balaji Medical College and Hospital with complaints of swelling on left side of neck. Patient was also a known case of type 2 diabetes mellitus on treatment for past 2 years. On ultrasound neck report showed heterogenous vascular lesion involving left lobe of thyroid- likely malignant. Left upper cervical lymphadenopathy.

USG guided FNAC was done and smear from the thyroid aspirate showed predominantly cyst macrophage, hemosiderin laden macrophages and occasional clusters of follicular epithelial cells in an abundant colloid background. Smear from lymph node showed clusters of follicular epithelial cells admixed with cyst macrophages in an abundant colloid background. The small cluster of follicular epithelial cell show enlarged nuclei.

Impression was given as cystic lesion in thyroid? Cystic degeneration in a neoplasm. In view of presence of follicular epithelial cells and colloid in lymph node suggested the of possibility of secondary deposits from primary thyroid neoplasm. Histopathological examination was required to confirm the diagnosis.

a. Total thyroidectomy with level II, III, IV and VI node dissection was performed on the patient by surgeons. Specimens were received in two containers; one contained multiple lymph nodes, largest measuring 7x5x3 cm, smallest measuring 2.5x2x1 cm and cut surface showed multiple cystic spaces filled with colloid and few hemorrhagic areas. The other contained total thyroidectomy specimen with left lobe measuring 5x4.5x4 cm, and the right lobe measuring 3x2x0.5 cm. Cut surface of left lobe showed multiple cysts filled with colloid and few solid areas, and cut surface of right lobe was unremarkable.

On microscopy, the lymph node sections showed thyroid acini composed of macro follicles, areas of cystic degeneration and haemorrhage admixed with lymph nodes enclosing reactive follicles and germinal centres. Section from thyroidectomy specimen showed lobules of thyroid acini separated by fibrous septa and enclosing micro and macro follicles. Areas of cystic degeneration and areas of haemorrhage are seen. Due to inconclusive reason further rebits were taken and evaluated. Rebit sections from the lymph node showed one of the lymph node with secondary carcinomatous deposits composed of islands of thyroid acini replacing lymphoid stroma. Rebit sections from the thyroidectomy specimen showed a papillary lesion composed of complex papillae lined by cells with optically clear nuclei with nuclear grooving. Some sections showed enclosed psammoma bodies. Impression was given as Papillary Thyroid Carcinoma – Follicular Variant.

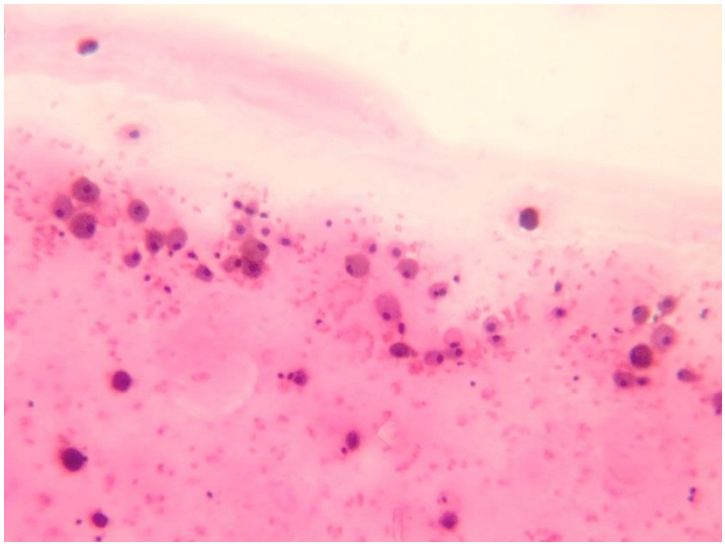

Fig-1: Fine Needle Aspiration Cytology (FNAC) showing cyst macrophage and colloid in low power.

