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Nipple sparing mastectomy with immediate silicone implant reconstruction for malignant phyllodes tumor in a 19-year-old girl

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Abstract. – OBJECTIVE: Due to the rarity of MPT, the clinical records in the literature, collected along decades, lack to address a modern approach to breast reconstruction after mastectomy.

CASE PRESENTATION: We report a case of a teen-aged female diagnosed to have a malignant phyllodes in her right breast.

DISCUSSION: The surgical treatment of choice, taking in account the relation between the volume of the mass and the breast dimension, was considered to be a mastectomy. As the disease didn't involve the skin envelope a nipple-areolar-sparing gland removal allowed an immediate prosthetic reconstruction with a contralateral augmentation for symmetrization, so obtaining a satisfactory aesthetic outcome.

CONCLUSIONS: At our knowledge we present for the first time this surgical approach that, in selected patients, can reach the oncologic radicality and an adequate cosmetic result too.

Key Words:
Malignant phyllodes, Implant breast reconstruction, Nipple-sparing mastectomy.

Introduction

Phyllodes tumors (PT) are a rare group of fibroepithelial neoplasms accountig for < 1% of all breast tumors[1]. In 1838, Johannes Muller first classified these tumors and named cystosarcoma phyllodes[2] for their fleshy component without referring to the malignant potential. Only in 1931 was described the first case of metastatic PT by Lee and Pack[3]. In 1981 the World Health Organization had clarified the terminology coining the term "phyllodes tumor"[4]. PT are histologically classified in three types: benign, low grade (borderline) and high grade malignant phyllodes tumor (MPT). MPT occurs in 25% of all PT[5]. The rarity of the disease implies a lack of a surgical treatment consensus[6]. Moreover few are the papers focusing on reconstruction procedure after radical surgical treatment of MPT. At our knowledge, we present for the first time in literature a case of a 19-years-old girl treated for a high grade MPT with a nipple-sparing mastectomy (NSM) and immediate implant based reconstruction.

Case Presentation

A 19-year-old female, otherwise healthy, was referred for surgery with a self-detected, rapidly growing, right breast lump of 5 cm. She had no family history of breast or ovarian malignancies. Clinical and ultrasound examination confirmed a mobile and well circumscribed and hypoechoic mass in the outer aspect of the central quadrant. Axillary region was clinically and sonographically negative.

The core biopsy obtained histologic specimen suggestive for fibroadenoma. A local excision through a circumareolar skin access was performed. Definitive histology surprisingly revealed a 5.3 cm tumor with marked and diffuse stromal cellularity, overgrowth and atypia. The maximal mitotic rate was 22.4 per 10 high-power fields. Without uncertainty it was defined as highly malignant phyllodes tumor with infiltrated surgical margins. For staging purpose a chest X-ray was performed and was negative.

In order to obtain at least 1-2 cm of safety health tissue and taking in account the small proportion of the breast, a mastectomy seemed the only feasible radical resection. The young patient had no risk factors for breast skin conservation (no smoking history, low body mass index) so a NSM was carried out through a breast lateral

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border incision. An intraoperative retroareolar tissue frozen section resulted histologically free of tumor.

Immediate reconstruction was performed creating a subpectoral pocket, laterally completed by serratus muscle partial elevation. Distal insertional fibers of pectoralis major muscle were sectioned, leaving intact the superficial fascia and the connectival structures of inframammary crease, in order to obtain the best projection of the lower pole. A silicone implant (Allergan 410-N-27-MF120-295, Allergan, Irvine, CA, USA) was inserted and, after having put in place a close-suction drain, the pocket was sutured by 3.0 absorbable monofilament.

Placing the patient in sitting position, the optimal symmetry was achieved by a contralateral prosthetic additive mammaplasty with partially submuscular (dual plane) implant of Allergan 410-N-ST-ML100-125; Allergan, Irvine, CA, USA. The postsurgical course was uneventful and the patient discharged the day after surgery. The drain removed after 10 days. The patient wore a supramammary elastic belt for two months and was referred to a dedicated physiotherapist for a cycle of manipulations obtaining the optimal softness of the prosthetic pocket and of the skin. After 1 year of follow-up, the patient remains free of disease and highly satisfied with the cosmetic results (Figure 1).

Figure 1. One-year follow-up.

Discussion

Phyllodes tumors account for less than 1% of breast neoplasms[5]. They are classified as benign, borderline and malignant[4]. MPT are defined for having a mitotic rate greater than 10 per 10 high-power-fields and should be considered an extremely rare disease, representing only 10-30% of all phyllodes; the mean age of patients is 47, exceptionally found before 20. Distant metastasis occur in 25% of cases. Although core biopsy can obtain a correct diagnosis, more than 25% of cases are confirmed only after surgical biopsy.

Clear surgical margins of more than 1 cm represent an independent predictive factor in reducing local relapse and distant metastasis incidence, influencing overall survival[5]. Local recurrence account for 14-40% after conservative lumpectomy and, by itself, adversely impact on prognosis[7,8].

Based on aforesaid evidences, mastectomy was undoubtedly the best surgical option in our case. At the same time, the comprehensibly high aesthetic expectation, made of paramount importance a reconstructive plan, possibly in an immediate setting. When a NSM can be safely performed, immediate implant-based reconstruction can achieve good results also in terms of patient satisfaction, and has been defined "conservative mastectomy"[9].

Due to the rarity of MPT, the wider series in the literature, collected along decades, do not address a modern approach to breast reconstruction after mastectomy. Moreover, most mastectomies for MPT are performed for large masses with unpreservable, suffering or ulcerated, skin. Some reports described breast reconstruction by mean of muscolocutaneous flaps, whether *latissimus dorsii* or transverse *rectus abdominis*[10].

Few others Authors recently described NSM followed by immediate reconstruction with implants, but always using Acellular Dermal Matrix (ADM) for harvesting the pocket[11,12]. At our knowledge, the case we presented is the youngest submitted to mastectomy and reconstruction and is the first described characterized by NSM for MPT and direct-to-implant reconstruction with submuscular pocket without ADM.

Conclusions

Looking at the satisfactory result, nipple-sparing mastectomy and direct to implant reconstruction, when feasible, can be safely performed treating MPT, without any detriment for both oncological outcome and surveillance.

Conflict of Interest

The Authors declare that they have no conflict of interests.

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