Cystic papillary carcinoma of thyroid gland - a rare case

R. Chougule Sonesh · M. Desai Sanjay

Abstract

A case of cystic papillary carcinoma of thyroid gland is reported, which depicts typical ultrasonographic features that help in diagnosing a rare case with diagnostic certainty.

Keywords Ultrasonography · Thyroid · Papillary carcinoma · Solid excrescences · Calcification.

Introduction

High resolution B-mode sonography has evolved in past few years and has become a very valuable tool in diagnosis of head and neck pathologies [1].

Although the newer modalities like Spiral CT & MRI have added advantage, USG is commonly the first imaging modality for superficial neck masses after clinical examination [1].

Ultrasonography provides excellent evaluation of normal & abnormal thyroid gland [2]. It is capable of distinguishing a cystic mass from a solid one [3]. In general, cystic thyroid lesions are considered to be benign and managed with repeated fine needle biopsy (FNA) [4]. The incidence of malignant disease in cystic nodules is approximately 10% and these are operated upon because they have persisted after repeated aspiration [3]. However, such cases account for only 1% of cystic lesions [4]. Depiction of typical sonographic features in cystic thyroid nodules described below helps in recommending careful evaluation and surgery, even if FNA result is negative [3].

Case history

We report a case of a 64 year old woman, who came with swelling over the right side of neck since 4 months. Clinically, it was suggestive of a thyroid mass.

Ultrasonography of neck was done using 7.5 to 9 mHz linear array transducer. It showed a predominantly cystic lesion with 'solid excrescences' projecting into the cyst. These excrescences also showed multiple punctate echogenic foci, suggestive of calcification. [Fig. 1], [Fig. 2].

Left lobe of thyroid & isthmus appeared normal in morphology and echotexture without any focal lesion. No significant cervical lymphadenopathy was noted.

These findings prompted an FNAC, which revealed findings suggestive of papillary carcinoma of thyroid gland.

Subsequently, patient underwent total thyroidectomy. Histopathological examination confirmed the diagnosis of papillary carcinoma.

R. C. Sonesh¹ (✉) · M. D. Sanjay²

¹3rd year resident

²Honorary associate professor

Department of Radio-diagnosis, Rural Medical College,
Loni, Tal.Rahata,
Ahmednagar - 413 736

Department of Radio-diagnosis,
Rural Medical College,
A/P Loni, Tal-Rahata,
Ahmednagar - 413 736.
Mobile: +9850040985.
E-mail: Soneshc@yahoo.com

Fig. 1 USG Neck showing ‘solid excrescences’

Fig. 2 USG Neck showing multiple punctate echogenic foci

Discussion

Papillary carcinoma of thyroid gland has two peaks of prevalence in IIIrd & VIIth decades of life [5]. Women are more affected than men [7]. Our patient was also a female in the VIIth decade of life.

Cystic changes are a well recognized finding in papillary carcinoma of thyroid gland, being described in 10–30% of cases [6]. Cystic thyroid lesions are generally benign. When cystic changes predominate, diagnosis of malignancy can be difficult [6]. Differentiation between extremely common benign cystically degenerative hyperplastic nodules and the rare entity of cystic papillary carcinoma can be difficult [6]. Moreover; it is extremely rare for papillary carcinoma to exhibit a large amount of cystic change occurring in less than 5% of cases [7]. Otherwise over 90% of the papillary thyroid carcinomas are predominantly solid masses [7].

A solid excrescence is a mural nodule which shows minimal vascularity on colour Doppler. A cystic lesion with solid excrescences protruding into the cyst raises the possibility of cystic papillary carcinoma. However, the findings of multiple punctate echogenic foci suggesting calcification (representing ‘psammoma bodies’) is considered a diagnostic sign of papillary carcinoma [3].

On microscopic examination, the tumor is multicentric within the thyroid gland in 20% of cases [8]. Round, laminated calcifications (psammoma bodies) in the cytoplasm of papillary cancer cells is seen in 35% of cases.

Papillary carcinoma has peculiar histologic (fibrous capsule, microcalcifications) and cytologic features (“ground glass” nuclei, cytoplasmic inclusions in the nucleus and indentations of nuclear membrane) that allows pathological diagnosis [7]. Microcalcifications result from deposition of calcium salts in the psammoma bodies [7]. These are seen on USG as punctate echogenic foci within the solid excrescences. Posterior acoustic shadowing is not demonstrated as they are too small. Hence, these punctate echogenic foci with solid excrescences in predominantly cystic lesions of thyroid gland have very high specificity for papillary carcinoma. This finding has been named as sonographic ‘calcific nodule in cyst’ sign by Hatabu et al [3].

Conclusion

We were able to demonstrate this ‘calcific nodule in cyst’ sign in our case, which helped to diagnose and effectively treat papillary carcinoma of the thyroid gland. Hence, whenever a cystic lesion is detected in the thyroid gland, solid excrescences and punctate echogenic foci should be specifically identified to detect possible malignant etiologies like papillary carcinomas.

References

1. Dietmar K, Gritzmam N. (2000) Ultrasound of neck Radiological clinics of North America Page 1029, 1043
2. Simone JF, Daniels GH et al (1982) High-Resolution Real-Time Sonography of the Thyroid. Radiology 145:431–435
3. Hatabu H, Kasagi K., Yamamoto K. (1991) Cystic papillary carcinoma of Thyroid Gland: A New Sonographic sign Clinical Radiology 43:121–124
4. Rojeski and Gharib et al (1985) Nodular thyroid disease, Management
5. Grebe SK, Hay ID (1997) Follicular cell-derived thyroid carcinoma. Cancer Treat Res 89:91140
6. Dineen, Robert, Robinson, Ivan (2005) Sonographic features of cystic papillary carcinoma of thyroid gland: Ultrasound 13(3):186–191
7. Solbiati L. Rumack Diagnostic Ultrasound, 3rd edition, The Thyroid Gland 1:740–74
8. Black BM, Kirk TA Jr, Woolner LB (1990) Multicentricity of papillary adenocarcinoma of the thyroid: Influence on treatment. J clin Endocrinol Metab 20:130–135