

Case Report

The maximum number of node retrieval in axillary lymph node dissection in breast cancer patient (84/84); high nodal burden in breast cancer female patient: a case report and review of literature

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ABSTRACT

We describe the case of a 41 years old female presented with right breast retro areolar painless hard mass accompanied by nipple retraction. After initial clinical assessment, further clinical radiological investigations, bilateral sonomamography imaging showed an ill-defined focal hypo echoic heterogenicity at the retro areolar region measures about 40×26 mm. Another two ill-defined hypo echoic soft tissue masses at upper inner quadrant measures about 17×16 mm and 13×11 mm. With enlarged right axillary lymph node about 20 mm in size, thickened cortex and still preserved hilum (BIRAD V lesions). The diagnostic image guided multiple core biopsies confirmed the multicentric invasive breast cancer and molecular subtyping as Luminal B breast cancer stage IIb. Whole body computed tomography (CT) as a Metastatic work was free. After the discussion among the Breast cancer Multi-disciplinary team (MDT) members and the patient, the final decision was to do surgery first in the form of right modified radical mastectomy respecting the patient desire for this choice loco regional control first - then to continue her adjuvant treatment according to the final histopathological reporting. The surprise is the unexpected this extreme number of axillary lymph nodes retrieval (84/84) after the final histopathological examination of the specimen. We did not find this extreme number of axillary lymph nodes retrieval "84" before in the literature at all regarding breast cancer management by ALND.

Keywords: Axilla, Breast, Cancer, Clearance, Dissection, Lymph node harvest, Lymph node retrieval

INTRODUCTION

ALND provides an important prognostic data that influences crucial management decisions.¹ Historically, its role has been in staging and planning adjuvant systemic therapy and also in loco-regional control of cancer in both node positive and node negative tumours.² The presence of lymph node metastasis and the number of involved nodes are correlated with a high risk of loco regional recurrence and disease progression.^{3,4} Unfortunately, ALND carries a 60% risk of significant morbidity including lymphedema, sensory numbness and limitation of arm motion and strength.⁵ With the evolving

clinical and pathological landscape of breast cancer and the recognized morbidity associated with axillary interventions, the traditional role of ALND is increasingly subject to reappraisal. Sentinel lymph node biopsy (SLNB) has emerged as a reliable staging modality in patients with clinically node-negative axillae, facilitating selective omission of ALND and minimizing overtreatment.⁶

Nonetheless, nodal metastases remain detectable in approximately 5–10% of tumours ≤0.5 cm and in 10–20% of tumours measuring 0.6–1.0 cm. Furthermore, in the absence of axillary treatment either via surgical

dissection or regional nodal irradiation axillary recurrence may occur in 15–30% of clinically node-negative cases.⁷ ALND continues to be indicated in patients in whom axillary radiotherapy is contraindicated, as well as in those with clinically palpable axillary lymphadenopathy or histopathologically confirmed sentinel lymph node metastasis.⁸ Optimal axillary management should therefore be individualized, balancing oncologic control with procedural morbidity.⁸

CASE REPORT

A 41 years old female presented with right breast retro areolar painless hard mass accompanied by nipple retraction. On clinical examination, she was clinically stable with normal vital signs. Bilateral Breast examination revealed a right breast retro areolar painless hard mass accompanied by nipple retraction. However, there was no scar marks at the breast, axilla and chest wall and did not reveal any other palpable mass or bleeding/discharge per Nipple. She had no past medical or surgical history. She is G2P2A0 with regular menstruation history and using intrauterine device (IUD) as a contraception method. She had no positive family history of breast cancer. She was a non-smoker.

After initial clinical assessment, further clinical radiological investigations, bilateral sonomamography imaging showed an ill-defined focal hypo echoic heterogeneity at the retro areolar region measures about 40×26 mm. Another two ill-defined hypo echoic soft tissue masses at upper inner quadrant measures about 17×16 mm and 13×11 mm.

With enlarged right axillary lymph node about 20 mm in size, thickened cortex and still preserved hilum (BIRAD V lesions). The diagnostic image guided multiple core biopsies confirmed the multicentric invasive breast cancer and molecular subtyping as Luminal B invasive breast cancer stage IIb Figure 1.

With molecular profile as (ER: Positive 8/8; PR: Positive 5/8; Her-2 neu: negative (score 0); Ki-67 proliferative index about 60%) Figure 2. Whole body computed tomography (CT) as a Metastatic work was free. The discussion among the Breast cancer multi-disciplinary team (MDT) members and the patient, the final decision was to do surgery first in the form of right modified radical mastectomy respecting the patient desire for this choice loco regional control first then to continue her adjuvant treatment according to the final histopathological reporting.

