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Case report

ONCOPLASTIC BREAST SURGERY IN MAN, IS IT POSSIBLE? ROUND-BLOCK TECHNIQUE FOR THE TREATMENT OF A GIANT LIPOMA

¿ES POSIBLE LA CIRUGÍA ONCOPLÁSTICA DE MAMA EN EL VARÓN? TÉCNICA DE ROUND-BLOCK PARA EL TRATAMIENTO DE UN LIPOMA GIGANTE

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Abstract

The round block oncoplastic technique has proven to be a safe surgical approach in the management of breast cancer tumours. This procedure is useful to achieve resection of large tumours while maintaining a good cosmetic outcome. Recently, the safety of this technique has allowed its use in the treatment of other pathologies without complications. On the other hand, lipomas are the most frequent tumours in the chest wall. However, only 1% of them are larger than 10cm. In giant lipomas, a complete resection is needed to allow a complete anatomopathological study. We report a case of a 50-year-old man with a soft mass in the right breast, a subpectoral lipoma of 25x23x12 cm, without invasion of adjacent vital structures was diagnosed using computed tomography (CT) scan. Due to the benign characteristics, a resection was performed using the round-block technique. The postoperative course was uneventful and the patient was discharged 24 hours after the surgery.

Resumen

El Round-Block es una técnica quirúrgica oncoplastica utilizada en la resección de grandes lesiones centrales de la mama con muy buenos resultados estéticos. Los lipomas son los tumores benignos más frecuentes de la pared torácica, solo un 1% de los mismos miden más de 10cm. Estos son los "lipomas gigantes" cuya resección completa es necesaria para un estudio anatomopatologico definitivo. Presentamos el caso de un varón de 50 años con una masa blanda en mama derecha sin adenopatías axilares, en las pruebas de imagen realizadas se evidenció una gran masa de 25x23x12cm de tamaño compatible con lipoma sin invasión de las estructuras vecinas. Debido a las características benignas de la lesión, se decidió abordar mediante técnica de Round-Block unilateral al ser esta la técnica que más ventajas presenta en cuanto a abordaje de la lesión y resultado estético. El postoperatorio transcurrió sin incidencias y el paciente fue dado de alta a las 24h de la cirugía.

Key words: oncoplastic surgery, round-block technique, giant subpectoral lipoma, breast tumours

Introduction

Lipomas are one of the most frequently benign mesenchymal tumours with an incidence of approximately 16% [1]. They are composed of fat tissue and commonly found in the superficial subcutaneous tissues of the extremities and trunk, with size ranging from 1 to 3cm. Superficial lipomas are smaller than 5 cm in 80% of cases, with only 1% of lesions greater than 10 cm in size. However, submuscular lipomas under the pectoralis major muscle are rare. Only a few cases of subpectoral lipoma have been reported in the English-language literature to date [2,3]. Large lipomas are specifically called 'giant lipoma`. A giant lipoma is defined as a lipoma that is larger than 10 cm or greater than 1,000 g in weight [4]. Most lipomas are asymptomatic and do not require imaging evaluation due to the fact that they are subcutaneous. Nevertheless, when they are huge or are localized in an unusual location, these tumours can be identified and localized by CT or magnetic resonance imaging scan. Lipomas are much more frequent than liposarcoma by an estimated ratio of 100:1 [1]. A differential diagnosis must be made with liposarcoma when the lipoma is larger than 10cm [1].

Aesthetic reasons, symptomatology secondary to mass effect, or risk of malignancy are some of reasons that require total excision of these huge lesions. Surgical techniques such as trans-axillary and infra-mammary approaches have been reported to treat giant lipomas successfully [5]. However long and visible surgical scarring may limit their use.

The incorporation of oncoplastic surgery techniques into breast conservation surgery affords multiple procedural options to achieve the best oncologic and aesthetic outcome in each case [6]. Round-block technique, is a mammoplasty used to excise tumours located at different quadrants of the breast. Good aesthetic results, wide surgical exposure and minimal postoperative scarring are some of the aspects that make this technique valuable in the management of breast tumours. We herein present a case of successful round-block surgical approach for a giant subpectoral lipoma in a man´s right breast.

Presentation of the case

A 50-year-old man complaining of a soft mass in the right breast for three years, was referred to our Breast Unit to assess surgical treatment. Although he was asymptomatic, the lesion had grown considerably, to the point where he felt uncomfortable with his physical appearance. A solitary huge soft, movable and doughy mass of about 25cm of diameter was palpated during medical examination (Figure 1A). A diagnosis of a subpectoral lipoma of 25x23x12 cm, without invasion of adjacent vital structures was confirmed by a computed tomography (CT) scan (Figure 1B).

