Enhanced recovery after surgery for a patient undergoing nephrectomy

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INTRODUCTION: Enhanced Recovery After Surgery (ERAS) pathways are multidisciplinary, multimodal approaches to perioperative care that aim to improve patient outcomes and decrease length of inpatient hospital stay after a procedure. ERAS pathways were initially pioneered in the setting of colorectal surgery and the success of pathway implementation is well-supported in the literature. Efforts are ongoing to expand the ERAS pathway to other surgical subspecialties. The body of research exploring the utility and efficacy of ERAS for complex urological procedures is limited. Here we present a case of a patient who underwent a radical nephrectomy via the Enhanced Recovery After Surgery (ERAS) pathway.

CASE REPORT: A 41-year-old female with an enlarging left-sided 12cm mass suspicious for renal cell carcinoma presenting for scheduled open left radical nephrectomy. Patient had an additional past medical history of obesity and an incomplete RBBB, with possible obstructive sleep apnea. In line with the hospital’s enhanced recovery guidelines, the patient was provided a booklet for education on the ERAS process and kidney surgery. The patient began a clear diet the day prior to admission. In the pre-operative care unit (POCU), the patient was provided a set of premedication based on her weight, GFR, and risk factors. Heparin for VTE prophylaxis, warm IV plasmalyte, and a T8-T9 paravertebral block with 30mL 0.5% Ropivacaine were also administered. Intraoperatively, the patient received a combination of non-opioid analgesics, sedatives, and antiemetics with the goal of minimizing PONV and post-operative ileus. Ventilation, glycemic control, and fluid therapy were also targeted based on ERAS guidelines. No opioids were provided intraoperatively. Towards the end of the case, a TAP catheter was placed by the surgeon for post-operative pain control.

Postoperatively, the patient received a continuous 12mL/hr infusion of 0.2% Ropivacaine for 24 hours as well as a multimodal analgesic regimen. Celebrex was not provided because her post-operative eGFR was 50. As radical nephrectomies have a lesser risk of bleeding, the patient was encouraged to ambulate independently postoperative day (POD) #0. The patient’s Foley was removed and she was advanced from clears to normal diet on postoperative day (POD) #1. The patient was deemed suitable for discharge on POD #2. At the time of discharge, her pain was well controlled on an oral analgesic regimen of Tylenol and Tramadol.

DISCUSSION: Inpatient length of stay (LOS) post-procedure was 2.27 days for our nephrectomy patient. During the year 2016, 113 patients undergoing a nephrectomy at Albany Medical Center had a median LOS of 3.51 days. While we only present a single patient, additional cases at our institution undergoing nephrectomy through the ERAS pathway have shown similarly promising numbers. Our experience from implementation of an enhanced recovery pathway for colorectal surgery demonstrated that ERAS was an effective strategy to reduce LOS and total hospital costs.
Future investigation in ERAS for nephrectomy hope to duplicate these results and provide further evidence for expansion of ERAS to other surgical subspecialties.