

## Secretary Breast Carcinoma - Case Report

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## 1. Abstract

Secretary carcinoma is a very rare subtype of breast carcinoma. These tumors are generally associated with a favourable prognosis, although having triple-negative phenotype (oestrogen receptors (ER), progesterone receptors (PR) negative and c-erbB2 (HER2) negative). In presentations rare secretary carcinoma of the breast in woman age 41years is discussed and the literature is reviewed [1].

## 2. Introduction

Secretary breast carcinoma (SCB) is a very rare type occurring among all the types of breast carcinomas. According to the newest published analyses it occurs in 0,02-0,15% of all types of carcinomas of the breast [1,2]. It had been described for the first time by McDivitt and Stewart 1966 as “juvenile breast carcinoma) for it’s occurrence mostly among the population of children and adolescents [3]. However later the occurrence was discovered within the population of different age groups and not only in women but also among men therefore it has been “renamed” according to it’s histopathological findings into “secretory breast carcinoma” [4]. In 2012 World Health Organisation (WHO) defined this type of carcinoma as slow growing epithelial tumour associated with translocation including solid microcytic and tubular architecture with intracellular and extracellular secretory material producing cells [5]. According to it’s rare findings, most information material is acquired on the basis of analysing years of cases back in time which may be misled by different approach in diagnostics but also in fol-

lowed therapy and after-watch of unknown numbers patients with SBC. The latest publication which analyses 44 patients with SBC is based on analysing patients in years 1986 - 2014 [1]. Meantime there were no guidelines in therapy of secretary breast carcinoma established by this time.

Secretary breast carcinoma has been described in groups of various ages 3-86 years old however mostly suffered by women (ratio 1:6 up to 1:31 comparing to men) [2,6,7]. Clinical findings are dominated by occurrence of non-painful resistance with either clear or unclear borderlines. SBC is typical by it’s slower growth than other types of breast carcinomas. There were sizes between 1 - 16 cm [1]. Ultrasound diagnostic method describes this type as small benign mass with variations of intraductal lesions which may cause a false diagnosis. In retrospective study Li et al. in 2019 described imprecise findings in ultrasound diagnostics in 22,2% and in mamographic diagnostics in 29,6%. The reasons that it’s been described as benign lesion. This presumption has been misled by findings of clear borderlines. Mamography and ultrasound are therefore limited diagnostic methods and should be combined for leading to more precise diagnostics [1].

Definite diagnosis can be acquired by histopatologic findings. However, the chance of diagnostics error is high caused by different morphologic picture which may “confuse” the pathologist. Importance in differential diagnostics into differentiate lipid-rich carcinoma, acidic cell carcinoma, cystis hypersecretory carcinoma, invasive ductal carcinoma, glycogen-rich carcinoma, tubular

carcinoma as well as benign proliferative epithelial lesions and not the less changes caused by lactation or by lactation adenoma [8,9]. Typical histopathological finding is defined by presence of great mass of secretory material inside and around tumour cells combined with PAS and DPAS or AB positivity. Large number of SBC includes all three histological types (solid, tubular and microcystic) with different proportions. Tumour cells have few findings of atypia with rare mitotic activity [10,11]. Positivity of oestrogen and progesterone receptors (ER and PR) are described mostly in SBC in adults comparing to lower positivity in children where the receptors remain mostly negative [12]. Li et al. in 2019 describe presence of ER and PR in secretory breast carcinoma more often however they do not differentiate neither prognosis nor survival rate comparing to patients with ER and PR receptor negativity. Amplification of HER-2 receptor may or may not be present. The proliferation index is low and likewise is the expression of Ki-67 (1 - 50%). It is suggested that absence of high expression of Ki-67 is associated with inhibition of tumour cell growth and tumour metastasis which leads to better prognosis [1]. There are typical findings of balanced translocation [12, 15] in secretory breast carcinoma and this translocation includes ETV6-NRK3 fusion [13-16].