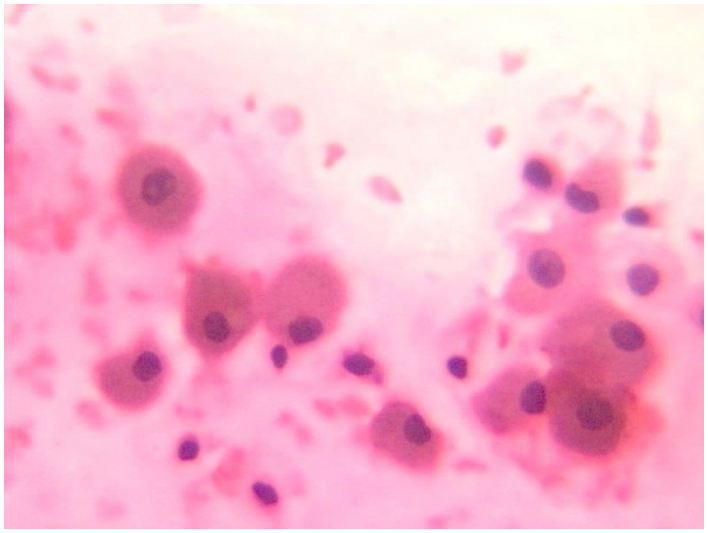

Fig-2: FNAC showing cyst macrophage and colloid in high power.

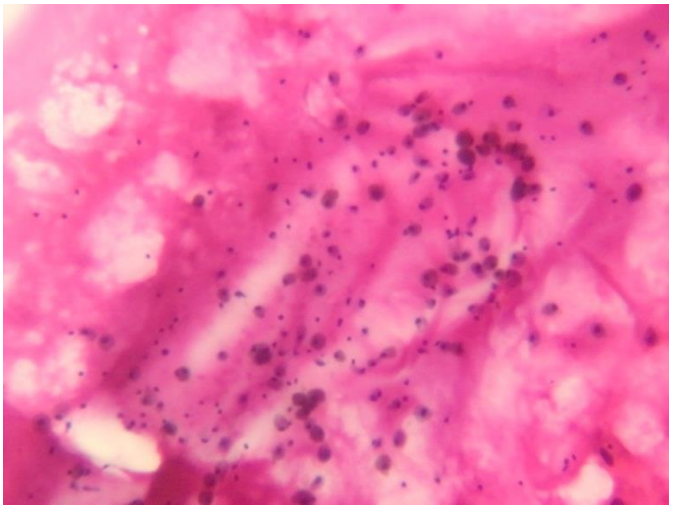

Fig-3: FNAC showing thick colloid in low power.

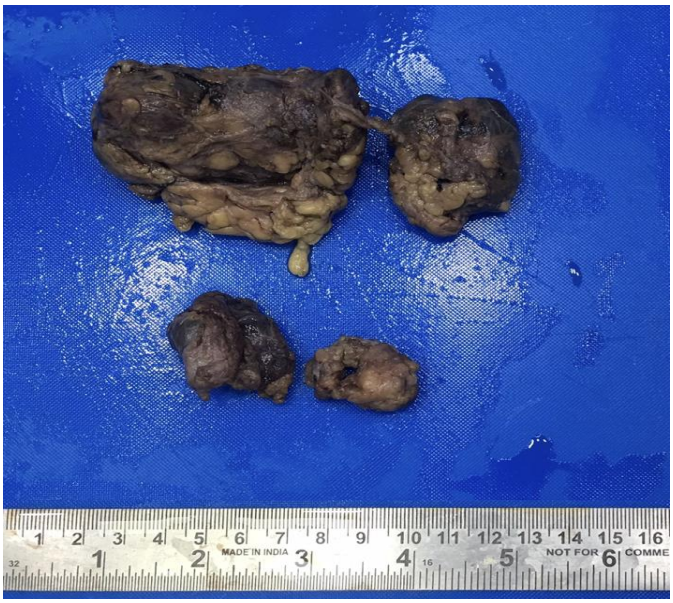

Fig-4: Total thyroidectomy specimen with nodes

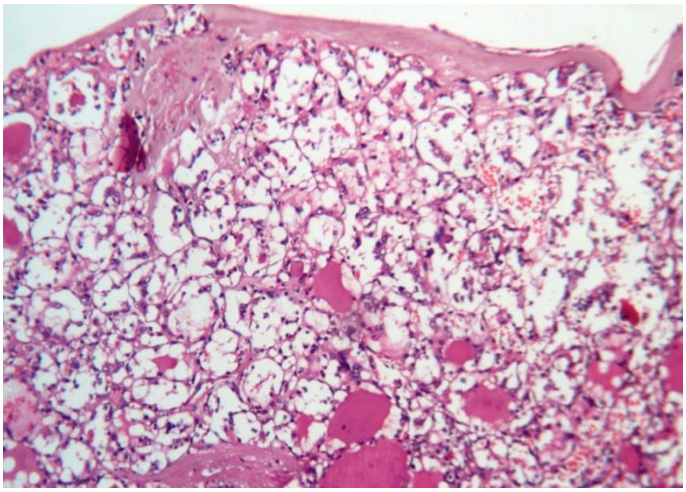

Fig-5: Section showing lymph node replaced by thyroid follicles and colloid. (H&E, low power magnification)

