



# A rare case of mammary duct ectasia in bilateral axillary accessory breast- A Histopathological Diagnosis

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## ABSTRACT

Accessory breast is the ectopic breast seen along the milk line and Mammary duct ectasia is abnormal dilatation of the mammary ducts seen in multiparous perimenopausal women and rare in younger individuals. Though accessory breast and duct ectasia are relatively common clinical conditions on their own, their coexistence in younger age is rare. Here presenting a case of female patient aged 30 with complaints of swelling and discomfort in bilateral axilla diagnosed solely on histopathology as Mammary duct ectasia in bilateral axillary accessory breast. History with strong clinical suspicion, imaging experience and specific cytologic criteria is required for clinical, radiological or cytological diagnosis, particularly in younger age groups. Histopathology is gold standard for final diagnosis.

**Key-words:** accessory breast, mammary duct ectasia, periductal mastitis

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## INTRODUCTION

Accessory breasts also called as Supernumerary breast or Polymastia is the ectopic breast tissue. It can be seen anywhere along the milk line from axilla to groin but are most commonly seen in the anterior axillary line [1,2]. Accessory breast is seen in 0.2–6 per cent of the general population and are more common in Asian women. Accessory breast tissue may be asymptomatic or symptomatic causes pain, restriction of arm movement, cosmetic problems or anxiety [3]. They are bilateral in one-third of women [1,4].

Mammary duct ectasia is defined as abnormal dilatation of the central milk ducts associated with chronic inflammation and fibrosis. It is an unusual condition with unknown genesis in the breast seen in multiparous perimenopausal women mostly in 5<sup>th</sup> or 6<sup>th</sup> decade. It is also seen in younger women, children and men [5,6]. Mammary duct ectasia has also been referred to as varicocele tumor, comedomastitis, periductal mastitis, stale milk mastitis, chemical mastitis, granulomatous mastitis, or mastitis obliterans. Most of the cases probably represent a localized response to different components of stagnant secretions. It is found in 2-6% of women and 1-3% of males [7]. Though accessory breast and duct ectasia are common clinical condition on their own, their coexistence is extremely rare entity [8] They present with swelling, pain, discomfort with discharge. Ultrasonography, Mammography and MRI are the different imaging modalities used for the diagnosis. Fine-needle

aspiration cytology is nonspecific. Biopsy with histopathological diagnosis is specific and confirmatory [9]. Because of rare occurrence in its coexistence, bilateral nature and presentation at younger age and diagnosis solely with histopathology, we are presenting this interesting case report.

## Case report

Here we present a case of 30 years old married female presented with complaints of swelling in bilateral axilla for 4 years and discomfort with mild pain for 8 months. Swelling was more on left side. General physical examination and systemic examination were within normal limits. Local examination revealed swelling in bilateral axilla, soft in consistency which was mobile and nontender. There were no skin changes or discharge from the swelling. Ultrasonography and fine needle aspiration cytology was done outside few months back which was reported as bilateral axillary lipoma. Based on clinical presentation and available imaging and cytology reports, diagnosis of bilateral axillary lipoma/accessory breast tissue was made. Surgical excision of bilateral axillary swelling was done and tissue was sent for histopathological examination. Specimens received in Dept of Pathology, CDSIMER in two separate formalin filled containers labelled right and left axillary swelling. The gross examination of both specimens showed multiple fibro fatty tissue fragments. Cut surface showed grey white thickened areas (Figure 1: A & B).