Surgical approach should be considered as primary therapeutic modality however until now there are different publications on how the range of surgical treatment should be performed. The same approach is taken in cases of neoadjuvant and adjuvant chemotherapy and post-operative radiotherapy are disputed.

Breast saving modifications, modified radical mastectomy and radical mastectomy are the most common approaches taken by surgeons in adult population while simple mastectomy with local extirpation with sentinel node biopsy and complete axillary dissection is considered as sufficient range of surgery in children [17]. Some studies describe sentinel node biopsy as sufficient method for defining secretory breast carcinoma effectively [18]. As an important criterion there is mass growth which when less than 2 cm, presence of metastatic lesions in axillary nodes is rare [19]. However, occurrence of 3 or more positive lymph nodes the prognosis becomes worse [20]. Soyer et al. in 2015 first recommended chemotherapy and radiotherapy in tumour larger than 2cm right after surgery [21]. In general, it is suggested that the radiotherapy leads to higher survival rate for specific disease [20]. Li et al. in 2019 in their study according to this acknowledgment suggested conservative surgical approach and biopsy of sentinel node in case of tumour smaller than 2 cm with clear borderlines excluding suspicion for metastases in axillary lymph nodes [1]. Nonprecedently local recurrence is described after conservative surgical treatment and therefore the approach should be considered individually in each case [1,22].

### 3. Case Report

41-year-old patient was admitted to II. Surgical clinic for elective mastectomy. She was observed in out-patient mammalogy ward for papillomatosis of left breast. The core-cut biopsy was performed in upper medial quadrant of left breast with histological verification of invasive ductal carcinoma. Ultrasound and mamographic findings pointed to multifocal tumour. Computer tomography of thorax was negative for parenchymatous changes, mediastinum, hilus and both axillae were negative in meaning of lymph node enlargement. Arterial and venous structures without pathologic findings another was no fluid thorax in picture. There was acuity of hyperthyreosis and benign hyperbilirubemia in patient's history.

before surgery the bodily functions as blood pressure and pulses were in normal, 130/90 mmHg, 89 BPM, temperature 37,6 C without any contraindications for upcoming surgery.

There was mastectomy with pillar exenteration performed. During preoperative histology exam from amputated breast with nipple and fat tissue of axilla there was finding of small mass of invasive carcinoma approximately 2,6 cm. There were findings of microscopic masses of invasive carcinoma located in suspicious areas and marked during preoperative ultrasound examination for ensuring or certainty of multifocality of lesions to indicate radical mastectomy.

Postoperative period was without complications, operation wound were healing properly, stitches left in situ until 10th postoperative day, Redon drainage ex 5th day, patient realimented with good toleration, without increasing of body temperature and clinical picture sufficient for discharge on 5th day after surgery.

After receiving definitive histology, the findings showed small lesion of invasive carcinoma with mostly tubular and microcystic type of growth with evident secretion of alcian-positive contents into micro lumens with signs of intraductal spreading. Tumour cells with signs of core atypia without mitotic activity. According to histomorphology and IHC profiling these findings suggested secretory breast carcinoma. There were changes of hyaline stroma with disperse acines and slight ductal dilatation without signs of malignancy. In axillary fat tissue was a reference of 15 lymph nodes without tumorous infiltration. There were findings of disperse small acines a more ducti in sclerotic stroma. Few of them showed signs of atypical intraductal hyperplasia mostly cribriform type without invasive growth.

