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Effectiveness of injection triamcinolone in bicipital tendinitis

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Abstract

Context: Bicipital tendinitis is one of common causes for painful shoulder conditions. It has remarkable impact on the patients personal and professional life with affection on activities of daily living leading to severe economic consequences.

Aim: To Evaluate the outcome of Local steroid injection in Bicipital Tendinitis.

Materials and Methods: This is a prospective study conducted on 22 patients who are diagnosed to have bicipital tendinitis confirmed by clinical tests and radiological investigations at Father Muller medical college, Mangalore, Karnataka, India.

Results: In 22 cases diagnosed to have bicipital tendinitis, females were found to have more preponderance 72.73% and the dominant side is affected commonly 72.27%. p value is significant $p < 0.001$ in pre injection and post injection of local steroid.

Conclusion: Local steroid injection is proved effective in improving the symptoms.

Financial Support and Sponsorship: Nil.

Conflicts Of Interest: None declared.

Keywords: Bicipital tendinitis, common causes, painful shoulder conditions, economic consequences

Introduction

Biceps muscle has two heads of origin, short head arises from coracoid process and long head arises from supraglenoid tubercle. Bicipital tendinitis is defined as inflammation of long head of biceps within the bicipital groove. It occurs due to chronic wear and tear of tendon. It is one of the common causes for shoulder pain. Due to position and function, it is one of common tendon to get injured. Bicipital tendinitis can be primary due to inflammation of the long head of biceps or secondary to other conditions from impingement, rotator cuff disorders and labral tear as a compensatory process. Initially it is managed conservatively by giving analgesics and physiotherapy. If the conservative treatment fails then before going for surgery we give local steroid injection to reduce the symptoms, as all patients may not be willing for surgery and to avoid complications associated with surgery.

Aim of Study

To Evaluate the Outcome of Local steroid Injection in Bicipital Tendinitis.

Materials and Methods

22 Patients were included in the study. The study was conducted March 2016 to January 2017. They came with the complain of insidious onset of shoulder pain. Patients were assessed by taking proper history, doing clinical tests and asking for relevant radiological investigations. The condition is confirmed and other causes of shoulder pain like rotator cuff tear or bony injuries were ruled out. Patients satisfying selection criteria were taken for study. They were assessed using Quick DASH score chart: 1 [29]. Scoring done before giving injection and at 4, 12, 24 weeks post injection. DASH score has been shown to correlate with general health measures and joint-specific measures [6]. The Quick DASH is valid alternative for DASH scoring system. It is equally responsive and comparable to the DASH scoring system. The final results available from DASH and Quick DASH scoring system are similar [26]. Scores are calculated before giving local steroid injection and at 4, 12, 24 weeks post injection.

Please rate your ability to do the following activities in the last week.					
1. Open a tight or new jar	<input type="radio"/> No difficulty	<input type="radio"/> Mild difficulty	<input type="radio"/> Moderate difficulty	<input type="radio"/> Severe difficulty	<input type="radio"/> Unable
2. Do heavy household chores (eg wash walls, wash floors)	<input type="radio"/> No difficulty	<input type="radio"/> Mild difficulty	<input type="radio"/> Moderate difficulty	<input type="radio"/> Severe difficulty	<input type="radio"/> Unable
3. Carry a shopping bag or briefcase	<input type="radio"/> No difficulty	<input type="radio"/> Mild difficulty	<input type="radio"/> Moderate difficulty	<input type="radio"/> Severe difficulty	<input type="radio"/> Unable
4. Wash your back	<input type="radio"/> No difficulty	<input type="radio"/> Mild difficulty	<input type="radio"/> Moderate difficulty	<input type="radio"/> Severe difficulty	<input type="radio"/> Unable
5. Use a knife to cut food	<input type="radio"/> No difficulty	<input type="radio"/> Mild difficulty	<input type="radio"/> Moderate difficulty	<input type="radio"/> Severe difficulty	<input type="radio"/> Unable
6. Recreational activities in which you take some force or impact through your arm, shoulder or hand (eg golf, hammering, tennis, etc)	<input type="radio"/> No difficulty	<input type="radio"/> Mild difficulty	<input type="radio"/> Moderate difficulty	<input type="radio"/> Severe difficulty	<input type="radio"/> Unable
7. During the past week, to what extent has your arm, shoulder or hand problem interfered with your normal social activities with family, friends, neighbours or groups?	<input type="radio"/> Not at all	<input type="radio"/> Slightly	<input type="radio"/> Moderately	<input type="radio"/> Quite a bit	<input type="radio"/> Extremely
8. During the past week, were you limited in your work or other regular daily activities as a result of your arm, shoulder or hand problem?	<input type="radio"/> Not limited at all	<input type="radio"/> Slightly limited	<input type="radio"/> Moderately limited	<input type="radio"/> Very limited	<input type="radio"/> Unable
Please rate the severity of the following symptoms in the last week					
9. Arm, shoulder or hand pain	<input type="radio"/> None	<input type="radio"/> Mild	<input type="radio"/> Moderate	<input type="radio"/> Severe	<input type="radio"/> Extreme
10. Tingling (pins and needles) in your arm, shoulder or hand	<input type="radio"/> None	<input type="radio"/> Mild	<input type="radio"/> Moderate	<input type="radio"/> Severe	<input type="radio"/> Extreme
11. During the past week, how much difficulty have you had sleeping because of the pain in your arm, shoulder or hand?	<input type="radio"/> No difficulty	<input type="radio"/> Mild difficulty	<input type="radio"/> Moderate difficulty	<input type="radio"/> Severe difficulty	<input type="radio"/> So much difficulty I can't sleep

