

Initial Experience with Simple Oncoplastic Breast Conserving Surgery in Nepal: A Case Report

Yogendra P Singh¹, Suman Khanal²

¹Department of Surgery, Maharajgunj Medical Campus, Tribhuvan University Teaching Hospital, Institute of Medicine, Maharajgunj, Kathmandu, Nepal ²Department of Surgical Oncology, Gastroenterology, BP Koirala Memorial Cancer Hospital, Bharatpur, Nepal

Corresponding author:

Yogendra P Singh, MD, PhD

Department of Surgery, Maharajgunj Medical Campus, Tribhuvan University Teaching Hospital, Institute of Medicine, Maharajgunj, Kathmandu, Nepal

Email: ypsingh2065@gmail.com

Submitted : Jun 28, 2020

Accepted : July 31, 2020

ABSTRACT

Oncoplastic breast conserving surgery is increasingly used in the management of early breast cancer. Though its use in Nepal is increasing, it is still under-utilized. We present a case of upper outer quadrant early breast cancer located away from nipple-areola complex managed with radial ellipse segmentectomy 10 years back and under regular follow up. We recommend its usage in upper outer quadrant lesions because of its simplicity, access for sentinel lymph node biopsy and good cosmetic outcome.

Keywords: *Early breast cancer, lumpectomy, simple oncoplastic surgery*

INTRODUCTION

The word 'oncoplastic' is derived from two Greek words 'onco' (tumor) and 'plastic' (to mould).¹ It entails the use of plastic techniques to reshape/mould the remaining breast after excision of breast cancer. It allows wider excision expanding the limits of breast conservation while preventing the cosmetic deformities of the breast. Due to these benefits, use of oncoplastic breast conserving surgeries (BCS) is increasing.² It has been practiced widely as a standard of care for early breast cancer even in low-income countries^{3,4} despite some limitations. Level I simple oncoplastic BCS includes removal of a moderate amount of breast tissue (about 20-25%) and the post lumpectomy space is filled with local glandular advancement (volume displacement).⁵ We report a

case of early breast cancer managed 10 years back in the early days with radial ellipse segmentectomy oncoplastic technique.

CASE PRESENTATION

A 29-year-old multiparous, premenopausal Tibeto-Burman lady presented with a painless right breast lump for ten days. The lump was not associated with nipple discharge. She had menarche at the age of 13 years. There was no history of oral contraceptive pills use. Family and past medical history were not significant. Local examination of the right breast revealed a hard and non-tender lump of 1.5X1.5 cm over upper outer quadrant. The lump was mobile and not fixed with underlying chest wall or overlying skin. Bilateral axilla and left breast were normal.

Ultrasonography of the right breast showed a 16X14

mm sized hypoechoic lesion with irregular margins in upper outer quadrant at 10 o'clock position. The lesion had minimal internal vascularity suggestive of malignancy. Bilateral axilla and left breast findings were normal. Fine needle aspiration cytology revealed malignant lesion. Metastatic work up in the form of chest X-ray, abdominal ultrasound, liver function tests were normal. She decided to undergo oncoplastic breast conserving surgery.

Surgical procedure: Under general anesthesia, diluted methylene blue (1 ml methylene blue + 4 ml normal saline) was injected all around the tumor with 1 cm margin to delineate the line of dissection (Fig. 1). A radial ellipse skin incision was given over central part of the lesion. Both upper and lower skin flaps were raised. An elliptical incision was given over blue stained margin of glandular tissue with addition of 0.5 cm on both inferomedial and superolateral side (non-stained breast tissue). Lumpectomy was done and the specimen labeled as long thread indicating lateral and short thread indicating superior margin (Fig. 2). Sentinel lymph node biopsy was done via the same incision. Two lymph nodes were retrieved; one was blue stained. Both edges of the glandular breast tissue were approximated with polyglactin 3:0 interrupted suture. Skin was closed with subcuticular 4:0 polyglactin.

