CASE REPORT


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# Accessory breast – an anomaly to live with: a case report and literature review

## Akcesorna dojka – anomalija sa kojom se živi: prikaz slučaja i pregled literature

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**Abstract**

**Introduction.** During normal fetal development, between the second and third months of gestation, the thoracic ridge forms from the milk line on the front part of the chest at the level of the fourth intercostal space, while the remaining parts involute. If this tissue fails to involute, ectopic breast tissue develops, with or without the nipple-areola complex. **Case report.** We present a 50-year-old female patient who was examined for pain in the right breast region one month after a traffic accident. The performed clinical examination, ultrasound, and mammography confirmed the presence of an accessory breast along the left inframammary milk line without any pathological changes. Throughout her life, the patient has experienced no issues with her breasts or other organ systems, except for cholecystitis, for which she underwent gallbladder surgery several years ago. Given that the patient has had no problems so far, she was advised to have a breast ultrasound in one year and a mammogram in two years. **Conclusion.** An accessory breast is a congenital anomaly of breast tissue that clinicians should consider in patients presenting with marked subcutaneous tissue tumefaction in the mammary line region, along with an appropriate clinical picture. Since all diseases affecting normal breast tissue can also affect accessory breasts, their timely clinical recognition and treatment are necessary.

**Key words:**
**breast; congenital abnormalities; diagnosis.**

**Apstrakt**

**Uvod.** Tokom normalnog razvoja fetusa, između drugog i trećeg meseca gestacije, od „mlečne linije" se na prednjem delu grudnog koša, u nivou četvrtog međurebarnog prostora, formira grudni greben, dok preostali delovi involuiraju. Ukoliko ne dođe do involucije tog tkiva, dolazi do razvoja ektopičnog tkiva dojki, sa ili bez kompleksa bradavice-areole. **Prikaz bolesnika.** Prikazana je pacijentkinja stara 50 godina, koja je pregledana zbog bola u regiji desne dojke, mesec dana posle saobraćajne nesreće. Učinjenim kliničkim pregledom, ultrazvukom i mamografijom dokazano je prisustvo akcesorne dojke duž leve „mlečne linije", inframamilarno, bez patoloških promena. Osim holecistitisa, zbog čega joj je operisana žučna kesa pre više godina, pacijentkinja ranije nije imala druga oboljenja, niti bilo kakav problem sa dojkama. S obzirom na to da pacijentkinja ranije nije imala tegobe, savetovan joj je ultrazvučni pregled dojki za godinu dana i mamografija za dve godine. **Zaključak**. Akcesorna dojka je urođena anomalija tkiva dojke, koju kliničari treba da razmotre kod pacijenata koji imaju izražen otok potkožnog tkiva u regionu „mlečne linije", uz postojanje odgovarajuće kliničke slike. S obzirom na to da sva oboljenja koja se javljaju u normalnom tkivu dojke mogu zahvatiti i akcesorne dojke, neophodno je njihovo pravovremeno kliničko prepoznavanje i tretman.

**Ključne reči:**
**dojka; anomalije; dijagnoza.**

### Introduction

Breasts in women represent mammary glands, which are the largest skin glandular tissue in a woman's body. Breast development begins in the fifth week of gestation when ectodermal folds appear on the ventral side of the fetus that extend from the axilla to the groin and are called milk lines [1, 2]. During the normal development of the fetus,

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in the period from the second to the third month of gestation, a thoracic ridge is formed from this line on the front part of the chest at the level of the fourth intercostal space (orthotopic breast), and the remaining parts involute. If the involution of this tissue does not occur, the development of ectopic breast tissue [polymastia, accessory breast (AB)] occurs, with or without the nipple-areola complex (NAC). This tissue has the characteristics of the primordial mammary gland and is, therefore, under the influence of hormonal changes that occur in a woman's body both during puberty and pregnancy [3, 4].

The prevalence of AB ranges from 0.4% to 6% in women, while in men, it ranges from 1% to 3%. The highest prevalence has been shown among Asians, especially Japanese [5, 6].

