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Breast conservation with batwing mastopexy for the management of giant juvenile fibroadenoma: A case report of a 12-year-old girl

Dev juvenil fibroadenomun yönetiminde batwing mastopeksi yöntemi ile meme koruyucu cerrahi: 12 yaşında bir kız çocuk olgu sunumu

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Abstract

Fibroadenomas are benign breast tumours consisting of epithelial and stromal components. Most of them are about 1 to 2 cm in size. It is defined as “giant” when the fibroadenoma is larger than 5cm, weighs more than 500 g or occupies for at least 80% of breast volume. It is usually encountered in patients of less than 20 years of age. Progressively growing mass and its large size cause a suspicion of malignancy. It presents as unilateral macromastia that causes breast asymmetry. Excellent cosmetic results cannot be obtained with simple excision in this situation. We aimed to present a case of a 12-year-old patient with a diagnosis of giant juvenile fibroadenoma. In this case, we performed surgical excision with Batwing mastopexy of the breast to achieve optimal symmetry with contralateral breast.

Key words: Batwing, fibroadenoma, mastopexy, breast, symmetry

Öz

Fibroadenomlar, epitel ve stromal bileşenlerden oluşan iyi huylu meme tümörleridir. Çoğu yaklaşık 1 ila 2 cm boyutlarındadır. Fibroadenom 5 cm'den büyükse, 500 g'dan fazla ağırlığa sahipse veya meme hacminin en az % 80'ini kapladığında "dev" olarak tanımlanır. Genellikle 20 yaş altı hastalarda görülür. Kitlenin progresif olarak büyümesi ve boyutları, malignite şüphesine neden olur. Genellikle meme asimetrisine neden olan tek taraflı makromasti olarak kendini gösterir. Bu durumda basit eksizyon ile mükemmel kozmetik sonuçlar elde edilemeyebilir. Dev juvenil fibroadenom tanısı alan 12 yaşında bir hastayı sunmaktayız. Bu durumda, kontralateral meme ile optimal simetri elde etmek için Batwing mastopeksi tekniği ile cerrahi eksizyon yaptık.

Anahtar kelimeler: Batwing, fibroadenom, mastopeksi, meme, simetri

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Introduction

Fibroadenomas are benign breast tumours consisting of epithelial and stromal elements and occur in approximately 10 percent of women [1]. The exact etiology and pathogenesis underlying fibroadenomas is not clearly understood. It has been reported that it can be associated with the use of hormonal contraceptives or detection of Epstein-Barr virus [2]. Most of them are about 1 to 2cm in size. Growing rapid of fibroadenomas usually slows down when they reach 2 to 3cm in size [3]. It is defined as "giant" when the fibroadenoma is larger than 5cm, weighs more than 500 g or occupies for at least 80% of breast volume. Giant fibroadenoma of the breast usually occurs in patients younger than 20 years of age [4, 5]. Fibroadenomas are ought to be benign lesions but they have tendency to grow faster. This feature may suggest the possibility of malignancy and it may need a comprehensive differential diagnosis. The epithelial component of fibroadenoma may be the origin of the malignant tumors especially lobular carcinoma. Unilateral fibroadenomas occur with a serious breast asymmetry due to their rapid enlargement; therefore they cannot be improved with just a simple surgical excision. Batwing mastopexy is an oncoplastic technique for periareolar lesions in the upper central breast and especially for lesions in pitotic breasts [6]. This method also can be applied in the treatment of giant fibroadenomas.

Case report

A 12-year-old female patient referred to the surgical department of our hospital with a complaint of fast-growing, painful mass of her right breast that she first noticed 6 months ago. Patient reported that her menarche onset age was 11 and stated that her menstrual cycle pattern was also normal. The patient has no family history of breast disease or family history for cancer.

Physical examination, showed a palpable mass larger than 10cm in upper outer quadrant of the right breast. The mass was almost completely filling the right breast. The mass caused the unilateral enlargement of the right breast and asymmetrical appearance compared to her left side (Figure1). Clinical examination of the left breast was normal and there was no axillary lymphadenopathy.

