

Efficacy of Intrasheath Steroid Injection in Treating De Quervain's Disease

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ABSTRACT

Objective: To determine the effectiveness of Intrasheath steroid injection in treating de Quervain's disease.

Study Design: Case series observational study.

Place and Duration of Study: Outpatient Department of Orthopedics BBS [DHQ] Teaching Hospital Abbottabad from April 2006 to Sept 2009 including a period of follow up of eighteen months.

Materials and Methods: Eighty patients with de Quervain's disease were diagnosed on the basis of positive Finkelstein's test and presence of severe pain for more than four weeks. These patients were given intrasheath injections of 40 mg Methyl Prednisolone mixed with one ml of lignocaine 2% in the first dorsal compartment of wrist. Patients with trauma, infection and rheumatoid arthritis were excluded from study.

Results: Seventy two patients i.e., 90% were cured and out of them 75% required only one injection. Only two cases underwent surgical release.

Conclusion: Intrasheath steroid injection is a safe, very useful and cost effective method in treating de Quervain's disease.

Key Words: *de Quervain's disease, intra sheath injection, steroid injections*

Introduction

In a busy outpatient department of orthopedics or rheumatology we come across with a lady having a sore thumb and wrist, almost on daily basis. It was Fritz de Quervain, a Swiss surgeon who in 1895, first described this condition as a tenosynovitis of the first dorsal compartment.¹ Most of patients suffering from this problem first try different things either at their own or on the advice of their GP's ranging from natural to physical therapies and NSAID etc. But to their dismay most of these techniques fail and they have to seek the advice of specialist doctor.

Surgical release of the stenosing sheath is a good option in resistant de Quervain's cases. Although performed as a day case, it requires about two weeks for complete recovery, besides it is much costly and associated with a number of complications.^{2,3} Surgical treatment is often chosen without careful consideration and

importance of non surgical options is not emphasized.⁴ Recently there have been a number of claims regarding the efficacy of intrasheath steroid injection. Sawaizumi, et. al., reported an efficacy rate of 94% with intrasheath injection of steroids.⁵ Richie and Eriner reviewing seven current reputable papers, concluded that the efficacy rate of injecting the steroid alone was 83%.^{6,7,8,9} It is a safe and simple technique which can be carried out in outpatient department.¹⁰ There is very little chance of serious complications as well.¹¹

Hence this study was carried out to further strengthen this claim that injection treatment of de Quervain's disease is the best option and it is not associated with any serious complication.

Materials and Methods

This observational study was done in outpatient department of orthopedics of BBS [DHQ] Teaching Hospital Abbottabad from April 2006 to Sept 2009 including a follow up period of eighteen months. Eighty patients, who were diagnosed on the basis of positive Finkelstein test, were included in this study. All patients had severe pain

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which was interfering their daily activities for more than four weeks. Besides other methods of treatment like rest, splints, physiotherapy and NSAIDs had not given much benefit. All patients with a history of rheumatoid arthritis, trauma or local infection were excluded. We injected 40 mg of Methyl Prednisolone mixed with one ml of Lignocaine 2% in a 3 cc syringe. Instead of giving vertical injections we bent the needle at 45 degrees and passed it from distal end proximally parallel to the involved tendon in the first dorsal compartment of wrist. Slight ulnar deviation made it easy. Intra sheathal status of the needle was ensured by the need of less force to push the syringe and absence of swelling in subcutaneous tissue. All patients were asked to report after two weeks if no complications occurred. Success was measured by absence of pain on wrist movements and a negative Finkelstein's test. Second injection was given after three weeks in patients who showed less improvement or recurrence. A third injection was given after another three weeks in cases who had still not responded to the treatment.

Results

Out of 80 patients, 72 were considered to be cured as they remained symptom free after 18 months of follow up. In 75% of these cases only one injection was used (Table II). In others a second injection was given after 03 weeks. Out of 80 patients, those who reported with recurrence even after second injection, a third injection has to be given i.e., 08 patients (10%). Of these 08 cases, 02 finally underwent surgical release. The fear and doubts about injection were removed, to a large extent by proper counseling. After injection, 90% of patients were satisfied and ready to accept it again if required.