In view of this our patient was consented for a right modified radical mastectomy procedure. Amongst the risks of such a procedure (s) that were explained to the patient were lymphedema, sensory numbness and limitation of arm motion and strength, intra-operative bleeding and/or post-operative collection, seroma formation in addition to general risks such as deep vein

thrombosis, pulmonary embolism, respiratory complications, wound infection. A right modified radical mastectomy procedure was performed through an elliptical transverse chest wall incision including right nipple-areola complex and extending towards the axilla with removal of the entire breast and extirpation of the adjacent lymph nodes in the axilla.

The pectoralis major and minor muscles are preserved so the mastectomy and axillary dissections are carried out through the same incision.

The dissection proceeded superiorly to about the level of the clavicle, inferiorly to the level of the rectus abdominis muscle, medially to the sternum and laterally to the latissimus dorsi muscle. The anterior surface of the breast is dissected free from the overlying subcutaneous tissue, then its posterior surface should be dissected free from the underlying pectoralis major muscle using electro cautery. Once the mastectomy is completed, the axillary dissection was done. The breast and axillary contents are generally extirpated as a single specimen for histopathology examination Figure 3.

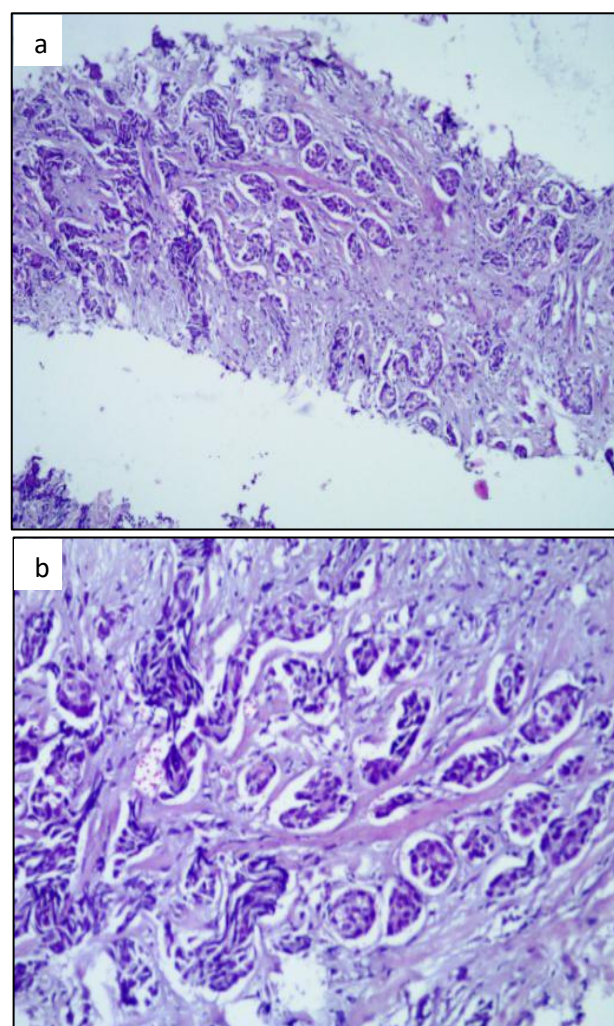


Figure 1 (a, b): Core biopsy of right breast invasive ductal carcinoma grade 2.