Figure 1. (A): During medical examination, a huge mass of about 25cm was palpated. **(B)**: Thoracic CT scan shows a well circumscribed, homogeneous, fat-density mass displacing the pectoralis major muscle anteriorly corresponding to a subpectoral giant lipoma.

We planned to perform a round-block technique in order to preserve the nipple areolar complex (NAC) including an aesthetic scar placement. The incisions were mapped out preoperatively, with the patient in the upright position (Figure 2A), as follows: First, we located the sternal fork and measured 5cm laterally towards the unaffected side, marking this point on the clavicle. Then, we made a line from this point to the NAC and measured the distance. This procedure was then repeated on the affected side for adequate placement of the NAC after tumour removal. Subsequently, we drew two concentric circles. The inner circle around the areolar margin and the outer circle at a radius of about 10cm further out, considering the new NAC placement.

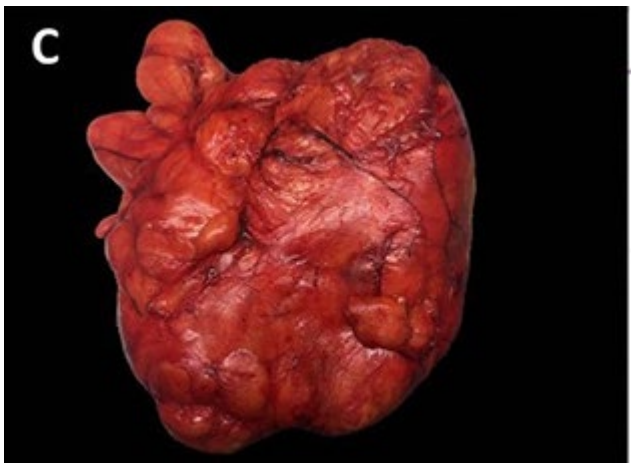
The surgical procedure was performed under general anaesthesia with the patient in supine position with his right arm extended. We used an areolatome for the circumareolar incision (Figure 2B). Once the incision was created, we de-epithelialized the skin between the two incisions that we made at the beginning (Figure 2C). The amount of skin we removed was according to the volume of the specimen excised. Next, we performed a full-thickness incision at the superior external quadrant reaching the lateral side of the pectoral muscle. Once in the subpectoral level, a total excision of the giant lipoma was performed without complications (Figure 2D). We reached the subpectoral space without damaging the gland so reconstruction was unnecessary. We placed two drainages, one in the subpectoral space and the other in the axillar space. We used a purse string with 3-0 absorbable suture to reduce the circumference of the outer circle to match the diameter of the areola (Figure 2E). Finally, we sutured the NAC to the outer skin with interrupted 4-0 monocryl suture, forming the new areola margin (Figure 2F).

Figure 2. Surgical technique. **(A)**: Preoperative markings. The dotted area was deepithelializated during surgery. **(B)**: Use of areolatome for circumareolar incisions. **(C)**: Deepithelialization of the skin between the two concentric marks and incision at the superior external quadrant. **(D)**: Giant subpectoral lipoma excision. **(E)**: Purse-string suture in order to fit the NAC. **(F)**: New areolar margin with the two drainages placed.

Results

The patient's postoperative course was uneventful. He had a compression bandage during 24 hours and was discharged on the first postoperative day. The drainage systems were removed in the outpatient clinic one week after the surgery and the wound was followed up for several weeks until satisfactory healing was observed. (Figure 3A).

Pathologic evaluation confirmed fatty tissue, lobulated, with a smooth and brilliant surface, measuring 25x13x9 cm (Figure 3B y 3C) with a small necrotic area in the middle of the lesion. A group of adipocytes were seen in histologic examination with hematoxylin–eosin (H&E) stain (Figure 3D). No malignant characteristics were found. The nonadipose enhancing component comprised less than 25% of the lesion and the Ki67 was lower than 1%, confirming the diagnosis of a giant lipoma.



