

# Secretory Carcinoma of Breast: A Rare Cytodiagnosis

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### ABSTRACT

Secretory carcinoma is a rare low grade malignant breast carcinoma of children and adults. Since patients are often young and presents with indolent breast lump in the breast, a high degree of suspicion is often needed for the clinical diagnosis. Fine needle aspiration cytology (FNAC) is often the primary investigation, and because of the indolent clinical presentation, rarity of tumour and unanticipated cytological findings a primary cytological diagnosis of secretory carcinoma is often difficult.

We present a case of 13-year-old female, presented with a well defined mobile right breast lump. The aspiration cytology revealed highly cellular smears consisted of singly scattered and loosely cohesive cluster of monomorphic cell population of round to ovoid cells with bland cytological appearance in background of thick mucinous material, leading to cytological diagnosis of secretory carcinoma.

A primary diagnosis of secretory carcinoma on FNAC can provide early and definite surgical management including simple mastectomy with axillary lymph node resection recommended for treatment of secretory carcinoma.

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## Introduction

Secretory carcinoma, also called as juvenile carcinoma, is a rare breast carcinoma with a frequency of 0.15% of all breast malignancy<sup>[1,2]</sup>. Although initially diagnosed in children, it was later found to affect all age groups including adults<sup>[3]</sup>. The patients clinically presents with an indolent, well-defined mobile breast lump leading to common clinical diagnosis of fibroadenoma. Fine needle aspiration cytology (FNAC) is often the first investigation; because of the rarity of tumour the cytological diagnosis can be missed.

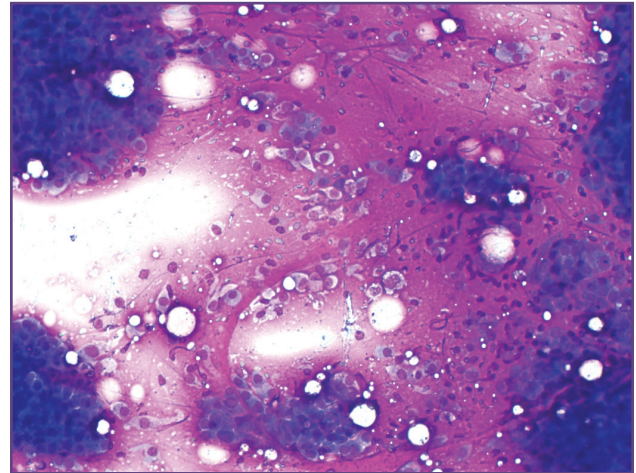
This case report presents an insight in to the cytological findings of secretory carcinoma and establishes FNAC as an important investigation tool in the early diagnosis of breast carcinoma.

## Case Report

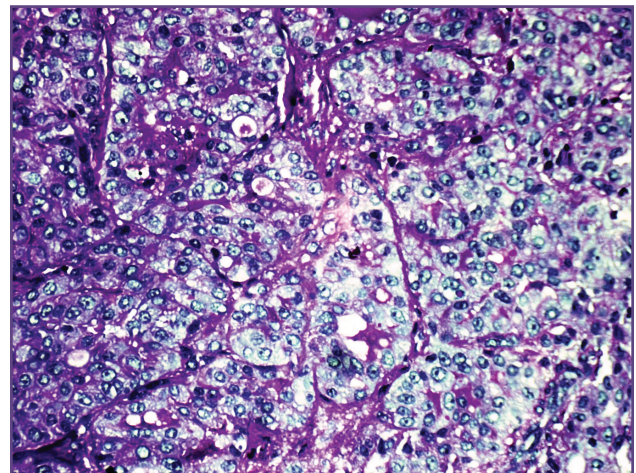
A 13-year-old female presented to cytology department with a painless breast lump for 3 months. On examination the lump was located in the upper outer quadrant, well defined hard and mobile. A clinical impression of benign breast disease with a possibility of fibroadenoma was made. FNAC was done from the breast lesion; the aspirate was blood mixed. Both wet fixed and dried smears were made. The slides were both giemsa and papanicolou stained. On microscopy the smears were cellular showing tumour cells arranged in loose sheets and singly scattered in a thick proteinaceous background. The cell population was single type and consist of cells having round to oval shape with abundant pale to granular cytoplasm with centrally placed ovoid nuclei. The cytoplasm shows both intracytoplasmic and extracytoplasmic vacuoles with occasional signet ring type cells. No significant pleomorphism and mitosis was found in the cytological smears. A diagnosis of secretory carcinoma was given on cytology and excision was advised.

The tumour was excised. Grossly the tumour was well circumscribed and measured 3x2.5x2 cm. the cut surface was grey tan in appearance. On microscopy the tumour was circumscribed with tumour cells arranged in compact, tubular to microcystic pattern. The cells are large granular with pale staining cytoplasm with numerous intracytoplasmic and extracytoplasmic vacuole filled with intensely eosinophilic material that was found to be PAS positive. The nucleus was ovoid with small nucleoli. No mitosis or necrosis was observed.

Based on above findings a diagnosis of secretory carcinoma breast was given on histopathology which subsequently confirmed the cytological diagnosis of secretory carcinoma breast.



**Fig. 1:** Smears were cellular showing monotonous tumour cells arranged in loose sheets and singly scattered in a thick proteinaceous background. The cells were round to oval with abundant pale to granular cytoplasm with both intracytoplasmic and extracytoplasmic vacuole and occasional signet ring type cells. (Giemsa: 40 x)



**Fig. 2:** Section showing intracellular and extracellular dark pink PAS positive material in secretory carcinoma (PAS stain:40x)

## Discussion

Secretory carcinoma is a rare malignant low grade tumour of breast, predominantly affecting adolescent and younger age group with distinct histopathology type.<sup>[1]</sup>

On cytology malignant nature of the tumor were established by high cellularity and absence of bimodal cell population with monotonous cell population of round to ovoid epithelial cell population of cells showing minimal atypia and pleomorphism ruling out the cytological differential like lactational adenoma.<sup>[4]</sup> The presence of intracytoplasmic and extracytoplasmic vacuole and occasionally signet

ring type cells were filled with homogenous eosinophilic material representing the secretory component of the tumour. The mucosubstances is strongly PAS positive and diastase resistance, and also shows positivity with alcian blue<sup>[5]</sup>.

It more commonly affects females. It is a low grade carcinoma with a solid, microcystic and tubular architecture. The tumor is called secretory because the tumour cells produce abundant intracellular and extracellular material. Immunohistochemistry shows that the tumour cells are often found positive to EMA, alpha lactalbumin and S 100 and negative for estrogen receptor.<sup>[6]</sup>

Treatment included simple mastectomy with axillary lymph node dissection as frequency of axillary metastasis is as common as the other breast cancer. The tumour is of good prognosis especially in children with tumour recurrence of up to 20 years, although metastasis and tumour recurrence were noticed more in adult. A long term follow-up is advised as late recurrence is often noted in these tumors.

### **Conclusion**

Secretory carcinoma is an extremely rare malignant breast tumour. A very strong clinical suspicion is needed for establishing clinical diagnosis of secretory carcinoma. FNAC can act as a rapid and effective diagnostic tool for early diagnosis and helps in definite surgical management.

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### **Competing Interests**

No

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