Round Block Technique in Management of Breast Lesions

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ABSTRACT

The basic tenets of oncoplastic surgery essentially includes volume displacement and volume replacement. The round block technique, so-called donut mastopexy or Benelli mastopexy, is frequently used as a volume displacement technique in breast conserving surgery for benign multicentric fibroadenomas and early breast cancers. Such techniques are still underused in Nepal. In this article we present on four cases managed with original round block technique and followed prospectively with their outcome.

KEY WORDS

Breast cancer, Fibroadenoma, Oncoplasty, Sentinel lymph node

INTRODUCTION

Round block technique is an oncoplastic procedure for the management of benign and malignant breast diseases. It allows generous access to any quadrant of the breast while confining the incision to the areolar margins. In the round block technique (RBT), the dermis is cut only on the side where the tumor is located because the nipple-areolar complex (NAC) is supplied by dermal vessels from all sides.[1] In modified RBT (MRBT), the dermis is cut on all sides, to remove tumors located in peripheral areas of the breast. Here we present a case series of benign and malignant lesions managed with original RBT.[1]

CASE SERIES

The study is a prospective case series that consisted of four patients who underwent round block technique between April 2017 to September 2019. All patients gave written consent. The patient characteristics are shown in Table 1.

Table 1. Summary of patients

Age (years)	Clinical presentation	Side and site	Preoperative diagnosis	Operation	Final histopathology
35	Breast lump for 2 years, recent onset pain 8 weeks	15x15 mm, right in upper outer quadrant (UOQ) 20 mm from areola	BIRADS-4a, FNAC instead of Ductal carcinoma	RBT+sentinel lymph node(SLN) biopsy	15x15 mm fibroadenoma
19	Multiple breast lumps in left breast for 9 months	Left, Multicentric at 1, 7 and 9'O clock 20 mm from areola	Fibroadenoma	RBT	Fibroadenomas: -55x45 mm at 9'O clock -30x25 mm at 7'O clock -20x20 mm at 1'O clock
39	Breast lump for 1 month	30x30 mm, right, UOQ, 15 mm from areola	Trucut biopsy-Invasive instead of ductal carcinoma NST	RBT+SLN biopsy	5 mm invasive ductal carcinoma no specific type(NST), SLN negative, TNBC
28	Breast lump for 3 years	30x30 mm, left at 12'O clock 3 cm from areola	FNAC: Atypical ductal hyperplasia, Trucut: Invasive ductal carcinoma NST	RBT+SLN+axillary lymph node dissection (ALND)	30 mm invasive ductal carcinoma NST, SLN positive, ER+, PR+, HER2neu -

All the patients were evaluated for cosmetic outcome by two breast surgeons at five months after surgery according to Harvard scale.[2] The result achieved was considered excellent when the treated breast was nearly identical to untreated breast, good when the treated breast was slightly different from the untreated breast, fair when an obvious difference existed between the two sides but not seriously distorted, and poor when the treated breast was seriously distorted.

Surgical procedure

A circumareolar incision down to the dermis and another parallel circular incision 15 mm away from the first to similar depth was made (fig. 1a). De-epithelialization between the outer and inner incision lines was performed (fig. 1b) and the dermis was cut at the side of the location of lesion. Tumors were excised with 10 mm margin from tumor whereas benign lesions were shelled out. Sentinel lymph node biopsy via separate incision was done with methylene blue (1% diluted in 1:4 ratio with normal saline) after intradermal injection in areola and around the tumor. The defect was obliterated by advancing the mobilised surrounding fibroglandular flaps. A purse-string suture was used to reduce the diameter of the larger circle, which was then sutured to the inner circle.

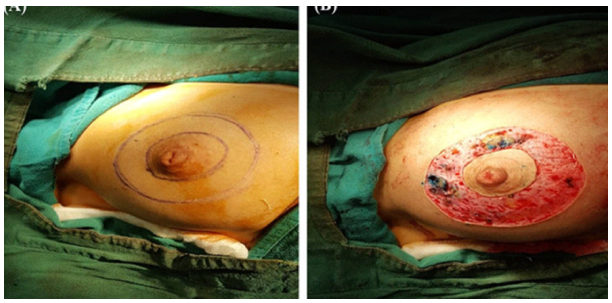

Figure 1. Round block technique (A) Preoperative marking (B) De-epithelialization between inner and outer circles

