In De Quervain's tenosynovitis (DQST), pain and tenderness are felt at the radial styloid. This condition, first described by Fritz de Quervain in 1895, is associated with repetitive movements involving pronation and supination of the forearm, ulnar and radial deviation of the wrist, and abduction/extension of the thumb. The overloading of the first dorsal compartment of the wrist leads to tendinosis.

Conservative treatment, including rest with a splint or cast, and injection of a steroid preparation have been used for DQST. However, there is no consensus on the best protocol for wrist immobilization. Full-time splint or cast application for four to six weeks is recommended by some authors.

This study aimed to compare the outcome of methylprednisolone acetate injection for the treatment of DQST.

**Materials and Methods:**
A prospective clinical study was conducted from May 2012 to May 2013 at the Agency Headquarter Hospital Landikotal. Fifty patients with stenosing tenosynovitis were included. The follow-up period was 6 months.

**Results:**
The pain rating decreased from 95 mm to 9 mm at the final follow-up. Injection alone was found to be the best therapeutic approach to DQST.

**Conclusion:**
Injection alone is the preferred treatment for DQST. Any doctor can perform this procedure.
a positive Finkelstein test. Treatment efficacy was defined as the absence of all of these criteria subsequent to intervention.

The exclusion criteria were (1) a previous history of acute trauma, (2) wrist fracture, (3) steroid injection, (4) pregnancy, and (5) rheumatoid arthritis. Finkelstein's test was performed as the most pathognomonic objective sign in diagnosis of this disease.

All patients were informed about the nature of the disease and plan of treatment. Written informed consents were given by all patients. Patients were given an injection of 1ml (40 mg) methylprednisolone acetate with a fine gauge (25 or 27) insulin needle at about 2 cm above the styloid process of the radius into the first dorsal compartment of the wrist. Subsequently all patients were advised not to do strenuous activities and use analgesic drugs when required for the first two weeks. All the patients were reviewed on monthly basis for six months. At each visit, patients were asked about and examined for any residual pain, Finkelstein test and tenderness over the radial styloid. A total of 50 patients were included in the study as per above criteria. The outcome was assessed in terms of the three physical signs; including wrist pain, tenderness and Finkelstein test. Treatment was considered successful if all three of these findings resolved and the patient had at least 90% improvement in the pain score. Failure was defined as absence of anyone of these three findings and/or less than 90% improvement in the pain score. Pain was assessed by a 100 mm visual analog scale (VAS) before treatment and during follow-up, with 0 defined as no pain and 10 as the worst pain.

Results:
A total of 52 patients were eligible for the study. No patient chose to withdraw; however, 2 patients who did not regularly attend the follow-up visits were omitted from the study. A total of 50 patients who were regularly followed up completed the study. The study participants included 42 (84%) women and 8 (16%) men. The patients were followed up on monthly basis for 6 months.

The mean pain rating based on VAS in the patients decreased from 95 mm before treatment to 9 mm at the final follow-up.

The overall success rate was 84%. 10 out of 50 patients demonstrated recurrence in one or more signs of disease during the follow-up period. The rates of failure with injection was 16%. Skin discoloration and radial nerve palsy was noted in 3 cases and 2 cases which resolved gradually over 6 months and 4 months respectively.

Discussion:
De Quervain disease is a stenosing tenosynovitis of the first dorsal compartment of the wrist. The inflammation may be caused by anything that inflames and narrows the compartment or causes swelling or thickening of the tendons. The process is attributed to activities requiring frequent abduction of the thumb and simultaneous ulnar deviation at the wrist. Repetitive trauma, overuse, or an inflammatory process are likely causes, but frequently, the etiology of this condition is unknown.

This study has revealed that patients respond favorably to methylprednisolone acetate injection. The effectiveness of corticosteroid therapy is attributed to the anti-inflammatory effects of this drug, but the exact mechanism of action remains unclear. There are a few reports on the results of treatment of this disease with a single injection plus cast versus cast alone. In a study by Kitti et al. the success rate with steroid injection was 67%. In a systematic review of effectiveness of corticosteroid injection for de Quervain’s tenosynovitis, performed by Richie and Eriner that included seven observational studies with 459 wrists, it was determined that 83% of the 226 wrists which received injection alone were cured, 61% of the 101 wrists that received injection and splint immobilization were cured, and 14% of patients who received splinting alone were cured. The results of these studies are quite comparable to our study.

In our study injection failure was 16% which was comparable to a study done by seyed Abdolhossein Mehdinasab who had 13.5% failure rate
with steroid injection. Findings at surgery have led some investigators to note that injection failure can occur secondary to anatomic variation within the first extensor compartment. One author\textsuperscript{12} found a separate synovial compartment containing the extensor pollicis brevis at surgery in 91\% of cases that failed one or more injections. Cadaveric dissection studies have shown that this variant is present in 40\% of wrists.\textsuperscript{13} These authors suggest that surgery might be considered in cases where two well-placed injections have failed, and all diagnostic criteria are still present after 4 months of symptoms.\textsuperscript{12,13}

The limitation of our study was short term followup, therefore more studies with long duration of study needs to be done to find out recurrence rate after steroid injection.

Conclusion:
It seems that injection alone is the best therapeutic approach to de Quervain’s tenosynovitis. Any doctor who understands the anatomy of the first dorsal wrist extensor compartment can readily perform this procedure.

References: