

# Encapsulated Follicular Variant of Papillary Carcinoma of Thyroid- Case Report

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## ABSTRACT

**Background:** Encapsulated follicular variant of papillary carcinoma of the thyroid is a common thyroid gland cancer with a highly indolent behavior.

**Methods:** A fifty-five-year-old female patient presented with chief complaints of swelling on left side of the front of neck swelling, mild pain and hoarseness of voice. At the time of initial presentation the mass has not been changing in size nor did the patient experience any compressing symptoms. Complete blood count and other biochemical parameters were within normal limits.

**Results:** Histopathological examination of thyroid showed encapsulated well defined nodular tissue comprising of numerous microfollicles, which were lined by atypical cuboidal cells having large irregular nuclei, prominent nuclei, fine powdery chromatin and the moderate amount of cytoplasm, few cells showing nuclear clearing and grooving. On the basis of histopathological findings we have made the diagnosis of this rare case.

**Conclusion:** Due to its rare occurrence and very close mimicker of follicular adenoma and carcinoma, we are presenting this rare case.

**Key-words:** BRAF oncoprotein (IHC staining), Encapsulated follicular variant, Histopathological, Microfollicles, Papillary carcinoma of thyroid

## INTRODUCTION

Encapsulated Follicular variant of papillary carcinoma of the thyroid is a common thyroid gland cancer with a highly indolent behavior, recently reclassification as a non-malignant neoplasm has been proposed. There are two forms of follicular variant- encapsulated or well circumscribed and infiltrative form<sup>[1]</sup>.

Encapsulated follicular variant of papillary carcinoma of thyroid characterized by an encapsulated (sometimes

partial) non-invasive tumor with a nearly exclusive follicular pattern, focal to diffuse distribution of characteristic nuclear features of papillary carcinoma, a low risk of lymph node metastasis, very low recurrence risk and a strong association with RAS mutation<sup>[2-6]</sup>.

## MATERIALS AND METHODS

A Patient was admitted in the indoor department of surgery in LLRH where the patient was operated and the thyroidectomy specimen sent for histopathological examination in the department of Pathology, GSVM Medical College, Kanpur, India in the year of 2018.

The specimen was fixed in 10% buffered formalin for 24 - 48 hrs after that tissue was processed and stained by hematoxylin and eosin staining and mounted with DPX.

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## CASE REPORT

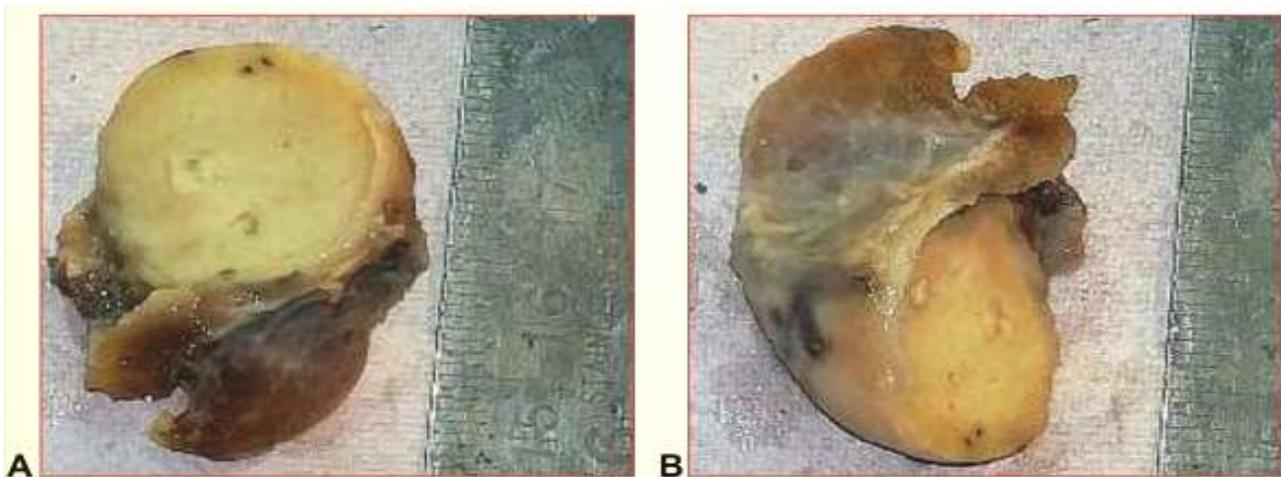
A 55 yr old female presented to the OPD of our Surgery department of LLRH complaining of left-sided neck swelling for past 4 yrs and hoarseness of voice and mild pain in the neck.

At the time of initial presentation, the mass had not been changing in size nor did the patient experience any compressive symptoms. The patient denied any family history of thyroid disease. On physical examination a 4 cm. swelling was palpable in the left side of front of neck which moved with swallowing. Complete blood count and all biochemical parameters of the patient were in normal limit. Ultrasound neck showed isoechogetic to

hypoechogetic circumscribed mass with smooth margins. No calcification was seen.

**Gross:** A thyroidectomy specimen was sent to the Pathology department of GSVM Medical College for histopathological examination. Specimen received in one labeled jar mentioned as thyroid gland tissue.

The specimen consists of one capsulated greyish white to greyish brown soft to firm tissue piece altogether measuring 4x3x1.5 cm, outer surface was smooth and shiny. On cut section- one cyst was identified measuring 2x1.5 cm cyst was filled with dark brown homogenous material (Fig. 1).

