

Operative Outcome of Tennis Elbow by Open Modified Nirschl Technique- Short Term Analysis

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I. Introduction

Tennis elbow is commonly diagnosed in patients with pain over the lateral aspect of elbow, worsened or aggravated by repetitive or excessive movement of wrist, with the elbow in extension. Tenderness over the lateral epicondyle, and resisted wrist extension worsens the pain. Tennis elbow is more prevalent in patients of 4th and 5th decade, with no gender preference, and involves the dominant elbow in 70% of patients. (1) Recently the non-inflammatory nature of tendinopathy has been stressed (2,3) and it has become clear that tennis elbow does not involve an inflammatory process of common extensor origin (CEO). KRAUSHAAR AND NIRSCHL (4) proposed that the pathology is angio-fibroblastic hyperplasia of CEO, especially of the tendon of extensor carpi radialis brevis (ECRB), in line of the overuse tendinopathy. While direct comparative studies have not been performed, the histology in upper limb tendinopathy does not appear to be dissimilar from that of lower limb tendinopathy. (5) Operative management of tennis elbow still remains the centre of debate. Since 1922, 14 main surgical treatment modalities, with some 300 modifications had been discussed.

II. Materials And Methods

The study was done at NRS medical college and hospital from 1st February 2017 to 30th September 2018. Patients were studied prospectively and evaluated clinically (mainly) and radio graphically (optionally) at follow-up. Total number of patients were 15, aged between 25-55 (avg. 38), suffering from pain in the lateral epicondyle, among them one of the patient was suffering from mental disorder. All patients had severe lateral epicondyle pain, with severe restriction of work and daily activities.

Pre-operative and post-operative assessment of clinical outcome was done using DASH score, VAS score, PRTEE score and PETTRONE'S and NIRSCHL Grading. Follow up was done at 2, 4, 6 and 12 months.

III. Pre-Operative Assessment

Careful evaluation is of utmost importance for better outcome. All patients were assessed using clinical scoring tools: DASH score, VAS score, PRTEE score and USG and MRI scan (radiologically.)

IV. Surgical Technique

The surgery was carried out with the patient in supine position, under tourniquet control and brachial anaesthesia.

After sterile dressing and draping, a gently curved 5cm long incision centred over the lateral epicondyle was made. The deep fascia in line of the incision was incised and retracted. The extensor carpi radialis longus (ECRL) and the origin of digitorum communis (EDC) was identified, which partially obscures the origin of deeper the extensor carpi radialis brevis. The brevis portion of conjoint tendon at the mid-portion of lateral epicondyle towards the elbow joint was elevated. Since normal appearing Sharpey fibres were elevated, abnormal appearing tendon was exposed. The degenerated tissues were excised. A small area of lateral epicondylitis decorticated with a rongeur or osteotome, taking care not to enter the joint and damage the articular cartilage. The remaining normal tendon to the fascia or periosteum was sutured, or attached with non-absorbable suture through drill holes in the epicondyle. The ECRL and EDC interval was closed with absorbable sutures. The skin incision was closed with non-absorbable 2-0 ethilon suture.

V. Post Operative Rehabilitation

All patients received I.V. antibiotics for at least 48 hours. Dressing was changed on 3rd post-operative day. Long arm POP back slab applied for 2 weeks with active finger movement. The stiches were removed on 14th post-operative day. Wrist and elbow ROM exercise started after stich removal. Daily light works were allowed then. Return to work was allowed after 4th post-operative week.

VI. Result

Overall 13 patients reported improvement of symptoms post-operatively. We had obtained mean total PRTEE score, mean VAS score and mean DASH score during their final visit. No major complications occurred during and after surgery. All patients returned to work within an average time period of 4.93 weeks.

VII. Discussion

We have tried to analyse the short term outcome of tennis elbow by open Modified Nirschl technique in perspective of clinical (mainly) and radiological (optionally) as required.

We have included all patients with tennis elbow satisfying the inclusion criteria and started our study after clearance by the ethical committee. A total of 15 patients were finally evaluated for the results. All the patients reported satisfying results. we have achieved excellent results in 86.67% cases in terms of clinical mainly and radiological optionally at mean follow up of 9.53 months.

All patients returned to work by mean of 4.93 weeks. A total of 13 patients obtained excellent results with respect to pain, and one case good and one case fair result with Nirschl and Pettrone grading.

It is safe, reproducible and effective procedure.

The literature overall indicates results equal to or better than other procedure of open technique with low surgical risk.

However, these are selected in small series in our study, poorly controlled and with potential bias, and well-designed studies are needed to evaluate long and short term function.

In future to improve the quality of the study, we have the scope of inclusion of more cases into it and with various comparison groups regarding functional and clinical and radiological outcome.

References

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