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Tips and Tricks in Breast Cancer Surgery

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Abstract

Breast Cancer (BC) is the most common cancer in women accounting for about 30% of all female cancers. The average age of incidence varies among countries. While it is 62 years in the US, it is 48 years in the Arab countries. According to a recent statistics done on well studied charts of consecutive one thousand operations on breast cancer patients done by me in Syria, 20% of cases occurred below the age of 40 (*vs.* 8% in the US). This has an important implication.

Keywords: Breast cancer • Women accounting • Implication

Introduction

A significant percentage of our BC cases occur at fertile age with high level of estrogen especially in pregnancy resulting in aggressive cancer. In dealing with breast cancer, we should be thinking of its biology. It is a slow growing cancer. By the time it is discovered mammo graphically (5 mm), it is 5 years old. Survival depends on the following five factors [1].

- Size of lesion
- Grade
- Lymph node status
- Hormone receptor status
- Age of patient

Tips in the approach of patient

We should keep in mind that any breast lump or any new breast change should be considered cancer till proven otherwise especially if the patient is above the age of 40. In every patient with suspected BC, we should think if she falls into the following risk factors [2].

- Family history especially in first degree relative and at young age.
- Age at delivery of first child, especially if the first delivery occured after the age of thirty.
- Age at menarche, especially if it occured below age of thirteen.
- Age at menopause especially if it is late beyond age of fifty.
- Intake of Hormonal Replacement Therapy (HRT).
- Other factors like obesity, sedentary life, alcohol intake, etc.

Physical Exam (PE) should always be carried out at supine position to cover all axes of the breast including under the nipple and axilla [3].

Tips in making the diagnosis

- Mammogram and Ultrasound (U/S) should be routine.
- Mammogram is accurate only in 85%-90%, thus PE is essential to detect abnormal changes that didn't appear on mammogram and U/S.
- On mammogram, speculate lesion and cluster micro calcifications are important.
- On U/S, irregular non homogeneous, hypo echoic lesion with perpendicular shadow length larger than horizontal length are consistent with malignancy [4].
- U/S is important in distinguishing cystic from solid nodule.
- Axillary Lymph Nodes (LN's) that lost their fatty centers are compatible with malignancy.
- The accurate diagnostic tool is doing Fine Needle Aspiration (FNA) Biopsy (Bx) or true cut biopsy. This latter biopsy allows us to perform Immuno Histo Chemical (IHC) and know about hormonal receptors [5].
- Still negative mammogram, negative U/S and negative FNA or neg true cut Bx does not rule out completely cancer. We should resort to excisional Bx and path exam on the whole lesion if we clinically suspect the lesion to be cancerous.

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Discussion

Tips on decision making and PreOp management

- Once Dx of BC is made, staging should be done.
- Metastatic work up is made and should include Chest X-ray (CXR), U/S to Abdomen/Pelvis (A/P) or CT to both chest and abdomen.
- Blood tests that include Liver Function Tests (LFT's), tumor markers (CA15-3, CEA) and serum calcium in addition to routine tests like CBC, FBS and BUN.
- PET scan is done for advanced cases.
- Staging (TNM) is made according to size of lesion, axillary status and metastasis.
- Pre op planning is very important and should follow multidisciplinary approach which often needs presenting the case at tumor board that includes anatomic pathologist, surgical oncologist, medical oncologist and radiation therapist.
- Neo adjuvant chemotherapy is given for big size lesions in order to down size case and make it amenable to conservative surgery. Also in this way we know the response rate to that chemotherapeutic agent and protocol [6].
- Once operability is decided upon, we should choose the type of operation: Modified Radical Mastectomy (MRM) *vs.* Conservative Surgery (CS).
- Conservative Surgery (CS) has been considered the standard of care. Statistics have shown equal results to the traditional MRM.
- Indications (absolute and relative) for CS are well defined: Most important is absence of micro calcifications in other quadrants, acceptable size of lesion/size of breast, available radiotherapy center nearby and especially patient acceptance for the small percentage of local recurrence with CS. We stress that even local recurrence when it occurs after radiotherapy, a wider excision or salvage mastectomy is performed. Survival would be the same. If the patient remains worried of the possibility of local recurrence, then it is better to decide on mastectomy or Nipple Sparing Mastectomy (NSM) [7].
- MRM is indicated in big lesions or when CS is contraindicated or when CS is done and Radio Therapy (RT) is not available in the respected area.
- Adjuvant chemotherapy is indicated for any lesion larger than 1.4 cm and with positive axillary nodes.
- Radiotherapy is indicated in any case with positive axillary LN's and primary lesion larger than 3 cm.
- Sentinel Lymph Node (SLN) Bx is indicated in all clinically negative axillae.