Figure 1: Enlarged right breast due to a giant juvenile fibroadenoma mass.

Breast ultrasonography was performed via high frequency (6-11 MHz) linear transducer. Breast ultrasound revealed a homogeneous, hypoechoic, solid mass in upper outer quadrant of the right breast with a diameter of 134x91mm that filled the breast almost completely. No axillary nodes were noticed in the bilateral axilla. Phyllodes tumors, juvenile breast hypertrophy, giant lipomas and hamartomas were considered for differential diagnosis. Ultrasound guided core needle biopsy (CNB) was performed and the biopsy result was reported to be compatible with pseudoangiomatous stromal hyperplasia. Due to clinical suspicion and cosmetic reasons, the patient was subjected to surgical intervention. Surgical excision was performed using the Batwing mastopexy technique. The postoperative follow-up was uneventful; the patient had excellent cosmetic results. Breasts were a in perfect symmetry and the right breast matched to the size and shape of the other breast (Figure 2). The macroscopic assessment of pathology specimens showed homogeneous cut surface and encapsulated lobular contour with a tumour size of 22x18x7cm (Figure 3, 4). The excised mass weighed 1600g. After surgical excision, histopathology confirmed the diagnosis of giant juvenile fibroadenoma with pseudoangiomatous stromal hyperplasia in the focal areas. Atypia or pleomorphism was not observed.

Written informed consent was obtained from parent for publication.

Figure 2: 1 month after fibroadenoma excision and breast reconstruction with Batwing mastopexy.

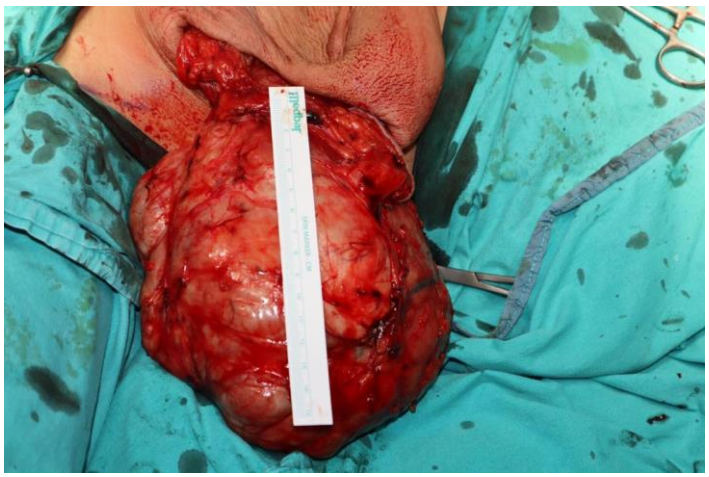

Figure 3: Macroscopic view of the excised giant fibroadenoma with well circumscribed lobulated contours.

Discussion

We report a case with juvenile giant fibroadenoma underwent a wide excision of the tumor in a 12-year old girl. Fibroadenomas are called "juvenile fibroadenoma" when the patient is under 18 years of age and usually encountered during the adolescent period [7]. The prevalence of fibroadenoma during the adolescent period is 2.2% and 1-8% of fibroadenomas are giant juvenile fibroadenomas [8, 9]. "Giant" fibroadenomas are called fibroadenomas larger than 5cm or heavier than 500grams or when the mass is greater than 80% of the normal

Figure 4: Macroscopic view of the excised giant fibroadenoma with well circumscribed lobulated contours.

breast size [4]. In our case, fibroadenoma was complex, larger than 5 cm (22cm) and its weight was heavier than 500 g (1600 g). Histologically fibroadenomas divided into two groups which are simple and complex. Most of them are benign breast lesions, but the risk of malignancy increases in complex fibroadenomas. Complex fibroadenomas are differentiated from simple ones by containing different cell types [10]. Etiological factors have not been exactly known, but reproductive hormones or history of previous breast traumas are thought to be the reasons [11, 12].