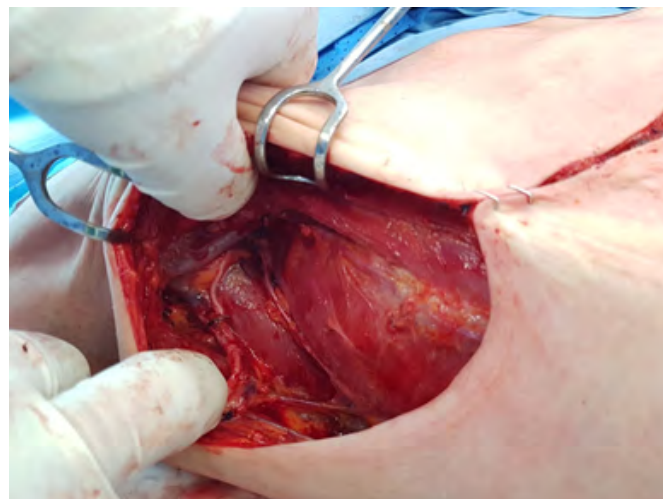
Histologic findings of ablated left breast with small secretory carcinoma area alongside preoperative excision with atypical intraductal hyperplasia in area of upper medial quadrant. rest of parenchyma with signs of fibrosclerotic changes without neoplastic changes. Orientational histological grading: 1. IHC profil: ER negative, PR negative, CK5 positive, HER2 negative, Ki 67: 5 - 7% (which is typical for this type of carcinoma).



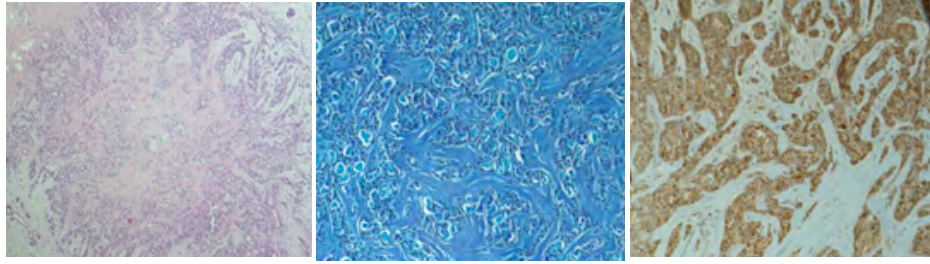
**Figure 1:** Radical mastectomy



**Figure 2:** Radical mastectomy



**Figure 3:** Axillary exenteration



**Figure 4:** Histopathological findings in secretory breast carcinoma

#### 4. Discussion

Secretory breast carcinoma is a rare type of breast cancer mostly in young adolescent population [3,4]. This type of breast carcinoma occurs in men and has much worse prognosis [24]. Secretory breast carcinoma is mostly unifocal but in our case it was multifocal carcinoma in non-typical age group of women.

Primary therapeutic approach is surgical intervention. Sentinel lymph node biopsy is recommended according to the factor 30% occurrence of axillary metastases in patients with tumor larger than 2 cm (1). In case of our patient, it was tumor lesion approximately 2,6 cm without axillary metastases.

In case of occurrence of small located mass in young patient, or case of multifocal masses of tumor without signs of axillary lymphadenopathy this mass shows signs of low-grade histomorphology type but has IHC triple negative profiling. Therefore, it is suspicion for secretory breast carcinoma in place of differential diagnosis. It is suggested to confirm preoperative pathological findings by GC colouring for confirming mucus active cells.

#### 5. Conclusion

There's a good knowledge of histologic diagnostics of secretory breast carcinoma necessary to avoid wrong diagnosis in preparation biopsy. The problematic topic of this type of tumor consists in primary diagnostics while it belongs to the group of rare tumors and in basic panels of immunohistochemical colouring applied in core-cut sample there is importance of confirmation of mucus active cells which is typical for mucinous carcinoma. In this case report is suggested that in the core-cut sample we caught just that part of tumor which showed histomorphologic signs of tubular growth or microcytic growth. However, in histomorphological profiling of this tumor there was suspicion for triple negative invasive ductal carcinoma (ER-, PR-, HER-2 negat.).

If this specific patient had multifocal triple-test negative invasive ductal carcinoma we would expect: a) metastatic lesions of axillary lymph nodes, b) histomorphological findings of cellular atypia with high mitotic activity but low if ever any signs of tubular structures. On the other hand in cases of secretory breast carcinoma there is minimal, finding of cellular/nuclear atypia, cores are uniformed and blunt, mitotic activity is very low which altogether leads to disputable conclusion right in primary biopsy combined with IHC profiling.

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