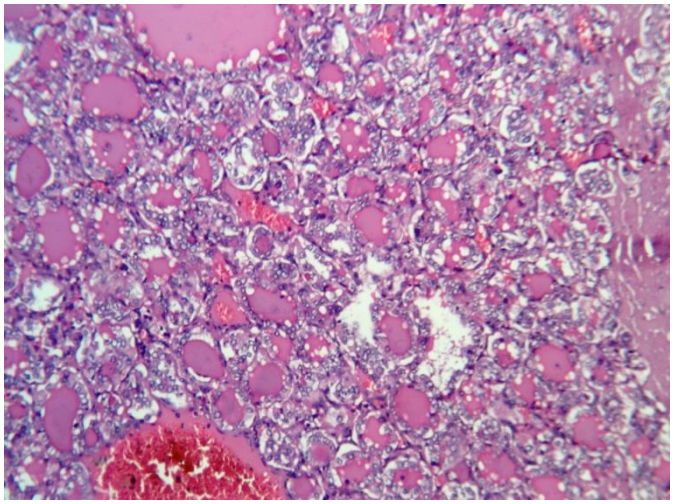

Fig-6: Section from thyroid showing lobules of thyroid acini separated by fibrous septa and enclosing micro and macro follicles. Focal area showing hemorrhage (H&E, low power magnification)

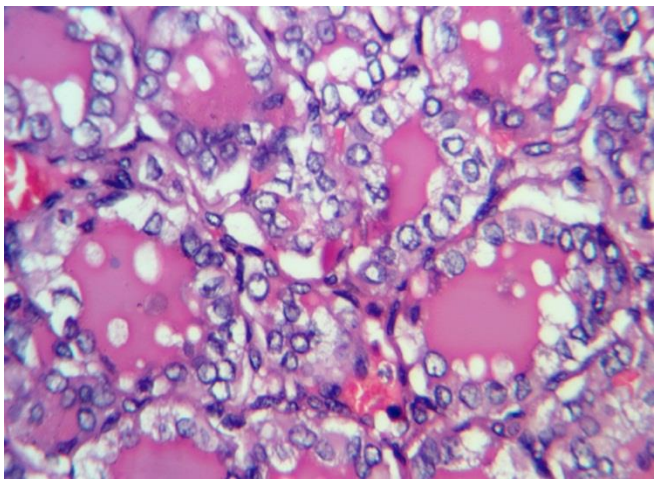

Fig-7: Section from thyroid showing neoplastic thyroid follicles filled with colloid having scalloping margin and are lined by cells with ground glass nucleus and nuclear groove (H&E, high power magnification)

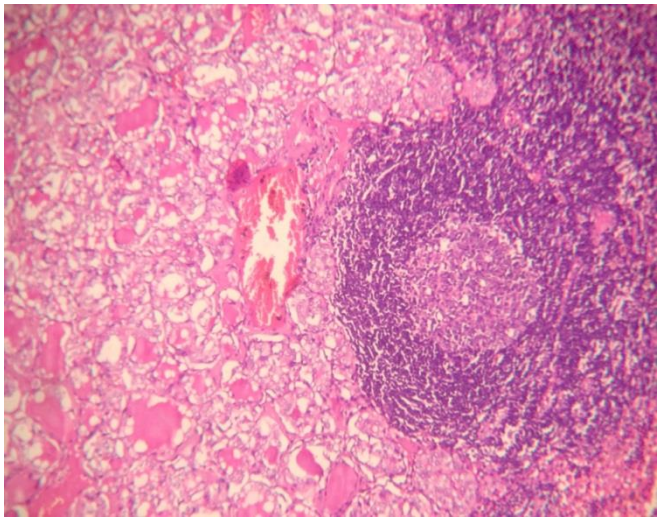

Fig-8: Section of rebits from lymph node showing lymphoid tissue infiltrated by neoplastic thyroid follicular cells (H&E, low power magnification)