Localization of AB is predominantly in the axilla region, at the very beginning of the milk line, and it can also occur in other places (chest part of the thoracic wall, back, inguinal region, vulva, foot, etc.) [7–11]. In addition to the AB, congenital anomalies of the breast include excessive nipple (polythelia), absence of breast tissue (amastia), presence of a nipple without breast tissue (amasia), hyperplasia, hypoplasia, congenital inversion of the nipple, as well as Poland's syndrome, which consists of unilateral hypoplasia of the breast, hemithorax, and pectoral muscles. In addition to congenital, there are also acquired breast anomalies, which are most often of traumatic or iatrogenic origin [12].

**Case report**

A 50-year-old female patient was examined at the Radiology Department of the University Hospital Medical Center "Bežanijska Kosa" in Belgrade, Serbia, in February 2024 due to permanent pain in the area of the right breast, and one month after a traffic accident in which she suffered a blow to the chest region. The patient was a menopausal woman with a history of two childbirths and gallbladder surgery with a scar on the skin in a typical place (Figure 1).

On inspection, the clinical examination revealed symmetrical breast structure, with no skin retraction or nipple discharge. On the left, there was AB with a formed nipple in the plane of the milk line below the left breast. On palpation, no tumor changes or macrocysts were identified. Lymph nodes were not palpable. The patient was referred for breast and axilla ultrasound exams.

Breast and axillary ultrasound (Samsung V6) revealed the presence of AB tissue located along the mammary line, be-low the left breast. The structure of the breast was heterogeneous. No suspicious solid tumor changes or macrocysts were observed in the breasts. The cutis, subcutis, and pectoral fascia were intact. The retroareolar ducts were not dilated, and no pathologically altered axillary lymph nodes were observed. Findings were classified as Breast Imaging Reporting and Data System (BI-RADS) category 2 (benign) in the second area of the right breast (DD2), second area of the left breast (LD2), and in a third breast region (Figure 2).

**a)** **b)**

**Fig. 1 – Frontal (a) and sagittal (b) view of a supernumerary breast scar on the skin of the anterior abdominal wall, under the right breast, that represents a usual condition after gallbladder surgery performed earlier.**

Given that the last mammogram was performed seven years ago, the examination was supplemented with a mammogram of all three breasts, yielding the following findings:

"Mammography of all three breasts in craniocaudal and mediolateral oblique projections (PLANMED NUANCE EXCEL, 35kV/140mA): no suspicious tumor shadows or microcalcifications observed. BI-RADS category 2 for all three breasts. A follow-up breast ultrasound is recommended in one year, and a repeat mammography in two years (Figures 3–5)."

For the purpose of breast comparison, we took additional measurements and compared the nipple sizes of all three breasts, as well as the distances from each nipple to the submammary sulcus. We concluded that the formed nipple on the supernumerary breast was smaller compared to the nipples of the other two breasts and that the distance from the areola to the submammary sulcus of the supernumerary breast was smaller compared to the same distances of the other two breasts (Figures 6–9).

After one year, the patient came for a control ultrasound examination, where it was reported that there were no pathological changes in the breasts. Therefore, annual ultrasound examinations and mammography every two years were advised according to the screening recommendations.