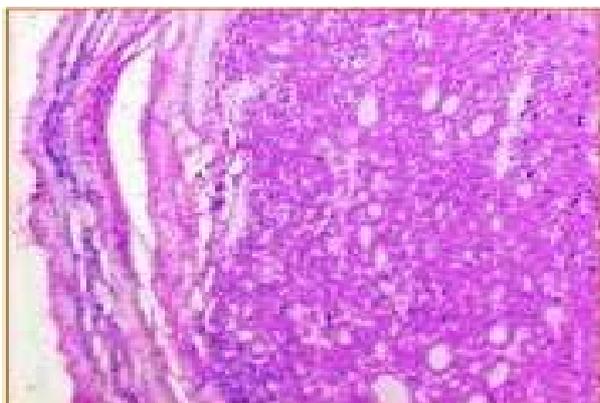


**Fig. 1 (A): Shows gross appearance of follicle variant of papillary carcinoma of thyroid outer surface is smooth & shiny**

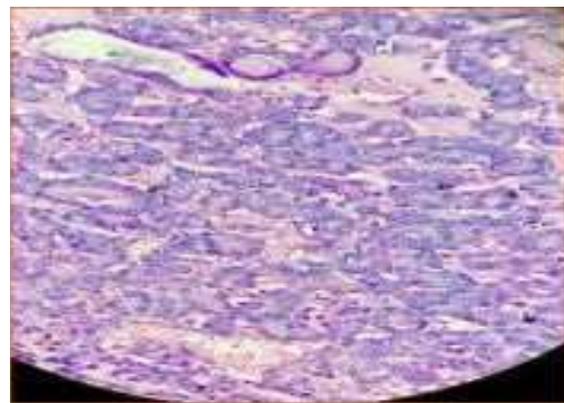
**B: On cut section it is grayish white to grayish brown**

**Microscopic examination-** Section from thyroid shows encapsulated well defined nodular tissue comprising of numerous microfollicles. These microfollicles were lined by round to oval atypical cells having large irregular nuclei, prominent nucleoli, fine powdery chromatin and

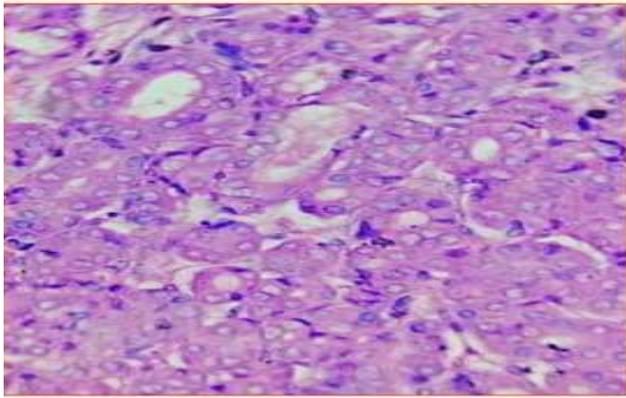
moderate amount of cytoplasm. Few cells was showing nuclear clearing and growing adjacent to nodular areas few variable sized microfollicles and marcofollicles filled with colloid material along with hemorrhage are also seen (Fig. 2 to Fig. 5).



**Fig. 2: On scanner view (4x) shows well in encapsulated tissue along with multiple colloid filled variable sized follicles**



**Fig. 3: On low power view (10x) shows numerous micro follicles lined by round to oval atypical cells**



**Fig. 4: On high power view (40x) shows irregular nuclei, prominent nucleoli, fine powdery chromatin and scant to moderate amount of cytoplasm. Few cells are showing nuclear clearing and grooving**



**Fig. 5: Immuno reactivity for BRAF oncoprotein (IHC staining)**

## DISCUSSION

Papillary thyroid carcinoma has several well recognized histologic variants with follicular variant a common type as defined by the WHO [7]. There are two main types-encapsulated and infiltrative. The incidence of Follicular Variant of Papillary carcinoma of thyroid has increased rapidly during the past decade, accounting for ~24-33% of papillary thyroid carcinoma, a more recent study indicated that the figure had risen to 41% [8]. With the excellent prognosis of follicular variant of papillary carcinoma of thyroid, lobectomy should be the initial surgical procedure for tumors <2 cm or >2 cm without extra-thyroidal extensions, this kind of follicular variant of papillary carcinoma of thyroid is regarded as low risk. Tumors >2 cm with extra-thyroidal extensions should undergo total thyroidectomy, which could benefit the survival, tumors >4 cm was not the strong predictor for total thyroidectomy [8]. Risk stratification of thyroid carcinomas for both PTCs and follicular thyroid carcinomas is one of the most important elements in the diagnosis of thyroid tumors, which aims to reduce over diagnosis and overtreatment of thyroid carcinomas [9].

## CONCLUSIONS

We are reporting the rare case of the encapsulated follicular variant of papillary thyroid carcinoma because of its interest for surgeons and physicians who are treating thyroid diseases. The encapsulated type of follicular variant of papillary carcinoma of thyroid shows no invasion of surrounding thyroid tissue, blood vessels or lymphatics and it was characterized by tumor possessing both nuclear features of papillary thyroid

carcinoma (e.g. nuclear clearing, grooves and pseudo-inclusions and follicular growth pattern. On these bases it can be differentiated from follicular adenoma and carcinoma.

Follicular variant of papillary carcinoma of thyroid is best managed conservatively by lobectomy or thyroidectomy alone without radio-ablative iodine or suppression therapy.

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## CONTRIBUTION OF AUTHORS

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**Data collection-** Dr. Swetlana Sachan

**Data analysis and interpretation-** Dr. Anita Omhare

**Literature search-** Dr. Anveksha Sachan

**Writing article-** Dr. Swetlana Sachan

**Critical review-** Dr. Mahendra Singh

**Article editing-** Dr. Swetlana Sachan

**Final approval-** Dr. Swetlana Sachan

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