Juvenile fibroadenomas are usually presented as palpable masses of the breast that are hard and movable lumps with well-defined margins. They are painless masses when they are small in size. They may become tender or painful as they increase in size or before menstrual period. In our case, she presented with a painful and rapidly enlarging unilateral breast mass. Fibroadenomas can cause breast asymmetry, nipple retraction, atrophy of surrounding breast parenchymal tissue and widened superficial blood vessels. Giant juvenile fibroadenomas may mimic malignant breast tumours because of their rapid growth. Whereas malignant transformation is rare in fibroadenomas; phyllodes tumors and adenocarcinomas should be evaluated in differential diagnosis [13, 14].

Ultrasonography is an important diagnostic method for the diagnosis of fibroadenoma and detecting masses in fibroglandular breasts. If it is required, imaging studies such as mammography or magnetic resonance imaging studies should also be performed. In our case, ultrasound was performed as the first imaging method in accordance with the age and the breast tissue density of the patient. Fine needle aspiration biopsy (FNAB) and CNB can be used in diagnosis of the suspected fibroadenoma [15, 16]. Diagnostic value of FNAB varies according to the physicians who performed and evaluated the biopsy. CNB is a more invasive procedure and has complications such as hematoma, pain or discomfort. CNB is more accurate and reliable than FNAB but the definitive diagnostic method is excisional biopsy.

There are various management methods of juvenile fibroadenoma ranging from observation to surgical management. Conservative approach is usually favored in small fibroadenomas because they are not precursor for breast cancer, and about 10% to 40% of fibroadenomas resolve spontaneously [8]. There are various surgical or non-surgical treatment methods such as simple excision, cryoablation, vacuum-assisted excisional biopsy available to remove fibroadenomas [17]. Choosing the right technique is very important, especially in terms of aesthetic. Cryoablation has negative effects on pathological evaluation and may cause suspicious residual calcifications on mammograms. It also has size limitations to perform cryoablation. It can be applied to lesions larger than 4.2 cm in diameter [18]. Fibroadenomas which are less than 3 cm are removed by ultrasound-guided vacuum-assisted excisional biopsy [19]. Breast conservation is usually feasible for fibroadenomas. Mastectomy is an aggressive method and, if it is necessary, then nipple conserving methods are recommended. Reconstructive techniques generally come into prominence in multiple fibroadenomas, giant fibroadenomas or recurrent fibroadenomas. Mastopexy, reduction mammoplasty or augmentation are supplementary techniques which should also be evaluated individually. In our case, we performed Batwing mastopexy that is also called an inverted V or omega plasty because of the incision shape. We use a semi-circular line at the upper margin of the nipple areola complex (NAC) and another semi-circular parallel line above with two angled incisions to connect these two lines in a wing-like fashion to remove the lesion in this technique. The defect is closed by pulling up the inferior breast tissue. It may be used for lesions in the upper or central breast but it should be irrelevant with NAC [20]. During surgical excision, it is necessary to pay attention to the integrity of the fibroadenoma capsule. Disrupting the capsule of the fibroadenoma in surgical treatment increases the risk of recurrence and makes it difficult to define the borders in the case of malignancy or phyllodes tumor. The recurrence rate is about 33% at the 5-year follow-up after excision [21]. The surgical excision was performed with a safety margin of approximately 1 cm. During the 1-year follow-up, she was monitored with ultrasound scanning; no recurrence or deformity of the breast was reported and the patient is satisfied with the aesthetic result.

In conclusion, symmetry is an important feature in bilateral organs such as breasts. In the giant fibroadenoma with a significant breast asymmetry, excision with the Batwing mastopexy technique has succeeded in achieving symmetry with the opposite breast in these patients. The Batwing mastopexy technique provides easy access for tumor excision and also adjusts the position and the size of the NAC to maintain normal breast and symmetry.

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