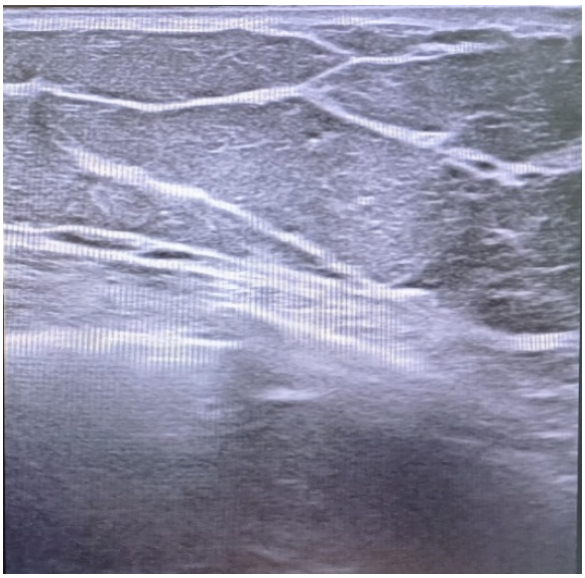
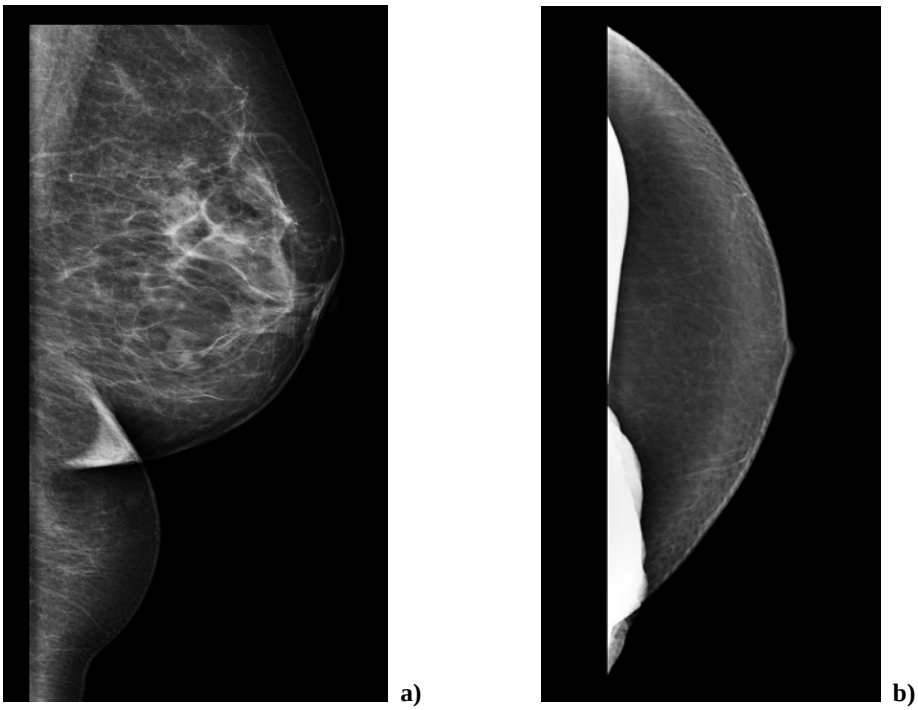
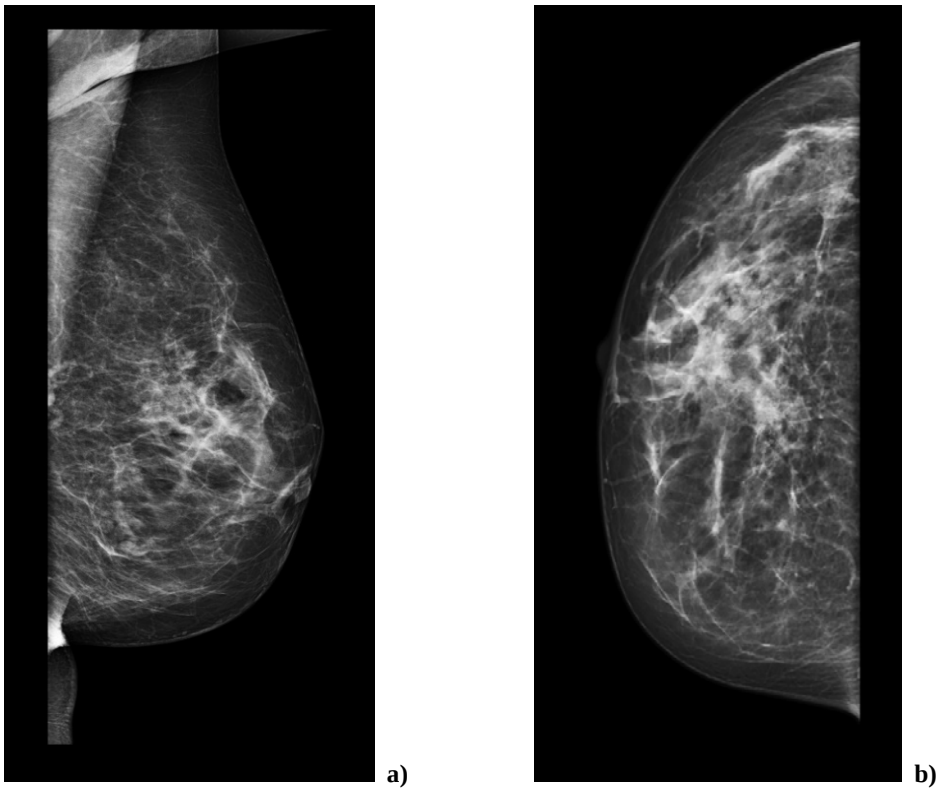