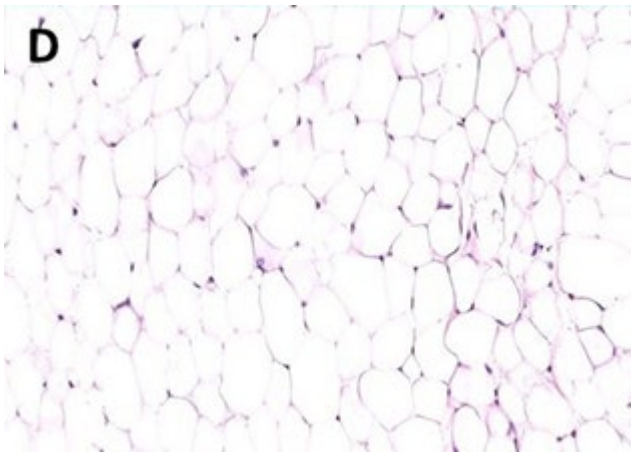


Figure 3: **(A)**: Postoperative results two weeks after the surgery. **(B)(C):** Macroscopic diagnosis. **(D):** Histologically, the mass showed mature adipose tissue (hematoxylin-eosin, original magnifications x20)

Discussion

Lipomas are commonly benign mesenchymal neoplasms composed of adipocytes that arise in the superficial subcutaneous tissues of the extremities and trunk [1]. Occasionally, these tumours can originate from either within the muscle (intramuscular) or between muscles (intermuscular) which are rarer. Patients with a lipoma tumour usually present with a painless slow-growing mass which can attain a size up to 20 cm in diameter [1]. When they are larger than 10cm, they are known as “giant lipomas”. An anatomopathological study is required to make a definitive diagnosis [1] . Giant lipomas are quite rare but they still make up a significant proportion of breast masses.

The differential diagnosis of intramuscular lipoma in this location, both radiologically and histologically is very important. Although there is some overlap in appearance between lipomas and well-differentiated liposarcomas, the existing literature suggests some key differentiating features: Brisson et al. [7] in a retrospective review of 87 patients with histologically proven lipomatous tumours found that factors such as patient age over 60, tumour dimension over 10 cm, and the presence of nonfatty areas, increased the proportion of the likelihood of lipoma/liposarcoma from 2.61 to 6.25 times. In another retrospective study, Kransdorf et al. [8] reviewed the computed tomography (CT) images of 60 patients with histologically verified fatty tumours and found that the most statistically significant radiological predictors of malignancy were: male sex, presence of thick septa, and associated nonadipose masses, which increased the likelihood of malignancy by 13-, 9-, and 32-fold respectively. Our patient had some of these predictors of malignancy such as male sex, necrotic areas in the CT scan and a size over 10cm. However, in our patient´s imaging we identified a homogeneous fatty composition and thin septations that are typical of lipomas. In the minority of cases, lipomas may

demonstrate nonadipose regions and/or calcifications on imaging like our case. In pathology, these changes are often attributed to fat necrosis with secondary inflammation and myxoid or fibrous change.

Complete surgical resection with clear margins is the standard treatment [2-4]. Surgical techniques such as trans-axillary and infra-mammary approaches are used in the excision of these lesions [5]. However, we think that the use of round-block in some cases has more advantages. Round-block technique, also known as Benelli or Doughnut mastopexy, is a mammoplasty described by L. Benelli in 1990 [9]. The applications of this technique include: the excision of breast lesions, mammary hypotrophy and mammary ptosis and hypertrophies. If we focus on breast lesions, this technique has been used in breast cancer and benign lesions such as fibroadenomas [10][11]. Although oncoplastic techniques have been criticised, there are some studies that confirm that round block technique has comparable operative parameters with standard wide local excision [12]. This technique is one of the safest procedures compared to other oncoplastic techniques. Round-block may have fewer of the possible complications associated with oncoplastic surgery, some of these complications can be the appareance of temporary skin folds, NAC necrosis or areola enlargement, more common when there had been exeresis of breast gland. . Therefore, this approach is safe and allows the resection of a larger tumour, achieving good cosmetic outcomes because of the circumareolar incision. . Also, it is important to know that this procedure requires additional knowledge and specific training. In this particular case, the huge amount of skin resected by circumareolar offset de-epithelialization, allowed better access and visualization of the lesion. For all these reasons we selected this oncoplastic technique. Finally, although our patient is a man, this technique can also be used in women to correct residual asymmetry of the NAC. In our opinion, breast surgeons must have specific training in oncoplastic techniques to achieve better oncological outcomes with good aesthetic results.

Conclusion

The round-block technique could be an option for the management not only of cancer but also of complex benign lesions such as the one presented in this case report, that are difficult to handle by conventional surgical approaches.

Conflict of interest statement

The authors do not have any conflict of interests about this study. No funding was provided for this research.

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