WARTHIN LIKE PAPILLARY CARCINOMA OF THE THYROID GLAND -A RARE VARIANT

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ABSTRACT
Warthin like papillary thyroid carcinoma (WaLPTC) is a rare variant of papillary carcinoma of thyroid, which got this name due to its microscopic similarity to warthin’s tumour of salivary gland by presence of oncocytic cells and dense lymphoplasmacytosis. [1] We are herewith presenting a case of 35 years old male who presented with thyroid mass since 6 months with USG showing a solitary nodule in right lobe with a hypo echoic features and increased vascularity with right & left Level VI nodal enlargement. Fine Needle Aspiration cytology (FNAC) was performed, which was reported as lymphocytic thyroiditis with foci showing increased cellularity with follicular cells showing nuclear features of Papillary Thyroid Carcinoma. Total thyroidectomy was performed with Level VI lymphnodal dissection which on histopathological examination showed Warthin’s like papillary carcinoma with capsular and vascular invasion and right sided Level VI lymphnodal metastasis.

INTRODUCTION
We are presenting a case of a Warthin-like papillary thyroid tumor (WaLPTT) in a 35yr old male patient who presented with solitary nodule thyroid right sided since 6 months. WaLPTT is a rare variant of papillary thyroid carcinoma (PTC) with approximately 80 cases reported in literature to date (Amico et al., 2010). Apel et al., first described (1995) thirteen cases of thyroid neoplasms with morphological resemblance to Warthin’s tumour of the salivary glands. We describe the clinical and diagnostic features of WaLPTT and its relevance in prognosis.

Case Report
35 year old male patient presented with solitary nodule thyroid right sided since 6 months. On examination right lobe showed firm areas on palpation. Ultrasound showed a solitary nodule in the right lobe of thyroid measuring 4.5x3.7c.m with hypoechoic texture and increased vascularity. Bilateral level VI nodes were enlarged. All the investigations including thyroid function tests, anti-thyroid antibodies were within normal limits. Fine-needle aspiration was performed and showed follicular epithelial cells in a lymphocytic background with many of them showing Hurthle cell change (abundant eosinophilic cytoplasm) (Fig-1A). Aspirated smears from right lobe showed a foci with increased cellularity of the cells with nuclei showing overlapping and grooving (Fig-1B). FNAC diagnosis was given as Lymphocytic thyroiditis. However excision biopsy was requested as the aspiration showed foci of cellular areas with nuclear features of papillary carcinoma thyroid.

GROSS EXAMINATION
Received total thyroidectomy with bilateral Level VI lymph node dissection. External surface of both the lobes were smooth, right lobe measuring 4x3.5x3c.m and
left lobe measuring 4x2.5x2cm. Cut surface of right lobe showed a greyish nodule measuring 3.5x 3 cm which was fleshy and infiltrating the capsule (Fig 2A). Normal thyroid tissue was seen in the cut section of left lobe (Fig 2 B).

MICROSCOPIC EXAMINATION

The sections from right lobe showed a tumor with papillary architecture. Inflammatory infiltrate, predominantly composed of plasma cells and lymphocytes filled the papillary stalks. These papillae were lined by tumor cells with oncocytic cytoplasm and round to oval nuclei with nuclear features of papillary carcinoma (chromatin clearing, nuclear inclusions, and nuclear grooving) (Figure 3A, B). One focus showed follicular variant of papillary carcinoma (Fig 3C). Foci of capsular and vascular invasion were seen (Fig 3D).

The surrounding thyroid tissue exhibited lymphocytic thyroiditis. Sections from left lobe showed lymphocytic thyroiditis with foci of Hurthle cell change. Right level VI Lymph node showed Metastatic Papillary Carcinoma. Left level VI nodes showed no evidence of tumor infiltration.

Figure 1A. Photomicrography of FNAC thyroid showing follicular epithelial cells in a lymphocytic background. with few of them showing abundant eosinophilic cytoplasm -Hurthle cell change (Pap, 100x, 400x)

Figure 1B. Photomicrography of FNAC right lobe of thyroid showing foci with increased cellularity of the cells with nuclei showing overlapping and grooving.

Figure 2A. Photomicrography of cut section of Right lobe showing a greyish nodule which was fleshy and infiltrating the capsule.

