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Management of shoulder dysfunction in breast cancer: A case report

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Abstract
Breast cancer typically develops when glandular tissue of the breast becomes mutated. Over time, breast cancer cells gain the ability to invade other cells and tissues throughout the body. In some cases, breast cancer spreads to tissue within and around the shoulder leading to a number of symptoms. The development of joint pain is a common symptom of breast cancer metastasizing to the shoulder. As the breast cancer cell colonize tissue in the shoulder they attack neighbouring heathy cells and cause tissue damage that can lead to pain a study published in "Current Oncology" in 2006 indicates that breast cancer metastasis can lead to the development of cancerous lesions of the humerus, the upper arm bone. As the cancer forms growth on the head of the humerus, where the arm meets the shoulder joints, the tumor can interfere with normal joint functioning, leading to pain when moving the shoulder. Breast cancer patients experiencing unexplained shoulder pain should seek medical attention to assess the possibility of breast cancer to shoulder joints.

Keywords: breast cancer, glandular tissue, shoulder dysfunction

Introduction
More than 12% of women will be diagnosed with breast cancer at some point in their lives, and 78% of them can be expected to survive for at least 15 years. More than 2.8 million breast cancer survivors currently reside in the united states. After breast cancer treatment as many as 90% of survivors report physical problems that can reduce functional ability, produce or exacerbate emotional problems, negatively affect body image and diminished quality of life.
Shoulder pain constituted a highly important complain as it can cause limitation in daily routine activities and disturb sleep [1] It is responsible for about 16% of all musculoskeletal complaints and has a self -reported prevalence of about 16-26% in the general population [1-3].
Frozen shoulder can be a musculoskeletal manifesting of solid tumors and haematological malignancies (Ashour et at 1997; Lathma *et al*, 2001: Singh *et al*, 2005; Ghetia *et al*, 2010) In addition, frozen Sho Ulder is a frequent complication after mastectomy due to breast cancer (Wedgwood and Benson 1992 Cheville and t chou, 2007)

Case Report
A 54 year old female came with complain of right side breast pain in OPD of General Surgery KGMU, LKO, after taking her history it was found she had right breast lump since 5 months and had to be operated for breast conserving surgery with axillary clearance.

Investigation
FNA: Ductal carcinoma in situ
Trucut: BIOPSY 1.3*0.9*0.8 cm
IDC grade II NO LVI;
USG Necrosis: Absent is found normal
USG Breast /Mammography: Mass in right breast with small ipsilateral axillary lymph nodes.

IHC: ER (-) in tumor cells
PR in tumor cells
Her 2neu (++) in tumor cells
Ki 67. 2% (+) in tumor cells
Ck 5/6(-) in tumor cells
HPE: 1.3*0.9*0.8 cm
JDC grade II
No LVI, resection margin free

Diagnosis
After histological examination it was diagnose that the patient having

Infiltrating ductal carcinoma
Reused superior, inferior, medial, lateral, deep margin- free from tumor invasion.
Lymph node (0/II)- free from tumor invasion.
Nottingham Grading Grade II

Treatment Given
Before given chemotherapy and after surgery it was found on right breast Surface of previous surgery present in inferomedial quadrant.
B/l axillary lump palpable.
(L) breast WNL.

Table 1

Chemo Regimen	Day + Month	Cycle	Dose	Side Effect
CE	1ST MONTH	1ST	C-760 MG E-151 MG	NONE
CE	23RD (1ST ONTH)	2ND	C-760 MG E-151 MG	NONE
CE	28TH(2ND ONTH)	3RD	C-760 MG E-151 MG	NONE
CE	20RD (3RD ONTH)	4TH	C-760 MG E-151 MG	NONE
CE	24TH (4TH ONTH)	5TH	C-760 MG E-151 MG	NONE
CE	26TH (4TH ONTH)	6TH	C-760 MG E-151 MG	NONE

