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Total Hip Replacement without Blood Transfusion: 53-Year-Old Male with Cardiac Arrhythmia

Timothy Penn, MD - December 3, 2015

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Total Hip Replacement without Blood Transfusion: 53-Year-Old Male with Cardiac Arrhythmia

Timothy Penn, MD

Abstract

Perioperative blood loss is a significant concern for patients undergoing total joint arthroplasty. A growing body of evidence has shown tranexamic acid (TXA) to be effective in decreasing perioperative blood loss and transfusion requirements in both primary and revision hip and knee arthroplasty. Dr. Penn reports using TXA in successful hip replacement in a paitent with cardiac arrhythmia.

Case Report

A 53-year-old male Jehovah's Witness presented with severe osteoarthritis of the left hip. He had long-term non-operative management including exercise, NSAIDs, and intra-articular injections. Ultimately, these didn't provide lasting relief and he opted for hip replacement. Medical issues included cardiac arrhythmia, chronic back issues, hypertension and elevated cholesterol. His pre-operative Hgb was 16.7. In December 2015 he underwent a left total hip replacement through an anterior approach. Peri-operative management included normothermia, closed loop cell saver, and 1 gram tranexamic acid administered IV one hour pre-incision, with intraoperative administration as a direct application into the surgical wound right before closure. Intra-op blood loss was measured to be 500 ml, with 400 ml returned through the closed loop cell saver. Post-operatively his Hgb was 15.4 in the recovery room, dropping to 14.1, noted a week later when he was seen in the ER for opiate induced constipation. 2 weeks post-operatively, he was walking with a cane. At 2 months his issues were all back related, and the left hip was essentially pain free. He went on to have back surgery 5 months after his hip surgery. He was seen for routine x-ray follow-up at 1 and 2 years post-surgery and continues to do well. Next x-rays are scheduled for the 5-year point from his surgery.

Dr. Penn's Notes

The TXA comes as 1 gram in a 10 mL vial. The pre-operative dose is given within the hour before incision, 1 gram IV over 10 minutes or more. Sometimes it is given full strength, but some of the nurses will dilute it with 10 mL of normal saline, doubling the volume. The reason it is given slowly is because it can cause nausea if given too fast. The exact timing of the pre-operative administration isn't critical.

The topical is undiluted 1 gram placed into the wound at closure. An additional gram around 3 hours post-OR was tried but seemed to cause a leukocytosis with some consistency. The third dose didn't seem to make a difference with respect to the postoperative Hgb. No special consideration is given for presence of stents or anything else, as this material hasn't been found to be thrombogenic. There is evidence that oral preoperative dosing is as effective as IV, but since our patients are NPO, we opt for the IV.

About the Author

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