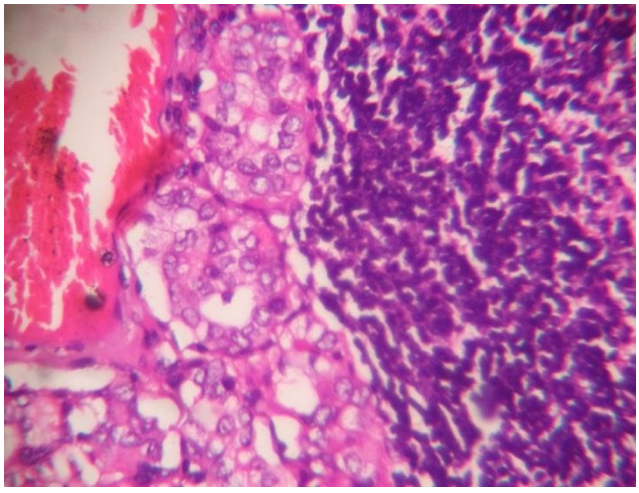

Fig-9: Section of rebits from lymph node showing lymphoid tissue infiltrated by neoplastic thyroid follicular cells (H&E, high power magnification)

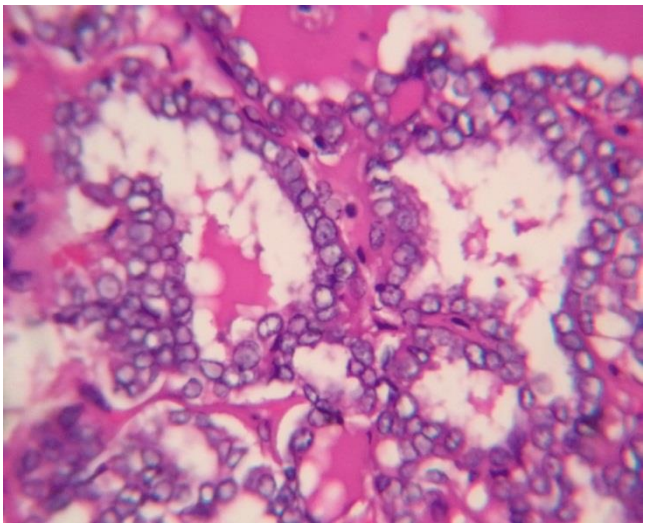

Fig-10: Sections of rebits from thyroid showing cells with ground glass (optically clear) nuclei. (H&E, high power magnification)

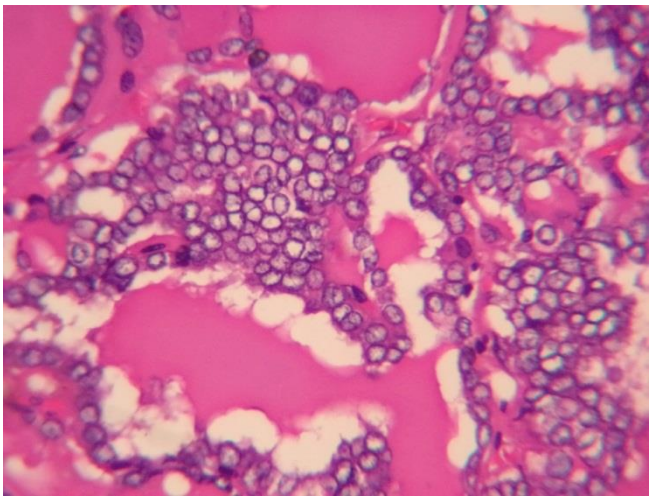

Fig-11: Sections of rebits from thyroid showing cells with ground glass (optically clear) nuclei. (H&E, high power magnification)

DISCUSSION

Most primary thyroid cancers are epithelial tumours that originate from thyroid follicular cells. Females are more affected than males. These cancers develop three main pathological types of carcinomas: papillary thyroid carcinoma (PTC), follicular thyroid

carcinoma (FTC) and anaplastic thyroid carcinoma (ATC). Medullary thyroid carcinoma (MTC) arises from thyroid Para follicular (C) cells. PTC consists of 85-90% of all thyroid cancer cases, followed by FTC (5-10%) and MTC (about 2%). ATC accounts for less than 2% of thyroid cancers and typically arises in the elder patients. Its incidence continues to rise with age. The mechanism of MTC carcinogenesis is the activation of RET signaling caused by *RET* mutations [5], which are not observed in follicular thyroid cell derived cancers. Accordingly, this review mainly focuses on follicular thyroid cell derived cancers. The classic treatment for thyroid cancer is conventional thyroidectomy, in part of cases, with adjuvant radioiodine ablation, and most patients can be cured with these treatments. On the other hand, surgically inoperative recurrence, refractoriness to radioiodine in DTC, poorly differentiated thyroid carcinoma and ATC are still lethal diseases. The recent substantial developments in understanding molecular pathogenesis of thyroid cancer have shown promising treatment strategies.