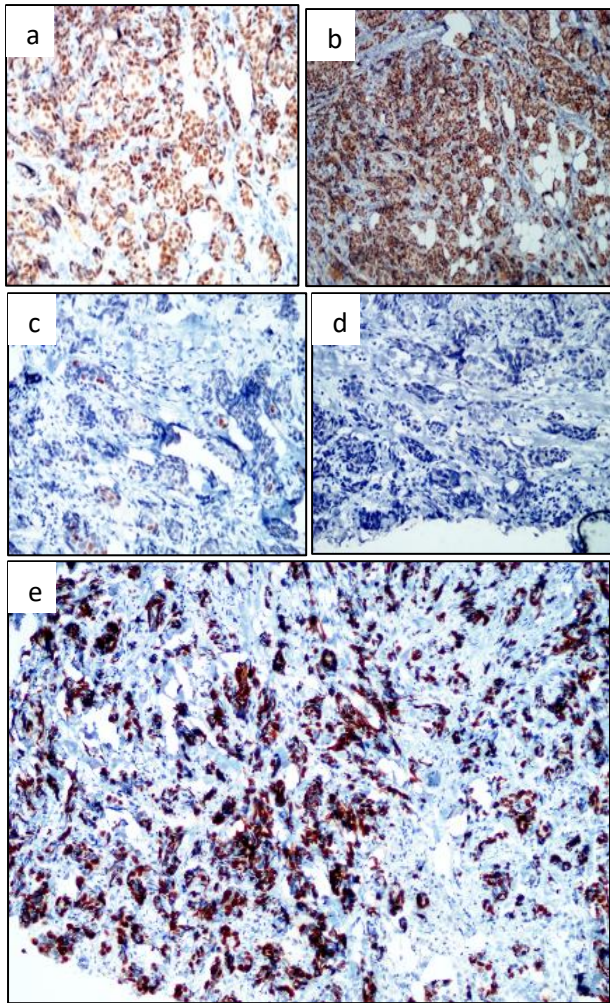


Figure 2: Molecular profile regarding (a, b) estrogen receptors ER: positive 8/8, (c) progesterone receptors, PR: positive 5/8, (d) human epidermal growth factor receptor 2 Her-2 neu: negative (score 0), and (e) Ki-67 proliferative index about 60%.

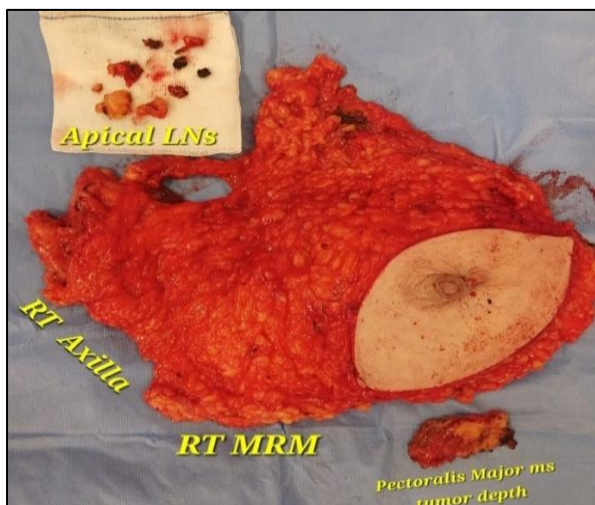


Figure 3: Right breast and right axilla specimen post right modified radical mastectomy operation.