**Fig. 2 – Ultrasound image of supernumerary breast tissue.**



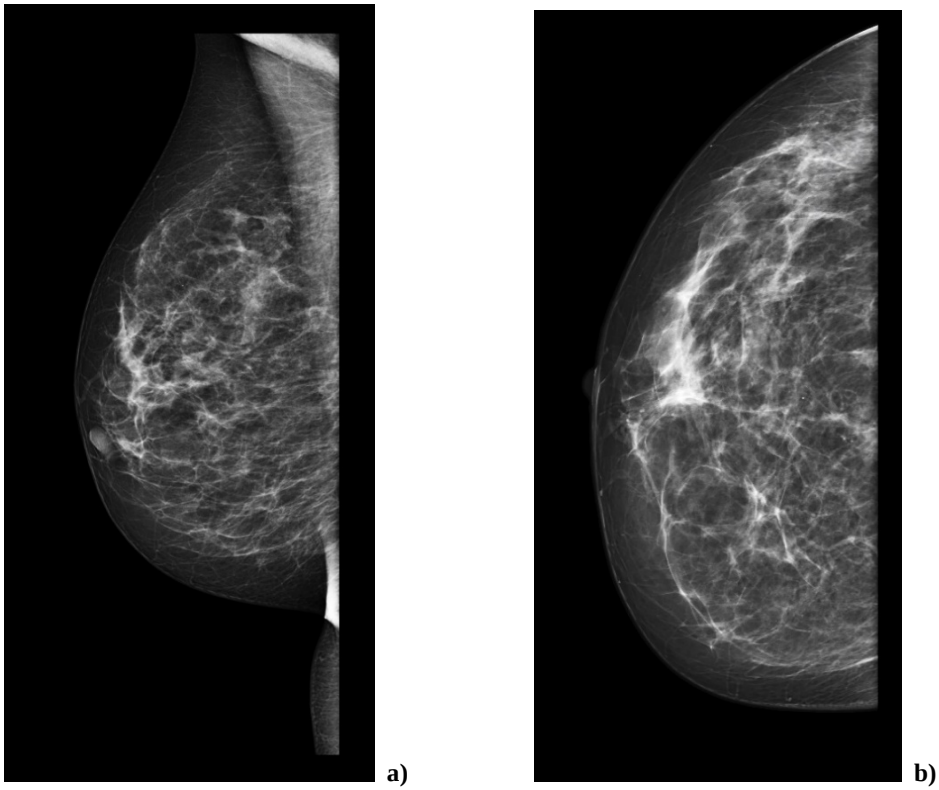
**a)** **b)**

**Fig. 3 – Mammography images of the supernumerary breast in a) mediolateral oblique view and b) craniocaudal view.**



**a)** **b)**

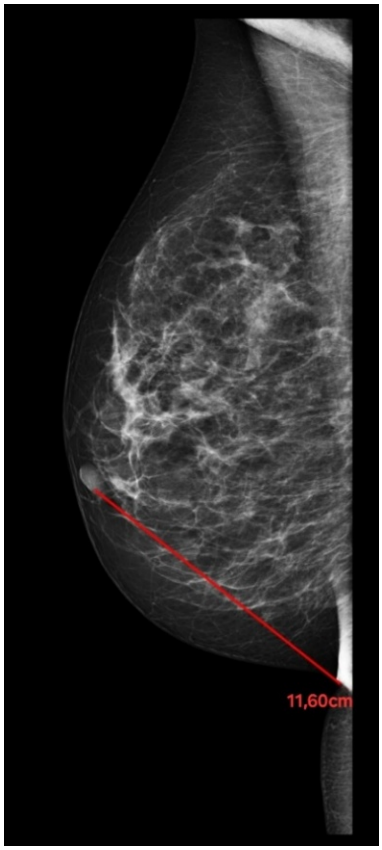
**Fig. 4 – Mammography images of the left breast in a) mediolateral oblique view and b) craniocaudal view.**



