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RESEARCH ARTICLE

EFFECT OF PRP INJECTION IN CASES OF PARTIAL THICKNESS ROTATOR CUFF TEAR IN KING FAHD ARMED FORCES HOSPITAL: A RETROSPECTIVE STUDY

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Abstract

Objective: To evaluate the clinical outcomes of PRP (Platelet-Rich Plasma) injections in treating partial thickness rotator cuff tears at King Fahd Armed Forces Hospital.

Methods: This retrospective study reviewed patients treated with PRP injections for partial thickness rotator cuff tears between April 2021 and December 2023. Patient demographics, tear characteristics, treatment protocols, and follow-up data were analyzed. Clinical outcomes were assessed using the Visual Analog Scale (VAS) for pain and the American Shoulder and Elbow Surgeons (ASES) score.

Results:A total of 60 patients (35 males, 25 females; mean age 48.3 years) were included. The mean follow-up period was 12 months. VAS pain scores significantly decreased from a mean of 7.2 pre-treatment to 2.9 post-treatment. ASES scores improved from a mean of 55.4 pre-treatment to 85.7 post-treatment. No significant complications were reported.

Conclusion:PRP injections appear to be an effective treatment for partial thickness rotator cuff tears, resulting in significant pain reduction and functional improvement. Further randomized controlled trials are warranted to confirm these findings.

Introduction:-

Partial-thickness rotator cuff tears are a common cause of shoulder pain and dysfunction. Conservative treatments often include physical therapy, corticosteroid injections, and oral medications. However, these treatments may not always provide satisfactory relief or healing. Platelet-rich plasma (PRP) injections, which utilize the patient's own blood components to promote tissue repair, have emerged as a potential alternative.

This study aims to retrospectively evaluate the effectiveness of PRP injections in patients with partial thickness rotator cuff tears treated at King Fahd Armed Forces Hospital.

Materials and Methods:-

Study Design and Patient Selection

This retrospective study reviewed medical records of patients treated with PRP injections for partial thickness rotator cuff tears from April 2021 to December 2023 at King Fahd Armed Forces Hospital. Inclusion criteria were: (1) diagnosis of partial thickness rotator cuff tear confirmed by MRI, (2) treatment with PRP injection, and (3)

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minimum follow-up of 6 months. Exclusion criteria included complete rotator cuff tears, prior shoulder surgery, and other concurrent shoulder pathologies.

PRP Preparation and Injection Protocol
PRP was prepared using a standardized protocol involving centrifuging the patient's blood to concentrate platelets. The PRP was then injected into the site of the rotator cuff tear. Patients were advised to limit activities for the first 48 hours post-injection and follow a physical therapy regimen designed to enhance shoulder function.

Outcome Measures
Clinical outcomes were assessed using the Visual Analog Scale (VAS) for pain and the American Shoulder and Elbow Surgeons (ASES) score. These assessments were recorded pre-treatment and at follow-up intervals of 3-, 6-, and 12-months post-treatment.

Statistical Analysis
Data were analyzed using paired t-tests to compare pre-and post-treatment scores. A p-value of <0.05 was considered statistically significant.

Results and Discussion:-

Patient Demographics and Tear Characteristics
Sixty patients (35 males, 25 females; mean age 48.3 years) met the inclusion criteria. Most of the tears were classified as grade 2 based on the Ellman classification. The mean duration of symptoms before PRP treatment was 8.4 months.

Table 1:- Patient Demographics and Tear Characteristics.

Characteristics	Value
Number of patients	60
Gender (M/F)	35/25
Mean age (years)	48.3 +- 9.2
The mean duration of symptoms	8.4 months
Tear grade (Ellman grade 2)	60%

Clinical Outcomes
VAS pain scores significantly reduced from a mean of 7.2 pre-treatment to 2.9 at 12 months post-treatment ($p < 0.001$). ASES scores improved significantly from a mean of 55.4 pre-treatment to 85.7 post-treatment ($p < 0.001$).

Table 2:- VAS Pain Scores Pre- and Post-Treatment.

Time Point	Mean VAS Score ± SD	p-value
Pre-treatment	7.2 ± 1.1	-
3 months	4.8 ± 1.3	<0.001
6 months	3.5 ± 1.2	<0.001
12 months	2.9 ± 1.1	<0.001

Table 3:- ASES Scores Pre- and Post-Treatment.

Time Point	Mean ASES Score ± SD	p-value
Pre-treatment	55.4 ± 12.3	-
3 months	70.2 ± 11.4	<0.001
6 months	80.1 ± 10.8	<0.001
12 months	85.7 ± 9.7	<0.001

Complications
No significant complications, such as infections or adverse reactions, were reported. Minor transient pain at the injection site was noted in 10% of patients.

Discussion:-

The results of this study suggest that PRP injections can significantly reduce pain and improve shoulder function in patients with partial-thickness rotator cuff tears. The mechanism of action is believed to be the release of growth factors from the platelets, which promote tissue healing and reduce inflammation.

Previous studies have shown mixed results regarding the efficacy of PRP for rotator cuff tears, with some suggesting benefits while others report no significant difference compared to placebo. The favorable outcomes in our cohort may be attributed to the specific PRP preparation and injection techniques used, as well as the comprehensive follow-up care, including physical therapy.

Limitations

This study has several limitations, including its retrospective design, the lack of a control group, and the variability in PRP preparation protocols. The follow-up period was also limited to 12 months, and longer-term outcomes were not assessed.

Conclusion:-

PRP injections appear to be a promising treatment for partial thickness rotator cuff tears, offering significant pain relief and functional improvement. Further randomized controlled trials with standardized PRP protocols are needed to validate these findings and establish optimal treatment guidelines.

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Conflict of Interest

The authors declare no conflict of interest.

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