

Impact of Spencer's Technique with a Combination of TECAR Therapy in Rehabilitation for Post-operative 6-Week Rotator Cuff Repair (2-4 cm Tear) in Amateur Athletes

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ABSTRACT

Introduction: Conventional physiotherapy may be insufficient to restore shoulder Range of Motion (ROM), pain, and function following 2-4 cm rotator cuff repair. Spencer's technique and Transfer of Energy Capacitive and Resistive (TECAR) therapy have individually demonstrated efficacy in shoulder rehabilitation, yet their combined post-operative use remains unexplored.

Aim: To evaluate the combined effect of Spencer's technique and TECAR therapy, along with conventional physiotherapy, on shoulder ROM, pain, and functional disability in amateur athletes following rotator cuff repair.

Materials and Methods: A parallel-group Randomised Controlled Trial (RCT) (CONSORT 2010) was conducted at the Sports Injury Centre, Safdarjung Hospital, New Delhi. Forty-two amateur athletes (2-4 cm full-thickness tear, 6 weeks post-operative) were randomised to Group 1 (conventional physiotherapy+Spencer's Technique+TECAR; n=21), in which a phased TECAR protocol (capacitive, combined capacitive-resistive, and resistive dynamic modes) was delivered. Group 2 (conventional physiotherapy alone; n=21) was given for 6 weeks (18 sessions). Shoulder ROM

(inclinometer), pain {Visual Analogue Scale (VAS)}, and disability {Shoulder Pain and Disability Index (SPADI)} were assessed at baseline and post-intervention and analysed using statistical tools, the Wilcoxon Signed-Rank and Mann-Whitney U tests ($p<0.05$)

Results: Group 1 demonstrated significant improvements across all outcomes ($p<0.001$): with improvement in flexion range by $\sim 133^\circ$, abduction range by $\sim 139^\circ$, external rotation range by $\sim 50^\circ$, VAS 5.43, and SPADI reduced by $\sim 61\%$. Group 2 showed no significant change ($p>0.05$), with SPADI marginally worsening. On intergroup analysis, statistically significant differences were observed ($p<0.001$).

Conclusion: Spencer's technique, combined with TECAR therapy as an adjunct to conventional physiotherapy, produced significant improvements in shoulder ROM, pain, and functional disability following rotator cuff repair, indicating clear superiority over conventional physiotherapy alone. These findings support integrating this combined approach into post-operative rehabilitation protocols for amateur athletes with rotator cuff repair.

Keywords: Post-operative rehabilitation, Rotator cuff repair, Shoulder ROM, Spencer's technique, TECAR therapy.

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