The Effect of Platelet Enriched Plasma on Clinical Outcomes in Patients with Femoroacetabular Impingement Following Arthroscopic Labral Repair and Femoral Neck Osteoplasty

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## Financial Disclosures:

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Femoroacetabular impingement (FAI) is a recently proposed pathomechanical process that has been implicated in the development of hip osteoarthritis. Mid-range and long term studies on arthroscopic treatment of FAI have shown consistent, sustained benefit over time.

Source: http://orthoinfo.aaos.org
Biological agents have been used to augment soft tissue repair and bone healing for a variety of body areas. However, we are not aware of any studies that have examined the effect of biologic applications on clinical outcomes in patients with FAI.
Background - PRP

Platelet enriched plasma (PRP) is gaining widespread popularity within the orthopaedic community because of its multimodal effect on the healing properties of musculoskeletal tissues. In addition to improving the overall healing environment, PRP has been shown to display antibacterial and analgesic properties, as well as promote coagulation and hemostasis.

Source: http://www.orthohealing.com
Purpose

- The primary aim of this study was to evaluate the influence of PRP on clinical outcomes in patients with FAI following arthroscopic labral repair and femoral neck osteoplasty.

- No studies to date have attempted to improve outcomes in this area of focus by using a biologic agent.

- We hypothesized that patients treated with PRP would display less postoperative ecchymosis and swelling, and would show greater improvement earlier in their postoperative course than a control population.
Methods

- Patients were randomized at the time of surgery to receive either an intra-articular injection of 5 cc of PRP prepared with the Accelerate Concentrating System, (Exactech Biologics; Gainsville, FL) or an equal volume of 0.9% normal saline.
- All patients underwent arthroscopic labral repair and osteoplasty of the femoral neck and received the injection at the conclusion of the procedure.
- One week following surgery, patients were seen in follow-up where thigh circumference (measured 10 cm distal to the tip of the greater trochanter) and the presence of ecchymosis of the thigh were recorded.
- Clinical outcome scores were collected prior to surgery and at 1 month, 3 months, 6 months, and a minimum of 12 months post-operatively.
Results

• Thirty-five patients were enrolled into the current study, 20 patients received a PRP injection and 15 received a saline injection.

• There was no difference in any of the clinical outcome measures at any time point between the two groups.

• Thigh circumference was compared pre-operatively and 1 week post-operatively, there was no significant difference between the two groups.

• Ecchymosis was compared between the two groups at 1 week post-operatively. 4 of the 20 patients in the PRP group and 10 of the 15 in the placebo group had bruising on the lateral thigh. This was compared with a Chi Square test and found to be statistically significant with a p value of 0.005.
Results

Hip Outcome Score

- PRP ADL
- Placebo ADL
- PRP Sports
- Placebo Sports

Graph showing the Hip Outcome Score over time (Pre-Op, 1 month, 3 months, 6 months, 12 months) for different groups.
Results

Modified Harris Hip Score

Non-Arthritic Hip Score
Conclusions

A decrease in ecchymosis was observed on the lateral thigh in the patients receiving a PRP injection at the conclusion of hip arthroscopy.

An intra-articular injection of PRP after labral repair did not improve the clinical outcome up to one year post-operatively in patients undergoing arthroscopic labral repair and osteoplasty of the femoral neck.

Longer follow-up and post-operative MRI studies are needed to further evaluate the clinical outcomes after intra-articular injections after hip arthroscopy to study the effects of PRP on labral healing.
References:


