

# Frequency of Frozen Shoulder in Post Breast Surgery Patients

Alveena Sattar<sup>1\*</sup>, Umair Ahmed<sup>1</sup> and Kamran Hanif<sup>1</sup>

<sup>1</sup>University Institute of Physical Therapy, Faculty of Allied Health Sciences, The University of Lahore, Lahore, Pakistan

\*alveenatariq10@gmail.com

## Highlights:

- ▶ A cross sectional survey on frequency of frozen shoulder in post breast surgery patients.
- ▶ Frozen shoulder is a common condition among patients who undergo breast surgery.

## Abstract:

Adhesive capsulitis, also known as frozen shoulder, is a painful and inflammatory disease that inflames and stiffens connective tissue surrounding the glenohumeral joint of the shoulder, which severely restricts the movement of shoulder and causes chronic pain. This disease has become very common after breast cancer treatment.

## Objective:

To determine the frequency of frozen shoulder in patients after surgical treatment of breast carcinoma.

## Methodology:

A cross sectional study was conducted among 150 participants. Data was collected from Inmol Hospital and Mayo Hospital Lahore, Pakistan. The Shoulder Pain and Disability Index (SPADI) questionnaire was taken as standard to record the results

## Results:

Out of 150 participants 65.3% had developed frozen shoulder after breast surgery. Among them, 28% participants had mild pain, 23% reported moderate pain and rest 14% were suffering from severe pain.

## Conclusions:

Risk of developing frozen shoulder was high after breast surgery. Pain intensity was mild to moderate and sometimes severe depending upon other factors.

## Key words:

Frozen Shoulder, frequency post breast surgery, Pain intensity.

## Introduction:

Upper trunk pain and dysfunction are common in breast cancer survivors. Upper body diseases can develop directly from surgery, chemotherapy, radiotherapy or hormonal therapies used in breast cancer treatment.<sup>1,2,3</sup> This condition can lead to severe weight loss due to depression, neck, back problems and lack of long-term deep sleep. People who suffer from stiff shoulder are unable to work or perform their daily life activities for a long period of time during one year of surgical treatment of breast cancer.<sup>2,4</sup> A study proved that use of common drugs including Nonsteroidal Anti-inflammatory Drugs (NSAIDs) and corticosteroids are useful in that condition.<sup>5,6,7</sup> The development of medical treatment for women who suffered from adhesive capsulitis had sleep disturbance because of pain which worsens on lying down and movements are restricted especially in the case of breast cancer treatment. The condition can lead to severe weight loss due to depression, neck back problems and lack of long-term deep sleep diseases<sup>8,9</sup>. The shoulder capsule is condensed, swollen and squeezed due to the tapes (sticking) of the scar tissue formed in the capsule. Thus, it makes hard and painful movement of the shoulder joint. Upper body diseases can be born directly from surgery, chemotherapy, RT or hormonal therapies used in breast cancer or treatment. The incidence of frozen shoulder is about 3% in the general population. The frequency of occurrence in children and in people under the age of 40 is rare, but it reaches the peak of 40-70 years. Johansen *et al.*, reported that three dimensional conformal local regional Radio Therapy (RT) for breast cancer causes long term arm shoulder morbidity.<sup>10-14</sup> The purpose of the study is to determine the frequency

of frozen shoulder among patients who underwent breast surgery as some literature identifies breast surgery as one of the risk factors of developing frozen shoulder is available.

### Methodology:

A cross sectional study was conducted at Inmol and Mayo Hospital Lahore, Pakistan, on patients having surgery after breast carcinoma. After taking the informed consent, 150 females with minimum age 20 years and maximum age 48 years who had breast surgery were included. Patients having malignant carcinoma, cervical radiculopathy, fractures, trauma, vascular disease, referred pain and previous history of frozen shoulder were excluded. Shoulder Pain and Disability Index (SPADI) questionnaire allows participants to rate levels of shoulder pain and disability from 0 to 10 and self-reported data was obtained. The Data was analysed using SPSS 21.0.