Slight increase in pain was reported by 70% of patients which however improved over a week in patients who were later declared

cured.

Depigmentation at the injection site was reported in five patients and atrophy of fat in subcutaneous tissue was seen in one patient only. No tendon rupture, infection or injury to radial nerve was seen.

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Discussion

Owing to de Quervain's tenosynovitis common occurrence, there must be some treatment guidelines and recommendations so as to save time and cost. The Brigham and women's Hospital guidelines for treatment of de Quervain's tenosynovitis, state that corticosteroid injection may be very helpful and that they should be considered if symptoms persist beyond 6 weeks of conservative treatment.¹² whereas Orthopedic text books recommend corticosteroid injection for de Quervain's tenosynovitis after 2 weeks of conservative treatment has failed.¹³ Up to date recommends steroid injection if pain persists for more than 2 to 6 weeks despite splinting, icing and NSAID therapy.¹⁴

A pooled quantitative literature search concerning the treatment of de Quervain's tenosynovitis compared 07 studies (a total of 459 wrists of the 226 cases) treated with steroid injection alone 83% were cured, though 30 of these needed a second injection. Sixty one percent of those treated with injection and splint were cured, while 14% treated with splint alone reported cure.⁷ In another retrospective study comparing injection with splinting and non steroidal anti inflammatory drugs NSAIDS, Authors

stratified patients into minimal, mild, or moderate to severe, groups based on their severity of disease. Of those cases treated with splinting and NSAIDS, 15 of 17 in the minimal group had resolution of symptoms, but only 4 of 20 in the mild group and 2 of 8 in the moderate to severe group had symptoms resolved. The injection group showed better results with 100% of cases in the minimal to mild groups resolving and 76% of those in the more severe group resolving completely with an additional 7% reporting improvement.¹⁵

To make steroids more effective, injection needs to be properly placed in the tendon compartment i.e. intra sheath.¹⁶ The efficacy can be enhanced and complication rate reduced to almost nil by ultrasound guided injections of steroids into tendon sheaths.¹⁷

However an earlier prospective study of 103 patients found suprafibrous injection to be easier to perform than intrasynovial injection and to have the same effects.¹⁸ In our study we gave intra sheath injections and did not find it much difficult, besides it can also avoid potential complications of leakage of steroids in subcutaneous tissue or damage to superficial radial nerve by misplaced needle. We slightly modified the original technique by bending the needle to almost 45 degree and inserting it beneath the tendons along there line proximately.¹⁹ An orthopedics study compared different techniques for injection and found that two point injections vertically in the indurated area is better than injection at one point.⁵ But we think if it is properly placed in the sheath or compartment, it does not matter even if there is a septum with in the first dorsal compartment of wrist.^{20, 21} This septum would be more effective than surgical as compared to injection as injection liquid would spill over or will he absorbed in the vicinity as well that is why Taras JS et. al., concluded that exact location of injection into the sheath may not be important in the

treatment of trigger digits.²²

Surgical release is not a bad option in de Quervain's disease but it is not fair to choose an option which is invasive, costly and not without some serious complications, particularly when a simple injection of steroids can cure almost 80-90% of cases.²³ However in chronic cases with much thickening of the sheath and those not responding to repeated local injection can be treated by surgical release with good long term relief.^{24, 25}

Conclusion

Intrasheath steroid injection is a safe, very useful and cost effective method in treating de Quervain`s disease.

Table I: Demographic Data of study population (n= 80)

No. of patients	Age	Sex	Occupation
51	30 - 50	F	House Wife
8	20 – 30	F	Student
9	25 – 35	F	Beautician Office worker
7	30 – 35	M	Plumber /labours
5	20 – 25	M	Students / sportsmen

Table II: Number of injections and their response in the treatment of de Quervain's disease (n= 80)

No. of patients	No. of injections	Response
54	ONE	All CURED
18	TWO	10 "
6	THREE	6 "