There are several variants of PTCs viz. Papillary micro carcinoma, Encapsulated variant, Follicular variant, Diffuse sclerosing variant, Oncocytic (oxyphilic) variant, Tall cell and columnar cell carcinoma, Cribriform–morular variant, Papillary carcinoma with exuberant nodular fasciitis-like stroma, and solid variant.

A certain part of follicular variant of papillary carcinoma (FVPTC) was classified as FTC or follicular adenoma in the past. The nuclei of this variant rarely have all of the features of PTC (eg. rare nuclear groove). Accordingly, FVPTCs are often diagnosed as indeterminate cytology in contrast to high diagnostic accuracy of usual PTC. FVPTC is recognized by its follicular structure with papillary cytology, and composed of 2 subtypes; diffuse/invasive (infiltrative) and encapsulated type. FVPTC is associated with favorable prognosis especially if tumour is encapsulated [9]. Diffuse/invasive subtype has similar clinical features to usual PTC. Diagnosis of encapsulated subtype is still under debate since this subtype shows no invasion or incomplete nuclear characteristics. This encapsulated subtype is slowly growing and conservative treatment may be warranted [10].

Extra thyroidal extension into the soft tissues of the neck is found in about one-fourth of cases, with occasional spread into the parathyroid glands [6-8]. Involvement of cervical lymph nodes is very common (particularly in young patients), and it may be the first manifestation of the disease. The nodal metastases have a tendency to undergo cystic changes. These metastases may not be clinically apparent because of their small size and also because their consistency may not differ from that of a normal node. Blood-borne metastases are less frequent than with other thyroid carcinomas.

CONCLUSION:

FNAC and HP examination of lateral neck swelling is important as to identify Papillary thyroid carcinoma which has overall good prognosis after treatment and follow up. It has to be differentiated from ‘sequestered goitre’, which is detached or accessory thyroid nodule which is now termed as ‘parasitic nodule’, secondary deposits from papillary carcinoma other than thyroid. Careful and thorough histopathological examination of clinically normal thyroid gland which presented with lateral neck swelling may reveal occult thyroid neoplasm which is common with papillary micro carcinoma as the tumour size is less than a centimeter.

REFERNCES

1. Schlumberger MJ. Papillary and follicular thyroid carcinoma. New england journal of medicine. 1998 Jan 29;338(5):297-306.
2. Davies L, Welch HG. Current thyroid cancer trends in the United States. JAMA Otolaryngol Head Neck Surg, 2014;140:317-22.
3. Jemal A, Bray F, Center MM, Ferlay J, Ward E, Forman D. Global cancer statistics. CA: a cancer journal for clinicians. 2011 Mar 1;61(2):69-90.
4. Lam AK, Lo CY, Lam KS. Papillary carcinoma of thyroid: a 30-years clinicopathological review of the histological variants. Endocr Pathol, 2005; 16: 323-30.
5. Hofstra RM, Landsvater RM, Ceccherini I, Stulp RP, Stelwagen T, Luo Y, Pasini B, Hoppener JW, Van Amstel HK, Romeo G, Lips CJ. A mutation in the RET proto-oncogene associated with multiple endocrine neoplasia type 2B and sporadic medullary thyroid carcinoma. Nature. 1994 Jan 27;367(6461):375-6.
6. Carcangiu ML, Zampi G, Pupi A, Castagnoli A, Rosai J. Papillary carcinoma of the thyroid. A clinicopathologic study of 241 cases treated at the University of Florence, Italy. Cancer, 1985; 55: 805–828.
7. Cody HS, Shah JP. Locally invasive, well-differentiated thyroid cancer: 22 years' experience at Memorial Sloan-Kettering Cancer Center. The American Journal of Surgery. 1981 Oct 1;142(4):480-3.
8. Tang W, Kakudo K, Nakamura Y, Nakamura M, Mori I, Morita S, Miyauchi A. Parathyroid gland involvement by papillary carcinoma of the thyroid gland. Arch Pathol Lab Med, 2002; 126: 1511–1514.
9. Tielens ET, Sherman SI, Hruban RH, Ladenson PW. Follicular variant of papillary thyroid carcinoma. A clinicopathologic study. Cancer, 1994; 73: 424-431.
10. Liu J, Singh B, Tallini G, Carlson DL, Katabi N, Shaha A, Tuttle RM, Ghossein RA. Follicular variant of papillary thyroid carcinoma. Cancer. 2006 Sep 15;107(6):1255-64.