Chart: 1 [29]

Inclusion Criteria

All adult patients of age less than 65 years.
 Insidious onset of shoulder pain.
 Failed conservative treatment.

Exclusion Criteria

Associated with rotator cuff tear
 Fractures around shoulder joint.
 Previous local steroid injection for bicipital tendinitis.
 Any surgery done for the affected shoulder.

Clinical Picture and Evaluation

Patients came to us with the complains of pain over anterolateral aspect of shoulder referred along anterior surface of arm. Pain aggravated by shoulder movements, worse at night and relieved by rest. Repetitive overhead arm motion, pulling or lifting may also initiate or exacerbate the pain [8]. Instability of the tendon may present as a palpable or audible

snap when range of motion of the arm is tested. The most common finding of biceps tendon injury is tenderness over bicipital groove [10] and at coracoid process. Clinically diagnosed by simple tests like Speed test, Yergason test.

Radiologic Examination

Radiologic evaluation to diagnose biceps tendinitis or tendinosis should begin with radiography of the shoulder to rule out primary causes of impingement [10, 12, 14, 12-21]. Negative results on radiography should be followed by ultrasonography of the shoulder, which is the best method by which to extraarticularly visualize the biceps tendon. Presence of fluid within the tendon sheath of biceps confirms the diagnosis of bicipital tendinitis. Table 1 shows advantages, disadvantages of ultrasonography. Fig 1 Shows radiological appearance of inflamed biceps tendon with collection of fluid within the sheath.

Table 1

Imaging	Advantages	Disadvantages
USG	Inexpensive May be used for patients with metallic implants. Dynamic, Easy available No radiation An overall sensitivity of 49 percent and a specificity of 97 percent	Experienced radiologist required High frequency array transducer Difficult in fatty people [24, 13-19]



Fig 1: Inflamed biceps tendon with collection of fluid within the sheath.

Contents of Injection

We use Inj. Triamcinolone 40mg mixed with 2ml of Inj. Lignocaine 1.0%

Technique of Injection



Fig 2: a Injection at bicipital groove



Fig 2: b Injection at coracoid process

After explaining the patient about the procedure. We mark the injection site after palpating the bicipital groove and coracoid process. Injection site is cleaned with betadine and spirit. Patient lying supine or sitting posture with arm supinated. A 25 G needle is used, going cephalad at 20-30 degree angle (Fig2.a). If gritty tissue entered, pull back and redirect to get into tendon sheath of long head of biceps tendon. Aspirate to rule out not in vessel and then full content is injected. Needle withdrawn and band aid is applied [27]. Similarly injection of steroid is given to short head of biceps over coracoid process by going perpendicularly over coracoid process (Fig 2.b).

Results

22 patients who came to orthopaedic outpatient clinic at Father Muller medical college, Mangalore were assessed by taking proper clinical history, doing clinical tests and doing appropriate radiological investigations. After confirming the condition and satisfying selection criteria, they were included

into the study. Over the period of study none of the patients were missed in the follow up. In our study female preponderance is seen Table 4. All patients included in study were right hand dominant ones. Right side affection is seen in 17 cases Table 5. The condition is seen in predominantly in age group of 31-50 years Table 1.A & Table 1.B

Friedman test is used to analyse the results of the study. It was found to be significant improvement in the patient condition after giving local steroid injection, p value <.0001 as shown in the Table 2. During the follow up periods p value found to be highly significant p<0.001 between pre injection and 4 week, between pre injection and 12 week and between 12 & 24 weeks follow up. The p value is found significant between pre injection and 24 week and in between 4 and 12 week follow up table 2, table 3, Fig 3. It means that though some patients develop recurrence of symptoms but overall they have better scores when compared to pre injection scores.