**Figure 1(A&B): Cut surface of both specimens showing grey white thickened areas**

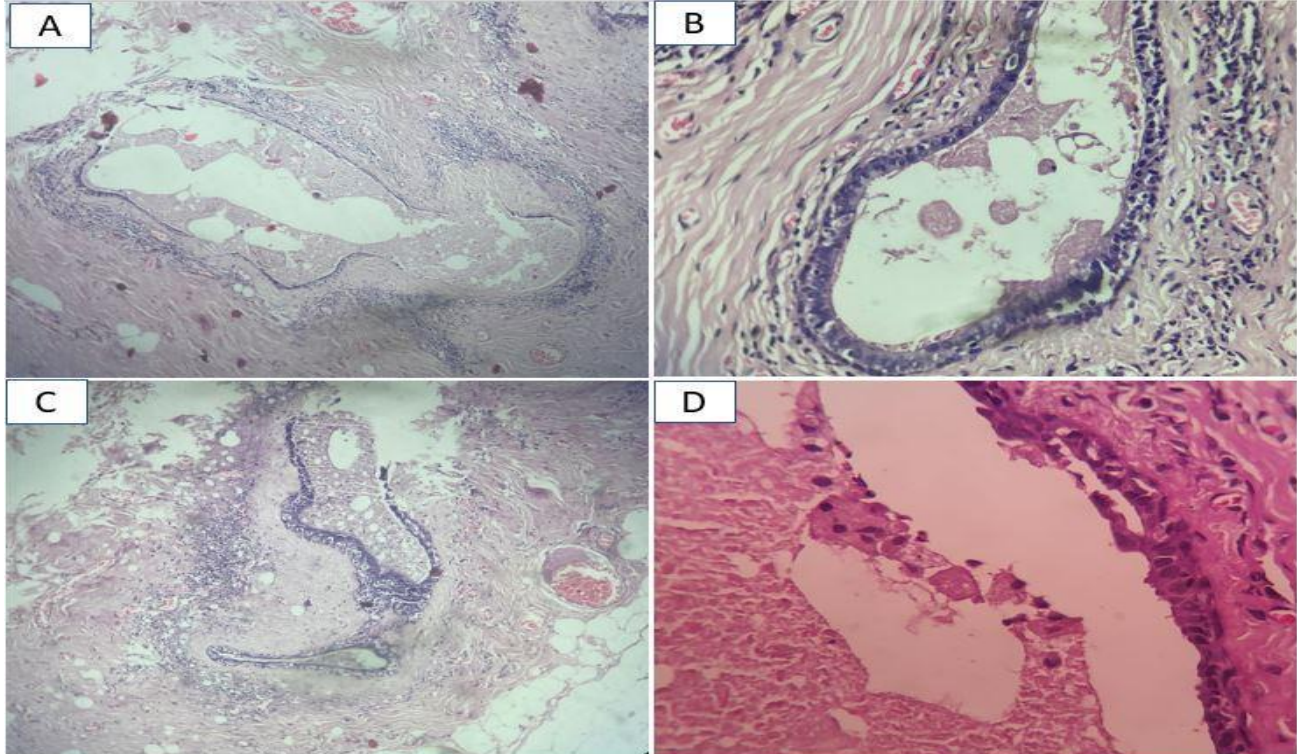


**Figure 1: A - Specimen from Container 1: Right axillary swelling. B - Specimen from Container 2: Left axillary swelling. Cut surface of both specimens showing grey white thickened areas.**

Tissue bits were given from representative areas and sent for processing, embedding and staining. Microscopy of both axillary tissues showed dilated mammary ducts filled with inspissated granular eosinophilic material and histiocytes. Periductal

fibrosis and chronic inflammatory cell infiltrate was also noted (Figure 2: A, B, C & D). Histopathological diagnosis of Mammary duct ectasia in bilateral axillary accessory breast was made.

**Figure 2(A,B,C & D): Histopathological diagnosis of mammary duct ectasia in bilateral axillary accessory breast**



**Figure 2 (H&E):** *A* - Photomicrograph of right axillary swelling showing dilated mammary ducts with eosinophilic granular material with periductal dense inflammatory infiltrate (10X). *B*: Photomicrograph of right axillary swelling showing dilated mammary ducts with few histiocytes (40x). *C*: Photomicrograph of left axillary swelling showing dilated mammary ducts with inspissated eosinophilic granular material with periductal dense inflammatory infiltrate and fibrosis (10X). *D*: Photomicrograph of left axillary swelling showing dilated mammary ducts with histiocytes (40x).