Results

We had total of four patients. Patient number one initially diagnosed as carcinoma turned out later to be fibroadenoma on final histopathological diagnosis. Patient number two had multicentric fibroadenomas (fig. 2). Patient number three had early breast cancer (EBC) with clinically and pathologically negative axilla (fig. 3). Though her clinical tumor size was larger, pathological size was only 5 mm likely due to intense peritumoral desmoplasia. She had triple negative breast cancer (TNBC). Patient number four also had EBC with positive sentinel lymph nodes for which she underwent axilla. She had hormone positive breast cancer. Cosmetic outcome at five months was excellent for both the fibroadenoma cases while it was good for both the malignant cases.

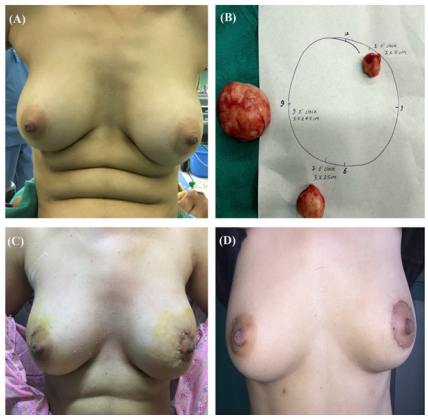

Figure 2. Patient number two with multicentric fibroadenoma (A) Preoperative picture showing lower level of left nipple (B) Excised fibroadenomas with size and location (C) Postoperative day 5 picture (D) At 5 months with well-maintained breast contour and nipples at same level

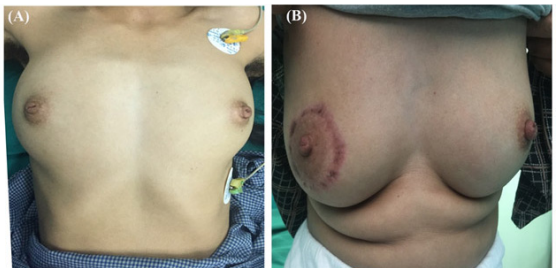

Figure 3. Patient number three with early breast cancer (A) Preoperative picture in supine position (B) At 5 months follow-up, with well-maintained contour of right breast

DISCUSSION

Round block technique is a versatile technique that can be used in benign and malignant breast diseases, ptotic, hypertrophic and hypotrophic breasts.[3] Its benefit lies in its inconspicuous scar along with maintenance of regular contour of breast.[1,4] More than 20% of breast volume excision results in deformity. It can be circumvented to a reasonable extent by oncoplastic breast conserving surgery (BCS) with volume displacement techniques. Oncoplastic BCS have emerged over recent years, facilitating the better cosmetic results whilst maintaining good oncological principles.

Psychological benefits of breast conserving surgery is well established and is found to be safe even in locally advanced breast cancer who had good response to neoadjuvant chemotherapy.[5-7] By allowing generous resection, oncoplastic BCS has allowed to achieve low rate of recurrence while preserving cosmetic outcome with all its benefits of improved perception of body image, confidence and sexuality.[5] Oncoplastic surgery has made it possible for more patients to become candidates for breast conservation. Nepalese women have relatively small breast sizes compared to Western women and, though oncoplastic volume replacement are ideal, volume displacement can still be performed with good cosmetic outcome as in our case.

Nattinger et al. in 1992 showed use of breast conserving surgery more in urban than rural areas, in teaching than non-teaching hospitals in United States.[8] Though we don't have similar data, we strongly believe urban women prefer breast conserving surgery (although breast conserving surgery itself is performed less in our context).

Use of oncoplastic breast conserving surgeries is minimal in Nepal. Data from a prominent tertiary care cancer hospital in Nepal showed almost all (99%) of surgeries in invasive breast cancer to be mastectomies.[9]

With increasing information and awareness, patients are likely to present at early stage of breast cancer and use of oncoplastic techniques may increase in future in Nepal.

Volume displacement surgeries like round block technique as in our case are shorter in duration, less extensive with no donor-site morbidity. It allows for the complete resection of larger tumors as well as multicentric fibroadenomas.[10] It is an established technique, with circumareolar incision, leaving the least visible scar on the breast.

Round block technique is relatively easy to perform by breast surgeons allowing for complete resection of tumors with good cosmetic outcome. It is also useful in cases with multicentric fibroadenomas with excellent cosmetic outcome.

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