**a)** **b)**

**Fig. 5 – Mammography images of the right breast in a) mediolateral oblique view and b) craniocaudal view.**

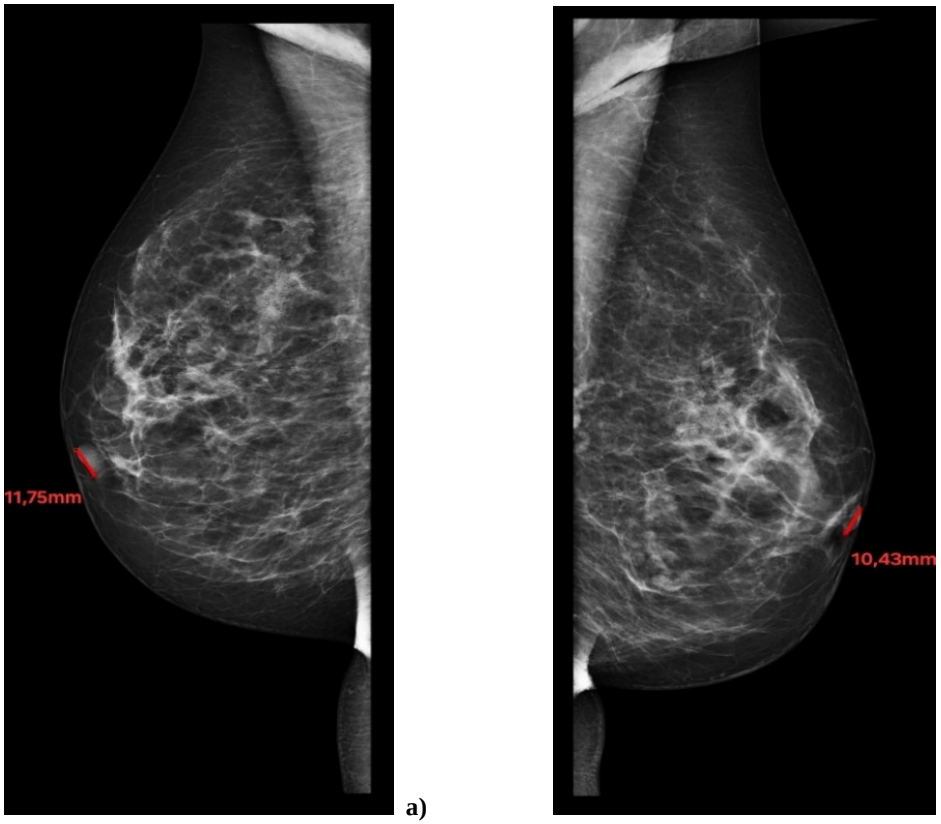

**Fig. 6 – Distance from the mamilla of the supernumerary breast to the submammary sulcus.**




**a)**


**b)**

**Fig. 7 – Distance from the mamilla to the submammary sulcus of a) the right breast and b) the left breast.**




**a)** **b)**

**Fig. 8 – Mamillary dimension of a) the right breast; b) the left breast.**


**Fig. 9 – Mamillary dimension of the supernumerary breast.**

Written informed consent has been obtained from the patient for the publication of this case report and the accompanying images.