### Results:

The frequency of frozen shoulder in patients with breast surgery was evaluated. Out of 150 participants 65.3% had developed frozen shoulder after breast surgery (Table 1). The intensity of pain among participants having frozen shoulder was reported. Among 150, 42 (28%) participants had mild pain, 35 (23%) reported moderate pain, 21 (14%) were suffering from severe pain while 52 (35%) had no pain (Table 2).

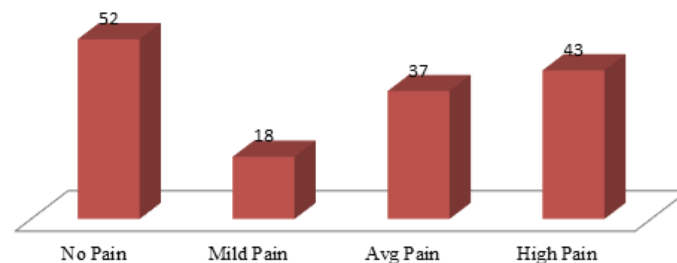
Frozen Shoulder	Frequency (%)
Yes	98 (65)
No	52 (35)
Total	150

**Table 1:** Frequency distribution of frozen shoulder

Intensity of pain	Frequency (%)
No Pain	52 (35)
Mild Pain	42(28)
Moderate Pain	35(23)
Severe Pain	21(14)
Total	150 (100.0)

**Table 2:** Intensity of pain

Out of 150 respondents, 18 (12%) faced mild pain, 37 (24.6%) respondents encountered average pain and 43 (28.6%) faced severe pain while carrying heavy objects (Figure 1).



**Figure 1:** Distribution of pain while carrying heavy objects

### Discussion:

This study investigated the frequency of frozen shoulder after breast surgery. Previous studies have evaluated motion restriction without considering the underlying causal conditions.<sup>2,4,11,12</sup> In addition, only the flexion and abduction range of motion (ROM) were measured in these studies.<sup>4,13,14</sup> Pectoralis dysfunction, defined as a reduction in lateral abduction in the shoulder and upper trunk pain and dysfunction are common in breast cancer survivors.<sup>15</sup> Upper body diseases can be born directly from surgery, chemotherapy, radiotherapy or hormonal therapies used in breast cancer or treatment adjustment.<sup>16,17</sup> This study was focused to check the frequency of frozen shoulder after breast surgery and frozen shoulder was present in 65% of participants who underwent breast surgery. Brue *et al.*, in their study had evaluated motion restriction without considering the underlying causal condition.<sup>18</sup> In a previous study Smoot *et al.*, reported that a number of increased risk factors could increase and recognize their intervention goals in order to improve the upper extremity role in those women.<sup>13</sup>

In a previous study, researchers reported that a number of increased risk factors could increase and recognize their intervention goals in order to improve the upper extremity role in these women, ROM nearly sticky capsulitis. Therefore, the frequency of adhesive capsulitis and the identification of risk factors in breast cancer patients are important in terms of the apparent

pathway mechanism and treatment modality resulting from other causes of ROM restriction. Researchers also found that the capsule sticking to the shoulder was contributing risk factor and also affects their interventional goals in order to improve the upper extremity role in these women. Age 50-59 years for adhesive capsulitis and mastectomy were important risk factors and chest reconstruction also increases the risk. Patients with these risk factors require more attention for early diagnosis and appropriate treatment<sup>1</sup> and current study also described that the frequency as found 98 out of 150 patients. Laubscher *et al.*, explored that the frozen shoulder usually disappointed both orthopedic surgeons and patients because the stages often coincide, it can be very difficult to place patients at a particular stage.<sup>20</sup> However, it was difficult to investigate this condition and may lead to misleading results and this study is also based on "Apley Scratch Test".

### Conclusions:

Frozen shoulder is a common condition among patients who undergo breast surgery. The pain was also checked during different daily life activities and pain was found varying from mild to moderate and sometimes severe.

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