## DISCUSSION

Accessory breast tissue results from incomplete regression of primitive milk streak of embryo formed during the 5th week of embryonic development which extends from axilla to the groin. Milk streaks develop into mammary ridge, which later develops into anatomically situated breasts [3,10]. During development mammary ridges resolve, except for two segments in the pectoral region, which later develop into breasts. Failure of any portion of the mammary ridge to involute can lead to ectopic breast tissue with or without a nipple-areolar complex called as Accessory breast tissue or supernumerary breast or Polymastia [11,12]. Although milk line is the

commonest site, rarely it can appear on atypical locations such as the face, vulva, perineum, posterior neck, thigh, shoulder, and upper extremities [13]. The accessory breast tissues are asymptomatic most of the times and present with just swelling resembling a tumor. It can cause psychological disturbances in patients and it may give pain and discomfort, especially during menstruation, pregnancy, and lactation [12,13]. Apart from the psychological and cosmetic problems, it can rarely develop the pathological changes as in the normally located breast tissue such as fibroadenoma, phyllodes, inflammation, fibrosis and carcinomas. Duct ectasia in accessory



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breast tissue is very rare entity [12,14].The mechanism of duct ectasia is not clearly defined. Haagensen et al in 1951 reported that duct ectasia begins with dilatation of the extralobular ducts beneath the nipple and areola. They become distended with cellular debris and lipoid material [15]. The process commonly begins after menopause, although it is occasionally seen in younger women. The initial phase of duct ectasia is usually asymptomatic because of absence of inflammation [5]. As the disease progresses, the duct dilatation extends peripherally, at this stage histology reveals duct dilatation accompanied by inflammatory changes and patients become symptomatic.

When symptomatic, the commonest clinical presentation is discomfort and nipple discharge. The discharge is generally yellowish or brownish but may finally become blood tinged. The discharge is spontaneous and intermittent [15]. The material distending the ducts irritates and causes thickening of the duct walls by fibrosis secondary to inflammation. Here in this case patient had presented with swelling in bilateral axilla with mild pain and discomfort, however there was no history of skin changes or discharge possibly because of absence of nipple in axillary breast. Imaging modalities like ultrasonography, mammography and MRI are very helpful in distinguishing duct ectasia from other benign entities and carcinomas. Ultrasonography shows ectatic ducts with anechoic tubular structures having smooth walls. Inflammatory infiltrates appear as soft tissue nodules within ectatic ducts

having no flow on color Doppler. It can also show calcifications which can mimic carcinoma. Mammography and MRI are more specific [16,17]. Here in our case USG of bilateral axillary swelling was done elsewhere which was reported as bilateral axillary lipoma possibly because of absence of calcification and inflammatory soft tissue nodules.

FNAC of this entity is nonspecific however Javadzadeh B et al in 2001 established specific cytological criteria for duct ectasia [18]. In our case, FNAC was also done elsewhere and it was reported as bilateral axillary lipoma possibly because of potential sampling error and limited cytologic material. In the present case final diagnosis of duct ectasia was made on histopathology. Gross examination showed fibrofatty tissue with focal areas of thickening. Whereas microscopic examination showed dilated mammary ducts filled with granular eosinophilic material and histiocytes along with periductal fibrosis and chronic inflammatory cell infiltrate. These microscopic features were classical of duct ectasia stated by Haagensen et al [15].

### CONCLUSION

Although axillary accessory breast and duct ectasia of breast are relatively common entities, the coexistence of duct ectasia in bilateral axillary accessory breast is rare particularly in young age group. History with strong clinical suspicion, imaging experience and specific cytologic criteria is required for clinical, radiological or cytological diagnosis, particularly in younger age groups. Histopathology following excision biopsy is gold standard for final diagnosis.

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