Figure 2B. Photomicrography of cut section of Left lobe showing normal thyroid tissue

Figure 3A. Photomicrography showing Right level VI Lymph node with Metastatic Papillary Carcinoma Thyroid-Follicular variant (H & E stain, 100x magnification).
DISCUSSION

The Warthin like variant of papillary thyroid carcinoma, derived this name due to its microscopic similarity to papillary cystadenoma lymphomatosum - Warthin’s tumour of the salivary glands and was first reported by Apel et al in the year 1995. It is a rare variant of Papillary Thyroid Carcinoma with approximately 80 cases reported in literature till date (Tazawa et al., 1999).

The clinical and radiological picture of WaLPTT is similar to other Papillary Thyroid Carcinoma with earlier age of presentation and female predominance. Other symptoms of goiter or hormone changes may be seen if it is associated with thyroiditis. FNA may be useful in diagnosing Papillary Thyroid Carcinoma due to nuclear characteristics of tumor cells showing nuclear chromatin clearing, nuclear grooving, pseudo inclusions and membrane thickening. However the oncocytic cells and lymphocytic infiltrate may suggest features of Hashimoto’s thyroiditis. Papillary Thyroid Carcinoma with Hashimoto’s thyroiditis are the most frequent diagnosis in literature on these patients (Antonio et al., 2000).

The gross appearance of Warthin’s Papillary Thyroid Carcinoma is greyish white in color and are well circumscribed. Occasionally cystic or hemorrhagic areas are seen. Size usually is not more than 5cms (till date only one case of WaLPTT more than 5cms (Baloch and LiVolsi, 2000; Luďvikova et al., 2001 has been reported in literature). The histological diagnosis of WaLPTT was based on oncocytyc thyroid follicular cells, lymphocytes with papillae showing lining epithelium with nuclei showing typical Papillary Thyroid Carcinoma features. Differential diagnoses to be considered include Hurttle Cell Carcinoma and Tall Cell Carcinoma. Hurttle Cell Carcinoma lacks the lymphoplasmacytic infiltrate (Kim et al., 2006) and Tall Cell Carcinoma has papillae lined with oncocytes, which are elongated and have a height that is more than twice their width. Both these tumors are also aggressive with more frequent capsular and vascular invasion (Bocklage et al., 1999). The role of immunohistochemistry in differential diagnosis of WaLPTT is not useful though intense staining for markers, Galectin - 3, HBME - 1, CK 19, TTF - 1, Thyroglobulin, EMA, AE1 / AE3, S-100, Cyclin D & UCHL 1 have been reported. Ostrowski and Merino believe that CD 15 immunostaining represents a distinctive characteristic of tall cell carcinoma and also a predictive factor for poor prognosis (Ostrowski and Merino, 1996). BRAF (V600E) mutations are seen in 75% of these tumors (Sarkady et al., 1999).

The prognosis of WaLPTT seems to be similar or better than classical PTC. The presence of lymphoid tissue in the tumor accounts for the less incidence of nodal metastasis. These patients’s course of treatment is similar to classical Papillary Thyroid Carcinoma depending upon the stage of disease and prognostic factors (Lam et al., 2005). Our patient underwent post-operative radioiodine therapy due to evidence of vascular and capsular invasion and is undergoing the same post-operative follow up and treatment programme used in patients with classical Papillary Thyroid Carcinoma.

CONCLUSION

Warthin-like papillary thyroid carcinoma is a recently described rare variant of papillary thyroid cancer that is frequently associated with lymphocytic thyroiditis and are more prevalent in females. They have a favourable prognosis with few cases with capsular and vascular invasion and rarely lymph node metastases. We present this case of WaLPTT for its rarities, like occurrence in a male patient with an aggressive presentation such as capsular and vascular invasion with metastasis to lymphnode. Out
of the eighty cases reported in the literature till date only eight cases have been reported in males and five cases with capsular and vascular invasion with lymph node metastasis have been reported (Vera-Sempere et al., 1998). Larger prospective long-term studies are necessary to understand better the biological behaviour of these tumors and their clinical and prognostic impact.

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REFERENCES
1. P. Amico, S. Lanzafame, G. Li Destri et al. (2010). Warthin tumor- like papillary thyroid carcinoma with a minor dedifferentiated component: report of a case with clinicopathologic consider ations. Journal of Medical Case Reports, Article ID 495281, 5 pages,
5. Z. W. Baloch and V. A. LiVolsi.(2000). Warthin-like papillary carcinoma of the thyroid. Archives of Pathology and Laboratory Medicine, 124(8), 1192-1195.

CONFLICT OF INTEREST
The authors declare that they have no conflict of interest.

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