Postoperative period was uneventful. The patient was discharged on third postoperative day. Histopathological examination showed a grade II invasive ductal carcinoma with lymphovascular invasion. Both lymph nodes were negative for tumor cells. Both estrogen and progesterone receptors were negative. She received six cycles of anthracycline based chemotherapy and total 40 Gray of external beam radiotherapy (2 Gray fraction x 5 days a week). According to Harvard Scale,⁶ her cosmetic outcome at six months post operatively was excellent. Even after 10 years of surgery, she is well satisfied with the cure from the disease and the cosmetic outcome (Fig. 3).

DISCUSSION

Oncoplastic BCS techniques are being used more frequently in the management of early breast cancer.² These techniques can be level I or level II.⁷ Selection of particular technique depends on breast size, shape, degree of ptosis, tumor location and tumor-to-breast volume ratio.^{8,9} Level I techniques are easier allowing for resection of up to 20% of breast volume.¹⁰ There are various techniques for removal of lesions in upper outer quadrant like donut mastopexy, radial ellipse segmentectomy or lateral mammoplasty.^{11,12} We used radial segmentectomy in our case to remove lesion in the upper outer quadrant, in early days when oncoplasty was still in its infancy in Nepal.



Fig 1. Injection of methylene blue dye around tumor in right upper outer quadrant of breast 1 cm away from the tumor



Fig 2. Post lumpectomy specimen (4x5 cm) with one blue stained sentinel lymph node. Short thread - superior margin, long thread - lateral margin and a thin rim of skin)



Fig 3. Ten years follow-up with excellent cosmetic outcome

Radial ellipse segmentectomy is a level I technique that can be applied on any quadrant to remove the tumor.¹³ In our case, though the lesion could have been removed via periareolar or circumareolar incision as recommended in superior region of breast,¹¹ we chose the radial incision for two

reasons: (a) the lesion was in upper outer quadrant away from NAC (nipple-areola complex) so the scar would be hidden from cleavage area, (b) accessibility of axilla for sentinel lymph node biopsy from the same incision. The radial ellipse incision in original description¹³ was close to nipple, however our incision was much farther away from NAC. The cosmetic outcome of radial segmentectomy is said to be intermediate between that of donut mastopexy and lateral mammoplasty¹² for upper outer quadrant lesions. However, the cosmetic outcome in our case was excellent.

The advantages of radial segmentectomy are its simplicity, and applicability in lesions anywhere in the breast. But it is preferably avoided in resection of upper inner quadrant lesions due to visible scar in the cleavage area. The adjunct use of frozen section during oncoplastic resection is recommended for two reasons: (a) by assuring margin negativity, it avoids the risk of re-excision that might compromise aesthetic outcome and increase breast asymmetry (b) lowers risk of oncologic failure.¹³ However we did not use frozen section in our case due to technical limitations.

Use of oncoplastic breast conserving surgeries is minimal in Nepal. Data from a prominent tertiary care cancer hospital in Nepal in the year 2018 showed none to be an oncoplastic surgery.¹⁴ Despite being equivalent in outcome compared with mastectomy, this lower uptake of oncoplastic techniques including radial segmentectomy could possibly be due to limited access to radiotherapy, patient preference and surgeon's judgement.¹⁷

The standard approach for early stage breast cancer is breast conserving surgery including use of oncoplastic techniques for resections more than 10%, followed by radiation.^{10,15,16} So we need to apply more of these techniques in clinical practice. Given the simplicity, good cosmetic outcome and easy access to axilla for upper outer quadrant lesions away from NAC, the radial ellipse segmentectomy seems an attractive technique which can even be done by general surgeon with a short training.

CONCLUSION

Radial ellipse segmentectomy is a simple, easy level I oncoplastic technique suitable for upper outer quadrant lesions away from NAC with good cosmetic outcome.

CONFLICT OF INTEREST

None declared.

CONSENT

Consent has been obtained from the patient to publish this report and the images.

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