Instruction to the patient chemotherapy

After chemotherapy the patient was given follow up advice-

- **Maintain oral hygiene:** Rinse mouth after every meal, brush teeth twice daily
- **Maintain personal hygiene:** Bath daily with medicated soaps, put on clean, dry, loose comfortable clothes, avoid crowed space, avoid close contact with individual with flu, other infection.
- **High protein diet:** Ensure at least four nutrition's meals per day, eat freshly home cooked and easily digestible food, low on fats and spices: avoid eating raw food other than fresh and well washed fruits and salad

And if there is any complication feel by patients she was asked to contact in OPD

Chief complain after chemotherapy

After chemotherapy when patient was came 3rd grade burn in right breast axilla. Post right the patient was unable to move her right hand then the patient was refer to Department of Physical Medicine and Rehabilitation, KGMU LKO.

On Examination

On examination, it was found that the right arm demonstrates limited range of motion due to pain the appearance of her right arm was swelled and bluish in colour which was not normal. She reports pain on palpation of the right subdeltoid bursa and acromioclavicular joint area she feel no pain with palpation of the right forearm or bicipital tendon area and reports no numbness, tingling, neck pain or other symptoms.

Diagnosis

The patient was diagnosed with right rotator cuff syndrome related to her prior breast cancer treatment.

Rotator Cuff Syndrome (called rotator cuff disease) is, in our experience, a major cause of shoulder pain in breast cancer survivors, which is not surprising since it is the leading cause of shoulder pain in the general population [4, 5]. Major contributing factor may include surgery, reconstruction, and radiation, as well as the subsequent shortening of the surrounding chest wall muscle and soft tissue, misalignment of tendons and narrowing of the acromial arch. [7, 4]. The presence of lymphedema can contribute to rotator cuff syndrome [6].

Treatment

The treatment regime for the patient was under gone physical therapy for various mobilising exercise and stretching exercise but before that due to pain and swelling patient were given nerve stabilizers such as duloxetine and pregabalin to treat neuropathic pain NSAIDS was used as well and opioids were prescribed if she suffers from severe pain. After reducing pain and swelling the patient was asked to start mobilising and stretching exercise so that her shoulder range of motion become normal and patient can perform her ADL's as soon as possible the patient had to follow this regime for two month and to come for follow up after every two weeks. so that, her condition can be assessed.

Result

As the study was conducted for two month after the patient being referred from Department of General Surgery to DPMR in study it was found the swelling of the patient's arm was reduced and the patient was able to perform her ADL's.

Conclusion

In this case we found good prognosis in rotator cuff syndrome. The patient was following all the instruction, she was following proper diet plan, she was aware about her hygiene, she was regular following medication instruction, the patient was doing regular exercise as suggested.

Discussion

Shoulder pathology is the third most common musculoskeletal presentation in primary care [1,2]A part from the multiplicity of possible cause, shoulder pain create further diagnostic problems as pathologies and their clinical manifestation vary among patients. Additionally, pathologies and heir clinical mani fashions vary among patient. Additionally, pathologies often coexist which contributes to misdiagnose [9] The rotator cuff is comprised of supraspinatus, infraspinatus and teres minor. These secure the shoulder joint so it can move and allows for the normal functioning of the shoulder. However, the rotator cuff is easily worn down and susceptible to degeneration so it is weakest part of shoulder joint [10]. The most common malignant neoplasm in women is breast cancer taking up 32% of the malignant neoplasms. With the development of modern diagnosis techniques and treatment modalities, the mortality rate is decreasing, but it is still the most common cause of death in woman in their forties [11]. Thoma *et al*. [12] reported that cancer cells that spread to bone marrow accelerated osteolysis and osteoclast reaction and can cause pathological fractures or pain. In shoulder pain caused by metastatic cancer, there are reported causes of lung cancer that has spread to the humerus and [13] and kidney can that has spread to the humerus and scapula [14].

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