

## Platelet Rich Plasma Application to Prevent Wound Complications

**Bariş Sevinç**

Department of General Surgery, Medical Park Uşak Hospital, Uşak, Turkey

**Keywords:** Wound complications; Medical treatment; Plasma**Corresponding author:** Barış Sevinç**Received:** October 27, 2016; **Accepted:** November 01, 2016; **Published:** November 07, 2016

✉ drbarissevinc@gmail.com

Department of General Surgery, Medical Park Uşak Hospital, Uşak, Turkey.

**Tel:** 00905054880511

Recently, there are numerous medical treatment options for disorders we used to operate before. Platelet rich plasma (PRP) is nowadays routinely used in medicine especially in orthopaedics and for cosmetic purposes. PRP with high rates of platelets and growth factors included in accelerates wound healing in numerous tissues [1,2]. It contains platelet derived growth factor, epithelial growth factor, fibroblast growth factor, transforming growth factors. It accelerates wound healing. An advantage of PRP is, it is prepared from patient's own blood and there are no important side effects caused by PRP. It is not allergic or irritant for the body.

In treatment of incisional hernias, synthetic mesh used may cause complications like seroma formation. Here, the author want to present a case operated for a huge incisional hernia. After placement of 30 cm × 30 cm polypropylene mesh anteriorly, patient had seroma formation. Seroma was drained and 6 months after the surgery patient had a huge subcutaneous pouch over the mesh. There was serous drainage at the incision scar. Bacterial cultures revealed no infection. PRP applied to the pouch. At the first application, only one side of the pouch was filled with diluted PRP. After one week, it is observed that PRP applied side of the pouch was closed. Then, PRP applied to the other side of the pouch. One month after the first application, the whole pouch was closed and there was no fistula opening at the skin. Six months after the application the patient has no fistula.

PRP has increasing effect on collagen synthesis [3,4]. At this case, it accelerated fibrosis and mesh adhesion to the subcutaneous fatty tissue. In management of such difficult cases PRP application can be very helpful. Even in a previous study, our team showed nonsurgical treatment of pilonidal disease by using PRP [5]. PRP accelerates wound healing and it can even close a sinus formation by activating tissue healing pathways.

**Citation:** Sevinç B. Platelet Rich Plasma Application to Prevent Wound Complications. J Univer Surg. 2016, 4:4.

Seroma formation and followed wound infection is also an important problem flap operations especially in breast and pilonidal sinus surgery. There are numerous flap methods described for treatment of pilonidal disease. Wound infection and seroma formation are common problems for all of those flap procedures. Recent literature showed us, in pilonidal sinus surgery tension free procedures have better results. However, these tension free procedures necessitate the subcutaneous tissue to be released and facilitate seroma formation. Preoperative PRP use can facilitate flap adhesion and therefore, prevent seroma formation.

In some studies [6,7], effects of PRP in prevention of wound complications after surgical procedures has shown. As PRP can reduce wound infection rate, it can be used to prevent wound complications. Especially in contaminated cases routine use can be suggested. However, there is a huge gap in literature about the routine use of PRP in abdominal surgery. An infection preventive, autologous body product can be very helpful in complicated cases. We need more studies about the role of PRP in surgical procedures.

To conclude we need experimental studies with PRP to show its beneficial effects on surgical wounds. Further studies would highlight this issue.

## References

- 1 Foster TE, Puskas BL, Mandelbaum BR (2009) Platelet-rich plasma: from basic science to clinical applications. *Am J Sports Med* 37: 2259-2272.
- 2 Nguyen RT, Borg-Stein J, McInnis K (2011) Applications of platelet-rich plasma in musculoskeletal and sports medicine: an evidence-based approach. *PM R* 3: 226-250.
- 3 Yılmaz B, Keskinburun S (2013) Platelet-Rich Plasma Applications. *Turk J Phys Med Rehab* 59: 338-344.
- 4 Khan KM, Cook JL, Bonar F, Harcourt P, Astrom M (1999) Histopathology of common tendinopathies. Update and implications for clinical management. *Sports Med* 27: 393-408.
- 5 Karahan Ö, Sevinç B, Şimşek G, Demirgöl R (2016) Minimally invasive treatment of pilonidal sinus disease using platelet-rich plasma. *Transl Surg* 1: 14.
- 6 Patel AN, Selzman CH, Kumpati GS, McKellar SH, Bull DA (2016) Evaluation of autologous platelet rich plasma for cardiac surgery: outcome analysis of 2000 patients. *J Cardiothorac Surg* 11: 62.
- 7 Kirmani BH, Jones SG, Datta S, McLaughlin EK, Hoschitzky AJ (2016) A meta-analysis of platelet gel for prevention of sternal wound infections following cardiac surgery. *Blood Transfus* 28: 1-9.