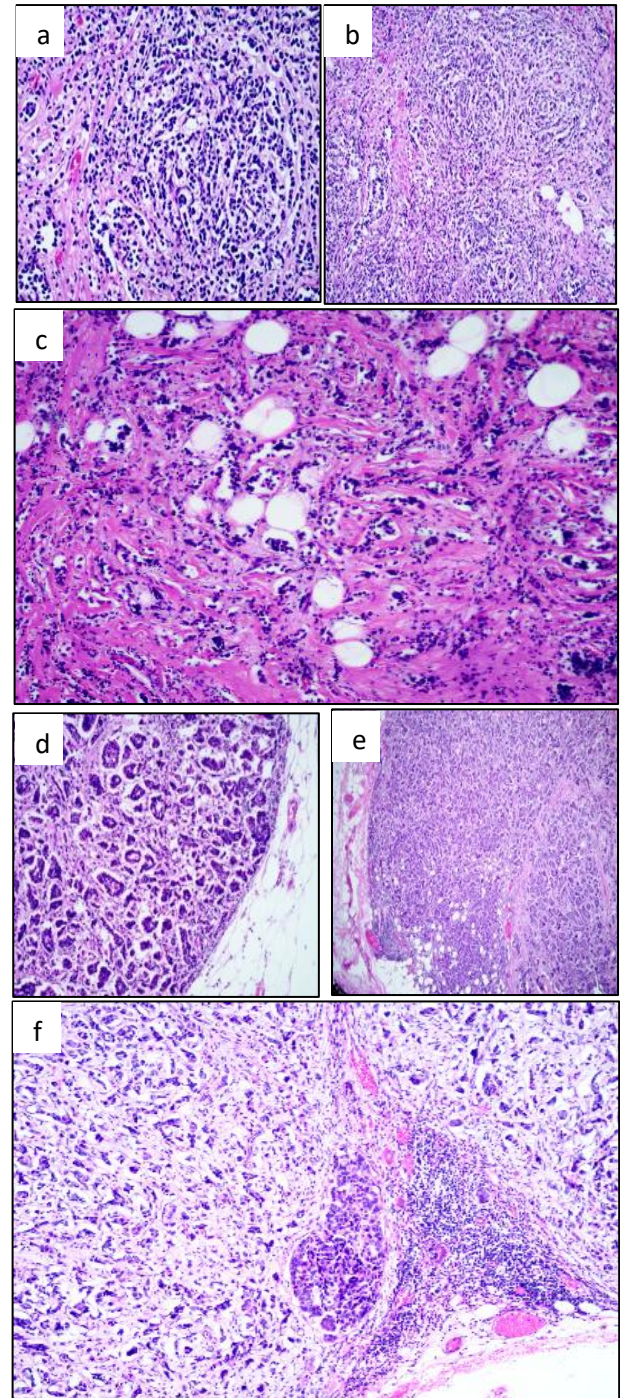


Figure 4: (a-c) Right breast invasive carcinoma; and (d-f) axillary lymph nodes metastatic deposits.

At the end of the procedure, a radivac suction drain size 18 is brought out through a separate stab incision in the axilla and sewn in place with 0 Silk. Finally closure the defect of an extensive mastectomy by (suspension technique) including the wound closure by placing interrupted 3-0 vicryl stitches subcutaneously, with a running 3-0 Monocryl subcuticular stitch to re-approximate the skin edges. The procedure took about 90 minutes duration. Post-operatively, our patient had a smooth postoperative clinical course and recovery. On

post-operative day one, discharged home on a course of antibiotic, potent analgesics and some instructions regarding doing arm exercises each day. The final histopathology reporting to determine the adjuvant plan of treatment. Wow it was a surprise to detect lymph nodes (LNs) are positive for tumour metastasis 84/84 LNs with multicentric invasive carcinoma of no special type, NST invasive ductal carcinoma, grade 2 Figure 3, figure 4 with evident lymphovascular invasion (LVI) but no evidence of perineural invasion (PNI). Nipple and margins are free from tumour infiltration with molecular profile as (ER: Positive 8/8; PR: Positive 5/8; Her-2 neu: negative (score 0); Ki-67 proliferative index about 60%) Figure 2 with no evidence of ductal carcinoma insitu (DCIS).

DISCUSSION

Management of breast cancer includes local control for the breast pathology and regional control for the axilla. For patients with lower risk primary breast tumours, the axilla is managed by either node sampling and/or sentinel node biopsy. Previous studies have shown comparability between node sampling/sentinel node biopsy and ALND in terms of detection of axillary metastases but ALND has a therapeutic role and is more appropriate for those patients with a higher risk of metastatic disease.⁹ ALND is effective, although it could be argued that those patients with node negative clearances had been over treated. The number of nodes collected and analysed depends not only on the diligence of the pathologist but also on the extent of axillary dissection done by surgical oncologist.^{10,11}

In patients undergoing ANLD, the proportion of node positive patients increases with the number of nodes collected so the more lymph nodes retrieved the higher the proportion of node positive patients.¹² Surprising In this case an 84 positive LN had been detected within axillary dissection; it was a must to review the literature about the maximum number of LN harvest/case regarding ALND in the surgical management of invasive breast cancer.

In a series of 121 consecutive radical mastectomies performed during the period of 1964 to 1969, we found that the number of axillary nodes removed ranged from 3 to 63 with a median of 22 and a mean of 23.4 per patient so the maximum number of lymph nodes retrieved/case were 63 LN.¹³ In a subsequent series of 111 consecutive modified radical mastectomies performed between 1969 and 1973, the total axillary nodes removed ranged from 6 to 77 with a median of 24 and mean of 25.7 nodes in each mastectomy specimen so the maximum number of lymph nodes retrieved/case were 77 LN.¹³ The Edinburgh breast unit selected patients with large and high-grade tumours for ALND, 609 consecutive ALNDs performed between October 1999 and December 2002 were reviewed with a mean of 17.9 nodes collected for each specimen (median, 17; range, 2–47 LN) so the maximum number of lymph

nodes retrieved/case were 47 LN.¹ In the case an 84 positive axillary LN had been detected in ANLD and I think it is the maximum number has ever been retrieved in ALND for invasive breast cancer till now after review of the literature.

CONCLUSION

Hence, such clinical scenario; breast cancer female patient and this magnificent extreme number of axillary LN retrieval upon ANLD with the maximum number of node retrieval in axillary lymph node dissection in breast cancer patient (84/84) should be documented and registered as a case report for publication after the review of literature was done.

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Ethical approval: Not required

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