## Discussion

Congenital anomalies are, by definition, structural or functional defects in tissues or organs that occur during morphogenesis and are visible immediately after birth or later in life. The incidence of congenital anomalies ranges from 0.4–6%, with a lower percentage in Caucasians and a higher percentage in other races [3]. As part of this phenomenon, it is clear that the incidence of minor congenital anomalies, which represent only an aesthetic problem, is unknown in our geographical area. A review of the literature shows that a smaller number of papers describe more clinical cases of ABs [13, 14]. The problems accompanying anomalies like ABs are differential diagnosis, often a non-specific clinical picture, association of ectopic breasts with other anomalies, and involvement of ectopic breast tissue by some pathological process. An AB can be the same shape and size as a normal breast, making the diagnosis straightforward. If the AB has NAC, diagnosis should not be a problem; however, the incidence of NAC in AB is low, so early diagnosis and further treatment may be challenging. If AB is smaller in size and does not have a nipple, it usually does not represent a big problem, so people rarely consult a doctor [15]. The differential diagnosis of this anomaly is particularly challenging when the tissue is localized in the axilla, as it is often mistaken for an enlarged lymph node or, if unilateral, a benign soft tissue tumor [16]. An AB can be associated with various other malformations and may therefore be considered a marker for additional anomalies. If it occurs in men, it can be related to various organic malformations where certain organs grow faster than other parts of the body, both prenatally and postnatally [3]. AB is associated with anomalies in the development of the urinary tract, which is explained by the parallel development of the breast and the genitourinary system. AB is also associated with anomalies of the heart and central nervous system [17]. It is important to emphasize that the AB tissue is susceptible to all diseases that affect "normal" breasts. The same pathological conditions, inflammations, and various benign or malignant diseases that can be found in normal breast tissue can also be seen in ectopic tissue. To date, cases of benign cysts, adenomas, fibroadenomas, schwannomas, and AB carcinomas have been published [18–20]. Malignant tumors arising in ABs are rare but should not be ignored as a possibility. According to literature data, the incidence of AB cancer is 0.2–0.6%, and diagnosis and treatment are identical to the case of localization of the pathological process in normal breast tissue [21]. Cases of AB with galactorrhea have also been described in the literature [22].

In addition to the physical aspects, AB is also a psychosocial problem, both during puberty, when it is most often recognized as the breast tissue begins to swell, and during pregnancy and lactation, when the breasts usually enlarge. Interestingly, our patient had no problems during the generative period of life. Surgical treatment is the method of choice in treating AB. Given the association of this congenital malformation with other anomalies, a thorough examination of all organ systems, especially the urogenital system, is indicated. Since AB can be affected by various pathological processes, it is necessary to perform a preoperative ultrasound or, if needed, a mammography or magnetic resonance imaging. After radiological diagnostic procedures, a biopsy is performed, and only after histopathological verification is surgical excision with extirpation performed. Liposuction can sometimes be one of the modalities in the treatment of AB. Complex reconstructive procedures are usually not required after surgical intervention, which has been shown to be best done before pregnancy, considering that pregnancy, due to hormonal changes, can lead to *de novo* complaints or worsening of the existing ones [4, 22, 23]. Patients who do not want surgical treatment should be clinically monitored from time to time and educated about the risks they are exposed to.

Many published papers report a manifested pathological process in the AB tissue, most often cancers of various pathohistological structures. However, in the past 17 years, only two papers have been published in Serbia – one was related to pathological changes in the AB tissue [24], and the other was related to surgical correction of the AB tissue without pathological changes [25]. Aside from that paper, there are no other published studies in Serbia on the topic of AB without pathological changes that did not cause somatic or psychological issues in the patient during her life. Our report is unique precisely because it shows a patient who lived most of her life, including the entire generative period, with an AB but without problems and also without pathological changes in the other organ systems.

## Conclusion

An accessory breast is a congenital anomaly of breast tissue that clinicians should be aware of in patients with marked tumefaction of the subcutaneous tissue in the mammary line region. Additional breast-related symptoms such as cyclic changes of ectopic tissue (swelling, pain) during menstruation, tissue enlargement in pregnancy, postpartum milk secretion from accessory nipples, as well as the specific location, should guide the clinician towards the diagnosis of accessory breast. Early diagnosis of accessory breast and proper surgical treatment with histopathological examination of ectopic tissue represents the gold standard that should lead to optimal results and a high degree of patient satisfaction. Since all diseases that can affect normal breast tissue may also occur in accessory breasts, timely clinical recognition and treatment are necessary, along with regular annual monitoring.

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