Effect of surgical technique on pain and narcotic use after robot-assisted and open distal pancreatectomy

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BACKGROUND

• Studies demonstrate equivalent outcomes after robot-assisted distal pancreatectomy (RADP) compared to open (ODP)
• Data evaluating postoperative quality of life after RADP are limited to surrogate markers such as length of stay
• We hypothesized patients undergoing RADP experience less postoperative treatment burden relative to ODP as measured by pain scores and narcotic use

METHODS

• Retrospective (July 2009-March 2014) single-institution analysis of verbal 0-10 numeric pain rating scale (NPS) and total morphine equivalents per 24 hours after distal pancreatectomy through postoperative day (POD) #5
• Laparoscopic distal pancreatectomy was excluded due to limited volume.
• The ODP cohort comprised two groups due to standard of care epidural analgesia
  • ODP with epidural (analyzed as intent to treat)
  • ODP without epidural
• The RADP cohort received parenteral narcotics alone.
• Marginal regression analysis analyzed the effect of epidural analgesia on daily narcotic use.

RESULTS

• Of 117 patients, 84 had complete NPS and narcotic data
• 50 patients underwent ODP with epidural; 11 (18%) underwent ODP without epidural; 23 (27%) underwent RADP
• NPS resembled statistical noise and were uninformative (data not shown)
• A mixed effects linear model for repeated measures was developed, validated, and applied to daily mean pain scores and narcotic use to evaluate trends over time

CONCLUSIONS

• Over the observation window, patients undergoing ODP with epidural had the least narcotic use.
• Patients undergoing RADP require fewer narcotics than ODP without epidural analgesia. Patients undergoing RADP had peaked narcotic use on POD 1-2 and demonstrated a rapid decrease in narcotic use by POD 5 compared to ODP without epidural
• Additional attention to pain management is required after RADP. Epidural analgesia has a narcotic sparing effect but is not ideal for minimal-access surgery. Patients undergoing RADP may benefit from regional analgesia in the immediate postoperative anesthesia to optimize their recovery.