Tips and tricks in technique

- If excisional biopsy is performed, the incision for that should be made with intent to be included within the elliptical incision of the mastectomy or CS in case lesion turns malignant.
- We usually make horizontal incision except for upper or lower locations lesions where we make perpendicular incision.
- In CS, I prefer quadrantectomy rather than lumpectomy in order to be sure we achieve negative margins in addition to extend excision along path of ducts toward the nipple.
- In CS, I do meticulous hemostasis and don't use drain.
- In CS, I follow oncoplastic principles.
- In CS, I don't close the cavity. I leave it to be filled with sero sanguineous fluid in order to keep the shape of the normal breast.
- In CS, I close up on the cavity with interrupted 3/0 vicryl sutures for the sub-cutaneous layer then continuous subcuticular 4/0 monocryl absorbable suture.
- In SLN Bx, it is recommended to excise at least 3-4 nodes and send all of them for pathology.
- If SLN is negative on pathology, in 98% of cases, the rest of ALN's would be negative. If SLN is positive, in 96% of cases the rest of SLN's are positive.
- In SLN Bx, it is better to do separate incision at lower axillae except when the lesion is in the UOQ near axilla where the SLN's are reached thru the same incision of the quadrantectomy [8].
- In either CS or MRM, before suturing the skin, it is advisable to cut the skin edges till bleeding level reached. This will prevent possible skin necrosis at wound suture line and promotes rapid healing.
- In MRM, the skin flaps should be thin enough and uniform in thickness.
- In doing Radical Axillary Dissection (RAD), we should do the dissection in a neat way taking care not to disrupt the lymphatic vessels which are better tied off individually.
- In this way we reduce the incidence of post op arm lymphedema.
- In RAD, axillary level III dissection can be avoided if no grossly enlarged LN's are evident.
- In MRM, attention is made to make the upper flap wide enough in order to be sure that it will cover the axillary cavity adequately.
- In all cases of MRM, two Hemovac #18 drains are inserted, one extending into axilla and the other under flaps.
- One important step I innovated, that after closing the skin flaps, I inject about 100 ml of sterile saline in each of the hemovac drains to fill all dead space. Then activate the hemovac suction. While the saline is sucked out, gauze pressure is applied on the flaps. In this way, the axillary cavity which was filled with saline that prevents air being trapped. Once the saline is sucked out, the skin flap will collapse and gets stuck to underlying tissues over the cavity of the axilla. The adhered flap to the axillary cavity will be maintained by pressured fluffed gauze for 3-5 day (depending on amount of drainage) then drains are removed in the first clinic visit after operation [9].

Tips in postOp management

- Breast surgery is considered clean operation and does not need more than one prophylactic dose of antibiotics at time of anesthesia induction.
- The patient can have regular diet at evening meal of same day of surgery.
- She can be discharged next day with instructions how to take care of hemovacdrains.
- She is given an appointment on the 3rd-5th post op day or whenever the drainage is below 30 ml/day. She is instructed to move her affected arm and her shoulder joint in a circular manner to avoid stiffness of the shoulder joint.
- The drains are pulled out on her first clinic visit and skin sutures removed on the 10th post op day. If a collection (seroma) is noticed, it has to be emptied either by aspiration or rarely by putting a small soft rubber drain and kept under gauze pressure for four days.

Tips on avoiding complications

The two main complications that may occur are

- Seroma in the axilla or under the flaps. This can be greatly avoided by my novel method *i.e.* Instilling great amount of sterile saline in the axillary cavity and underneath the flaps, then aspirate all saline through the Hemovac suction at the end of operation and keep the negative pressure maintained.
- Necrosis of skin edges at suture line. This complication is not unexpected especially when we have thin skin flaps. To avoid that, I usually and routinely do on every case: Trimming the cut edges of the skin till I achieve healthy and bleeding edges before suturing the edges. By this doing, skin necrosis can be avoided completely [10].

Overall management of the case

Once the skin sutures are out and wound already healed, the pathology report should be already out. By then we should know four main features.

- Size of lesion
- Histology grade
- Auxiliary lymph node status
- Hormonal status, ER, PR, HER2, Ki67

Conclusion

Post-operative management and prognosis greatly depends on those four factors plus AGE of patient. Adjuvant chemotherapy is indicated whenever primary lesion is above 1.5 cm and presence of positive ALN's. It should be started in the 3rd or maximum in the 4th post op week. Neo adjuvant chemotherapy is indicated to downstage the primary tumor if it is large size so that it will make the case fit for conservative surgery. Radiotherapy is indicated for big primary lesion (>3 cm) and more than 3 positive ALN's. It is usually started after finishing the chemotherapy. Hormonal therapy is given for at least five years if the receptors are positive and usually started after chemotherapy ends. If HER2 is positive, herceptin is usually given during chemotherapy course.

Recommendations for every breast cancer patient

I usually have three things to advise a BC patient to follow:

- Have a proper weight.
- Cut down on fat and carbohydrates and depend on plant-based diet.
- Half an hour of exercise every day.

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