References

1. Lapidus PW. Stenosing tenosynovitis. *Surg Clin North* 1953;33:1317-47.
2. Froimson A. Tenosynovitis and tennis elbow. In: Green DP (ed) *Operative hand surgery Vol 2* 3rd edn. Churchill livingstone. New York: 1993. PP1989-2006.
3. Tak T, Eidelman D, Thomson JG. Patient satisfaction and outcomes of surgery for de Quervain's tenosynovitis. *J hand Surg* 1999; 24: 1071-7.
4. Ahuja NK, Chung KC, Fritz de Quervain. Stenosing tendovaginitive at the radial styloid process. *Hand Surg* 2004; 29:1164-70.
5. Sawaizumi T, Nanno M, Ito H, De Quervain's disease: efficacy of intra- sheath triamcinolone injection. *Int Orthop* 2007; 31: 265-8.
6. Harvey FJ, Harvey PM. de Quervain's disease: surgical or non surgical treatment *J hand Surg* 1990; 15:83-7.
7. Richie CA III, Eriner WW Jr. Corticosteroid injection for treatment of de Quervain's tenosynovitis a pooled quantitative literature evaluation. *J Am board Fam Pract* 2003; 16:102-6.
8. Weiss Ac, Abeiman E, Tabatabai M. Treatment of de Quervain's disease. *J hand Surg* 1994; 19:595-8.
9. Zingas C, Failla JM, Holsbeeb MV. Injection accuracy of clinical relief of de Quervain's tendinitis. *J hand Surg* 1998; 23: 89-96.
10. Tallia. *Am Fam Physician* 2003; 67:745-50.
11. Avei. *J hand Surg* 2002; 27:322-4.
12. Brigham and women's Hospital upper extremity musculo skeletal disorders: A Guide to prevention, diagnosis and treatment. Boston, Mass: Brigham and Women's Hospital 2003.
13. Brinker MR, Millor MD. *The Adult wristin: Fundamental of Orthopeadics*. Philadelphia, Pa: WB saunders; 1999: 179-95.
14. Anderson BC, Sheon RP. De Quervain's tenosynovitis up to Date [On line data base] (updated May 7, 2004) Waltham, Mass: Up to Date; 2004.
15. Lane LB, Boretz RS, Stuchin SA. Treatment of de Quervain's disease: role of conservative management. *J hand Surgery* 2001; 26:258-60.
16. Ilyas AM, Astm, Schaffer AA. de Quervain's tenosynovitis of the wrist. *J Am Acad Orthop Surg* 2007; 15: 757-64.
17. Jeyapalen K, Chowdhary S. Ultrasound guided injection of triamcinolne and bupivicaïne in the management of de Quervain's disease. *Skeletal Radiol* 2009; 38:1099-103.
18. Apimonbutr P, Budhraje N. Suprafibrous injection with corticosteroid in de Quervain's disease. *J Med Assoc Thai* 2003; 86: 232-7.
19. Lennard TA. Fundamentals of procedural care. In : Lannard TA , ed. *Physiatric Procedures. In clinical practice*. Philadelphia, Pa: Hanley and Belfus; 1995:1-13.
20. Jachson WT, Viegas SF, Coon J Mol. Anatomical variation in the first extensor compartment of wrist: Clinical and anatomical study. *J Bone joint Surg* 1986; 68:923-6.
21. Leslie Bm, Ericson WB Jr, More head JR. Incidence of a septum with in the first dorsal compartment of the wrist. *J hand Surg* 1990; 15:88-91.
22. Taras JS, Rapheal JS, Pan WT. Corticosteroide injections for trigger digits: Is intra sheath injection necessary? *J hand Surg* 1998; 23: 88-91.
23. Anderson BC, Manthey R, Mathew CB. Treatment of de Quervain's tenosynovitis with corticosteroids. A prospective study of response to local injection. *Arthritis Rheum* 1991; 34:793-6.
24. Scheller A, Schuh R, Honle W. Long term results of surgical release of de Querrain's stenosing tenosynovitis. *Int Orthop* 2009; 33: 1301-3.
25. A KT, Eidelman D, Thomson JG. Patient satisfaction and outcomes of surgery for de Quervain's tenosynovitis. *J hand Surg* 1999; 24: 1071-7.

