



## "SHOULDER JOINT PERIARTHRITIS IN DIABETIC PATIENTS"

Dr. M. A. Q. Ansari\*

M.S. Ortho Professor, Department of Orthopaedics, K.B.N. Institute of Medical Sciences, Gulbarga-585102 (Karnataka) India. \*corresponding author

**ABSTRACT**

**Background:** Periarthritis of shoulder is a common clinical condition in patients with diabetes. This study was conducted to evaluate the results of intra-articular and subacromial injection of corticosteroid followed by range of motion exercises in diabetic patients.

**Methods:** Twenty four diabetic patients with Periarthritis were treated on outpatient basis. The patients were treated with intra articular and subacromial injection of 2ml of 2% lidocaine and 1ml of triamcinolone acetonide 40mg/ml. Range of motion exercises were advised and followed up at 2 and 4 weeks and thereafter every 2 months.

**Results:** Good pain relief was experienced by twenty patients at first follow-up and four patients had fair relief of pain. The average range of motion increased by about 1000 in abduction and forward flexion. Complications included a recurrence of symptoms in three patients between 6 and 12 months, and were successfully treated by reinjection.

**Conclusion:** Intra-articular and subacromial injection of steroid followed by range of motion exercises is effective in treating Periarthritis of shoulder joint in diabetic patients.

**KEYWORDS :** Periarthritis, shoulder joint, diabetic.**I. Introduction**

The term Periarthritis and adhesive capsulitis was coined in 1945 by Neviasser<sup>1</sup>. The prevalence of this condition was found to be five times more in patients with diabetes by Bridgman<sup>2</sup>. Type 1 diabetics were more commonly affected than those with type 2 diabetics. The exact etiology still remains unclear. The presentation is like inflammatory condition followed by fibrosis and collagen deposition. Inflammatory mediators like cytokines are involved in its pathogenesis as shown by Rodeo et al<sup>3</sup>. Tendonitis and tendinopathy of supraspinatus is frequently seen. This study evaluates the role of intra-articular and subacromial injection of steroid followed by range of motion exercises in treating this condition.

**II. Materials and Methods**

Twenty four diabetic patients diagnosed with Periarthritis of shoulder were evaluated and treated in the outpatient department between January 2015 and December 2017. The age range of the patients was between 36 to 60 years with a mean age of 48 years. There were ten male and fourteen female patients. Twelve patients had involvement of the dominant right hand, eight had involvement of left hand and four had bilateral involvement. All presented with gradual onset of pain and stiffness in the affected shoulder, more common in the morning hours. Duration of symptoms varied from two to eight months. Few patients gave history of minor trauma before the onset of symptoms. Some had tried a course of pain killers before presenting to us. Examination revealed generalized tenderness about the shoulder region, range of motion was restricted in all planes of movement more so in abduction and internal rotation. Patients had difficulty in perineal hygiene and combing their hairs. Imaging studies were done with radiography of involved shoulder which were normal in eighteen patients and showed sclerosis of the inferior acromial margin in four patients.

Patients were treated with intra-articular and subacromial injection of 2ml of 2% lignocaine with 1ml of triamcinolone acetonide 40mg/ml. With the patient sitting both anterior and posterior approach to shoulder joint was used for injection. Passive stretching of the joint was done for few minutes, and the patients were instructed to do exercises for range of motion. Patients were advised for follow up at two, four weeks and there after every two months for a minimum of one year.

**III. Results**

Visual analog scale (VAS) was used to evaluate the relief of pain and the range of motion were recorded and compared to the status at presentation. Age distribution of the patients is shown in table 1. Involvement of the side of the study cohort is given in table 2.

**Table 1: Age and sex distribution**

Age (yrs)	Male (%)	Female (%)	Total (%)
30-40	02 (8.33%)	04 (16.66%)	06 (25.00%)
40-50	05 (20.83%)	06 (25.00%)	11(45.83%)
50-60	03(12.50%)	04(16.66%)	07(29.16%)
<b>Total</b>	<b>10 (41.66%)</b>	<b>14 (58.33%)</b>	<b>24 (100%)</b>

**Table 2: Side distribution of the study cohort**

Side	Male	Female	Total
<b>Right</b>	05	07	12
<b>Left</b>	04	04	08
<b>Bilateral</b>	01	03	04
<b>Total</b>	<b>10</b>	<b>14</b>	<b>24</b>

The evaluation was done at the end of six months. Good pain relief was experienced by twenty patients at first follow-up and four patients had fair relief of pain. The average range of motion also increased by about 1000 in abduction and forward flexion. Internal rotation was up to L2 level. All the patients were able to do their daily activities without pain at the follow up of four weeks. Complications included a recurrence of the symptoms in three patients between six and twelve months. These were successfully treated with reinjection.

**IV. Discussion**

In diabetic patients the total prevalence of Periarthritis of shoulder is 38.6% and in pre-diabetics it is 33% as reported in the year 2008 by Tighe and Oakley<sup>4</sup>. It is also suggested that the patients who present with the Periarthritis of shoulder need to be evaluated for diabetes if not already diagnosed. The usual stage of presentation is during the acute inflammatory stage before the onset of the fibrosis of the shoulder capsule and the subacromial bursa, which usually occurs few months after the onset of symptoms<sup>5,6</sup>.

The underlying pathology is extra capsular rather than intra-capsular, which can be confirmed by the immediate response of pain relief and improved shoulder range of motion on injection of a local anaesthetic in the subacromial region. Inflammatory stage shows the presence of several cytokines, namely transforming growth factor-beta, platelet derived growth factor and hepatic growth factor in high concentrations in the synovium and the capsule of the shoulder joint. There is also thickening of the capsule especially in the region of the axillary pouch in patients with periarthritis<sup>7,9</sup>. Several studies in the past also have conclusively shown that these patients have good response to injection followed by a course of physical therapy<sup>10-13</sup>. The patient's compliance to perform exercises at home is the key to good result in these cases. None of the patients required manipulation under general anaesthesia or the arthroscopic release<sup>14-17</sup>. No additional treatment for diabetes was required though a transient rise in their sugar levels were noted.

## Conclusion

Injection of a combination of steroid and local anaesthetic followed by range of motion exercises is a very effective therapy for the management of Periarthritis of shoulder joint especially in diabetic patients.

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