INTRODUCTION

• Autologous platelet-rich plasma (PRP), has seen increasingly widespread use across medical specialties: chronic neuropathic wounds, maxillofacial bone defects, cosmetic, spinal, and reconstructive surgery.
• Via plasmapheresis, plasma in PRP is concentrated to 300% of normal blood level.
• PRP activated to a gel-like substance consisting of a fibrin matrix scaffold with platelet releasate contents and growth factors.
• Degranulating the platelets by proteins such as thrombin initiates the release of different growth factors such as platelet-derived growth factor-AB, transforming growth factor beta-1, and vascular endothelial growth factor. These growth factors are thought to be responsible for increased rate of epithelialization and pain reduction at wound sites.

OBJECTIVE

• This case series investigates the effectiveness of PRP in mitigating postoperative donor site pain following split thickness skin graft (STSG) harvest.

MATERIALS AND METHODS

• We abstracted records from all patients known having undergone multiple STSG's.
• Inclusion criteria: either sex, aged 18-80, with one STSG donor site treated with PRP, and one without while having completed visual analogue pain assessments at one day post op and one week post op.
• Treatment was highly standardized. - Donor sites were dressed with Xeroform (Medline Industries- Mundelein, IL) and Tegaderm (JM- Two Harbors, MN).
• Interventional donor sites were treated with intraoperative autologous PRP and dressed with Duoderm (Convatec- Skillman, NJ), Sorbion (Sorbion GmbH & Co. KG - Senden, Germany) and Tegaderm in ascending order.
• In both therapies, initial dressing changes occurred on postoperative day (POD) 7, and donor site pain was measured using a Likert visual pain scale at POD 1.
• Paired T-tests compared the size and thickness of harvested skin graft and patient pain level (Likert pain scale).

RESULTS

• Based on these criteria, 5 patients, aged 48.4 +/- 17.6 and 80% male were included in analysis. There was mean time of 4.4 +/- 5.1 years between operations.
• For each patient, STSG thickness and surface area were comparable between control (P > 0.05) and PRP intervention.
• Donor site pain was reduced from an average of 7.2 +/- 2.6 to 3 +/- 1.7.
• The average reduction in pain with PRP is 4.2 with a standard error of 1.7 (p = 0.0098).
• STSG thickness and surface area were comparable between control and PRP interventions (p > 0.05 for all). No adverse reaction, infection or additional complication was observed in those receiving topical PRP.

CONCLUSIONS

• These provisional data suggest that PRP may provide some degree of STSG donor site pain relief.
• By reducing donor site pain, PRP may also have the potential to reduce analgesic usage post-operatively and shorten hospital stay.
• We look forward to further works that might confirm or refute these initial findings.

REFERENCES


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Platelet Rich Plasma Reduces Pain in Split Thickness Skin Graft Donor Sites

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