

MANIFESTATIONS OF ADHESIVE CAPSULITIS

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ABSTRACT

Background: Adhesive capsulitis also known as Frozen shoulder, is a condition characterized by pain and significant loss of both active range of motion and passive range of motion of the shoulder.

Objective: To determine the pattern of symptoms in patients with adhesive capsulitis and factors associated with this condition.

Methodology: This was a cross sectional descriptive study design in which 25 patients with adhesive capsulitis were recruited by using convenient non-probability sampling technique. Both male and female, over 30 years of age with newly diagnosed cases were included. Exclusion criteria was the presence of other systemic or chronic diseases, patients already on medication and previous any surgery/ operation of shoulder joint. The data was analysed through SPSS version 25.

Results: Among the study group 72.0% were found to be in the age group 40-59 years having mean age of 51 years. Majority of patients (44.0%) were semi-skilled followed by professionals 28.0%. Majority of patients (52.0%) educational level was between graduation-masters. Among the total, 48.0% patients were diabetic followed by both diabetic and hypertension 20.0%. majority of patients (64.0%) pain scale level (V.A.S) was between 4-6. On examination majority of patients (28.0%) had decrease in AROM and PROM, presence of capsular pattern, muscular weakness and gleno-humeral joint swelling followed by 24.0% who had decrease AROM and PROM, presence of capsular pattern and muscular weakness.

Conclusion: In this study, signs, symptoms and risk factors were globally same of adhesive capsulitis.

Key Words: Adhesive Capsulitis, Frozen Shoulder, manifestations, ROM limitations, Shoulder Pain.

Highlights: Frozen shoulder/ adhesive capsulitis is more common among diabetics.

It is an inflammatory reaction in capsule and synovium that subsequently leads to formation of adhesions

It causes pain and decrease in ROM.

Introduction:

Adhesive capsulitis also known as Frozen shoulder, is a condition characterized by pain and significant loss of both active range of motion and passive range of motion of the shoulder. (1) It is an inflammatory reaction in capsule and synovium that subsequently leads to formation of adhesions. (2)

It has two main characteristics; pain and contracture. Pain usually progress to constant pain at rest that is aggravated by all movements of upper limb. (3) In adhesive capsulitis there is reduction of synovial fluid which provides lubrication to the joint. The capsule thickens, swells and tightens due to adhesion formation inside of capsule, making movement stiff and painful. (4)

The disease process usually passes through a cycle of 3 clinical stages, 1) Freezing, it is extremely painful stage, lasts for 10-36 weeks. Patients are reluctant to move not because of capsular tightening but due to extreme pain. 2) Frozen, (adhesive stage) lasts for 4-12 months, pain is worse at night. 3) Thawing, (recovery stage), duration is 12-24 months. Pain gradually subsides and is only present at the extreme range of movement but significant capsular restrictions are present.(5)It is common condition that affects approx. 2-5% of general population. The problem is seen to occur mostly in people of 40-70 years of age, females affected more than males. Incidence is 10-20% higher among patients with diabetes. Contralateral shoulder also become affected in 14% of patients.(6)

Dysfunction of upper extremity can result in permanent disability. Due to this disease posture of patients any disturb, such as forward head posture, protected shoulder.(7) Pain may refer to cervical region. It is considered to be a self-limiting disease, but unfortunately symptoms may never fully subside in many patients. No death occur due to this disease.(8) Adding acromioclavicular mobilization to standard physical-therapy was more efficient in decreasing pain and disability and improving active abduction range of motion compared to standard physical-therapy in frozen shoulder patients.(9) The posterior Maitland and Kaltenborn mobilization techniques are effective for improving pain and range of motion in frozen shoulder patients. Therefore, we recommend both techniques for such patients.(10) Mobilization with movement produced a statistically and clinically significant ROM increase consistently in all movement directions for shoulder adhesive capsulitis and hip pain. However, for shoulder impingement, shoulder pain/dysfunction, hamstring tightness, knee osteoarthritis, and chronic ankle instability pathologies, a therapeutic benefit regarding ROM could not be clearly established.(11)

Physiotherapy has most significant role in treatment of adhesive capsulitis. Different techniques, modalities, exercises are used to deal with patients’ symptoms. Treatment plan depends upon stage of disease i.e in acute phase/ protection phase the aims of therapist are reduce pain and reduce inflammation.

Materials & Methods:

This was a cross sectional descriptive study design in which 25 patients with adhesive capsulitis were recruited by using convenient non-probability sampling technique. Both male and female, over 30 years of age with newly diagnosed cases were included. Exclusion criteria was the presence of other systemic or chronic diseases, patients already on medication and previous any surgery/ operation of shoulder joint. The data was analyses through SPSS version 25.

The sample size was 25 approximately calculated using the following formula: $N = z^2 \times p(1-p) / d^2$. Data was analyzed using statistical package for social sciences (SPSS). Descriptive statistics in form of frequency and percentages was presented. Pie and bar charts were plotted. The information was obtained from all respondents through informed consent and data was collected through self-devised questionnaire and following score and test were applying.

RESULTS

SPSS version 21 was used to interpret the data. The feature frequency %, mean, and standard deviation were utilized to show categorical and demographic data. Among the study group 72.0% were found to be in the age group 40-59 years having mean age of 51 years. Majority of patients (44.0%) were semi-skilled followed by professionals 28.0%. Majority of patients (52.0%) educational level was between graduation-masters. Among the total, 48.0% patients were diabetic followed by both diabetic and hypertension 20.0%. Majority of patients (64.0%) pain scale level (V.A.S) was “between”4-6. On examination majority of patients (28.0%) had decrease in AROM and PROM, presence of capsular pattern, muscular weakness and gleno-humeral joint swelling followed by 24.0% who had decrease AROM and PROM, presence of capsular pattern and muscular weakness.

Table 1: Distribution of cases by the side involved

Shoulder involved	Males n (%)	Female n (%)	Frequency n (%)
Right	4(44.4)	6(37.5)	10(40.0)
Left	3(33.3)	10(62.5)	13(52.0)
Both	2(22.2)	----	2(8.0)
Total	9(36.0)	16(64.0)	100.0

Table 2: Distribution of cases according to pain scale (VAS)

V.A.S	Severity of pain	Males n (%)	Female n (%)	Frequency n (%)
1-3	Mild	2(22.2)	1(6.25)	3(24.0)

4-6	Moderate	6(66.7)	10(62.5)	16(64.0)
7+	Severe	1(11.1)	2(12.5)	3(12.0)
Total		9(36.0)	16(64.0)	100.0

Table 3: Distribution of cases according to Muscle spasm

Muscle spasm	Males n (%)	Female n (%)	Frequency n (%)
Present	5(55.6)	9(56.3)	14(56.0)
Absent	4(44.4)	7(43.7)	11(44.0)
Total	9(36.0)	16(64.0)	100.0

Discussion:

This study aimed primarily to determine the pattern of symptoms in patients with adhesive capsulitis and factors associated with this condition. This was a cross sectional descriptive study design in which 25 patients with adhesive capsulitis were recruited by using convenient non-probability sampling technique. Both male and female, over 30 years of age with newly diagnosed cases were included. Results indicated majority of patients (52.0%) educational level was between graduation-masters. Among the total, 48.0% patients were diabetic followed by both diabetic and hypertension 20.0%. Majority of patients (64.0%) pain scale level (V.A.S) was between 4-6. On examination majority of patients (28.0%) had decrease in AROM and PROM, presence of capsular pattern, muscular weakness and gleno-humeral joint swelling followed by 24.0% who had decrease AROM and PROM, presence of capsular pattern and muscular weakness.

Male to female ratio of adhesive capsulitis was 1:1.7 which was almost consistent with result of Brukner and Khan 2009 (1:1.3).(12) A proper explanation of this is still unclear. Most of the patients (36.0%) had common symptoms, pain in shoulder, lifting problems, problems in wearing garments, eating problems and radiating pain up to arm and neck and radiating pain up to the arm. This was consistent with the latest research.(13) Age and gender had no relationship with the symptoms, the only relates with the stage of disease i.e. freezing, it extremely painful stage. Frozen, it was also called adhesive stage. In this pain decreases at night and there is marked stiffness and capsular thickening. Thawing, it was also called recovery stage. In this there was no pain, no synovitis but significant capsular restrictions. This was consistent with results of the latest research.(14)Joint stiffness and decrease in AROM and PROM was present in every patient consistent with results of latest research.(15) This was due to formation of adhesions within the capsule which reduced the distensibility or give in the joint capsule, which allow greater angulations of bones as it swing is listed. High blood glucose level over time can lead to increased deposits of fatty materials on the insides of blood vessels walls.(16) These deposits may affect blood flow thus unable to clear the exudates with in the capsule as a result of trauma etc. the joint structure become soaked in this exudates and fibrinous constituents of the exudates 'glue' the collagenous fibers of the ligaments and tendons together results in the stiffness of joint.(17)

Conclusion:

In this study, signs, symptoms and risk factors were globally same of adhesive capsulitis.

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Conflict of interest:

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