

The efficacy of autologous platelet gel in pain control and blood loss in total knee arthroplasty

An analysis of the haemoglobin, narcotic requirement and range of motion

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Abstract Biological materials used to assist in haemostasis following total knee arthroplasty have been the subject of much recent research. Autologous platelet gel is a substance that is derived from platelet-rich plasma extracted from the patient's blood and centrifuged perioperatively, and is applied to exposed tissues, synovium and the lining of the wound at closure. Concentrating and applying these factors directly to the wound at the end of a total knee arthroplasty procedure may lead to more complete haemostasis, a reduction in perioperative blood loss, accelerated tissue repair and decreased postoperative pain. In this study, 98 unilateral total knee arthroplasties were evaluated retrospectively, 61 of which involved the intaroperative use of platelet gel, and 37 of which served as control subjects. Outcomes analysed were postoperative haemoglobin changes, intravenous and oral narcotic requirements, range of motion on discharge and total days in hospital. Patients receiving platelet gel during surgery had less postoperative blood loss as measured by differences in the

preoperative and postoperative haemoglobin on day 3 (2.7 vs. 3.2 g/dl; $P=0.026$). The narcotic requirement was less in the platelet gel group for both intravenous (17.0 vs. 36.3 mg/day; $P=0.024$) and oral (1.84 vs. 2.75 tabs/day; $P=0.063$) medication. This group also achieved a higher range of motion prior to discharge (78.2 vs. 71.9; $P=0.052$) and were discharged an average of 1 day earlier than their control counterparts. Though further prospective trials are necessary, this study indicates that the application of autologous platelet gel may lead to improved haemostasis, better pain control and a shortened hospital stay.

Résumé Le gel de plaquettes autologues est une substance dérivée des plaquettes plasmatiques extraites du sang du patient et centrifugées dans la période péri-opératoire, destiné à être appliquée sur les tissus exposés, la synoviale, et la ligne d'incision à la fermeture. Le but est d'avoir une meilleure hémostasie, une réduction de la perte sanguine, une accélération de la réparation tissulaire et une diminu-