Table 1: A Age distribution

	N	Minimum	Maximum	Mean	Std. Deviation
Age	22	18	52	41.55	8.296

Table 1: B Age

	Frequency	Percent
30 and below	3	13.6
31 - 50	18	81.8
Above 50	1	4.5
Total	22	100.0

Table 2

	N	Mean	Std. Deviation	Median	Friedman Test	
					value	p
Pre-injection	22	40.28	10.20	38.60	60.242	.000
4 w eeks	22	7.75	4.41	6.80	HS	
12 w eeks	22	13.33	9.42	9.10		
24 w eeks	22	34.39	14.20	32.95		

Table 3: pairwise comarison

	Wilcoxon signed rank test p value	
Pre-injection - 4 w eeks	.000	HS
Pre-injection - 12 w eeks	.000	HS
Pre-injection - 24 w eeks	.020	sig
4 w eeks - 12 w eeks	.012	sig
4 w eeks - 24 w eeks	.000	HS
12 w eeks - 24 w eeks	.000	HS

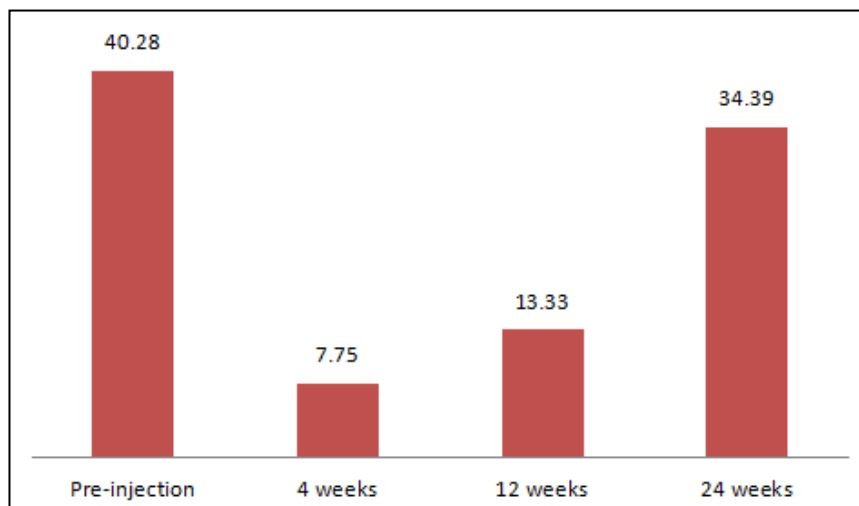


Fig 3

Table 4: Sex ratio

	Frequency	Percent
Female	16	72.7
Male	6	27.3
Total	22	100.0

Table 5: Side of affection

	Frequency	Percent
Left	5	22.7
Right	17	77.3
Total	22	100.0

Discussion

Bicipital tendinitis is the inflammation of long head of biceps tendon within the bicipital groove. They can be classified into two types primary where there is isolated inflammation of long head of biceps occurs and secondary where the conditions like rotator cuff tear, impingement syndrome,

where the inflammation of long head of biceps occurs as compensatory process. Although various conditions can present as shoulder pain. Therefore accurate diagnosis is essential for appropriate management to minimise or avoid morbidity. Good clinical history, clinical examination and relevant radiological examination all together help in confirming the diagnosis and to rule out other causes of shoulder pain. The local steroid injection is effective in improving the patient conditions and they were symptomatically better at 4 & 12 weeks. The p value is found highly significant <0.001 between pre injection and 4 week and between pre injection and 12 week follow up. Though at 24 week follow up many people complained of recurrence of pain but still they are symptomatically better when compared with their pre injection status and the p value found <0.05 Table 2.

Conclusion

According to our study and its results we have found that local steroid injection is found effective in relieving the symptoms in patients with bicipital tendinitis. Patients found beneficial with local steroid injection in both short term and long term follow ups. So local steroid injection is better alternative to surgery in whom conservative treatment fails to control symptoms.

Financial Support and Sponsorship

Nil

Conflicts Of Interest

None declared.

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