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Epidural Analgesia in Open Colorectal Surgery: A Nationwide Analysis of Trends and Outcomes

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Authors

Halabi, WJ
Jafari, MD
Nguyen, VQ
et al.

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SCIP-approved antibiotics. Continued evaluation of SCIP performance measures in relationship to patient outcomes is integral to sustained quality improvement.

37.2. Urinary Tract Infection: Tip of a Postoperative Complication Iceberg? N. A. Weisensel, T. J. Paul Olson, V. Rajamanickam, G. D. Kennedy; University of Wisconsin School of Medicine and Public Health - Department of Surgery, Madison, WI

Introduction: Urinary tract infection (UTI) is a frequent hospital acquired infection often related to indwelling catheter usage in the perioperative period. UTIs are commonly considered a relatively minor postoperative complication because treatment is routine and generally straightforward. We hypothesized that UTI is a marker for worse postoperative recovery and is associated with multiple subsequent postoperative complications. **Methods:** Data from patients undergoing inpatient, elective general surgery operations were obtained from the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) database from the years 2005 through 2010. Patients with ASA class 4 or 5, emergency operations, preoperative coma, paraplegia, quadriplegia, pre-operative wound infection, or pre-operative sepsis were excluded. For comparisons, patients were divided into groups of no postoperative complications, UTI only, UTI plus other complications, and non-UTI complications. Within the group UTI plus other complications, we further compared patients with UTI as their first complication versus those with UTI as an additional complication after other postoperative complications. Descriptive variables included demographic, operative characteristics, length of stay, and mortality. Outcome variables included overall rate of UTI and other non-UTI complications. Data was analyzed using Chi-squared univariate statistical analysis. **Results:** of the 406,634 patients that were included, 8,036 (2.0%) patients had UTIs, and 43,885 (11%) had non-UTI complications. Patients with UTI were statistically more likely to be older and female than those patients without UTI. Of those that had UTIs, 4,287 (53%) had UTI alone, and 3,749 (47%) had UTI with an additional complication. Two thousand three hundred twenty two (29%) patients had UTI as the first complication followed by additional complications; of these, 18% developed sepsis as a second complication and 9% developed superficial infection as a second complication. Patients with UTI plus other complications were significantly more likely to have longer operative time (224 versus 204 minutes) and longer length of stay (17 versus 12 days) than patients with non-UTI complications. However, patients with UTI plus other complications had significantly lower mortality compared

to those with non-UTI complications (0.04% versus 0.48%). **Conclusions:** Nearly one-third of patients with UTIs develop additional complications, and postoperative UTI in conjunction with other complications is associated with increased operative time and length of stay compared to non-UTI complications. Although not associated with increased mortality, this study suggests that UTI as a first postoperative complication should be considered a risk for worse postoperative recovery and morbidity.

37.3. Epidural Analgesia in Open Colorectal Surgery: A Nationwide Analysis of Trends and Outcomes. W. J. Halabi,¹ M. D. Jafari,¹ V. Q. Nguyen,² J. C. Carmichael,¹ S. D. Mills,¹ M. J. Stamos,¹ A. Pigazzi¹; ¹University of California - Irvine Department of Surgery, Orange; ²University of California - Irvine Department of Statistics, Irvine

Introduction: While epidural analgesia (EA) has previously demonstrated superiority over conventional analgesia (CA) in controlling pain in patients undergoing colorectal resection, controversy still exists regarding cost effectiveness, length of hospital stay, incidence of postoperative complications and mortality. Previous data, including meta-analyses were limited by small sizes. **Methods:** Using the Nationwide Inpatient Sample from 2002 to 2010 a retrospective analysis of open colorectal surgeries performed for benign and malignant conditions was conducted. Patient demographics, associated comorbidities and hospital factors were recorded. multivariate logistic and linear regression analysis were used to compare outcomes between EA and CA. **Results:** A total of 888,135 patients underwent colorectal resections, and EA was used in 39,345 cases (4.4%). The use of Epidurals remained relatively low and did not show any trend. Mean patient age was 65 and comorbidity scores were similar in the EA and CA groups. Epidurals were more likely to be used in large, urban and teaching hospitals and for rectal cancer cases. In-hospital mortality was 0.84% in the EA group and 1.23% in the CA group. On multivariate analysis EA was associated with a slightly longer length of stay for colonic cases by 0.16 day (95%CI: 0.00, 0.32) and a higher incidence of ileus OR=1.17(95% CI; 1.08, 1.28). These differences were not observed in rectal cases. In rectal and colonic cases the use of epidurals did not impact rates of pulmonary, anastomotic or wound complications. Also, no association was found between EA and urinary tract infection or urinary retention. EA was associated with lower hospital charges for colonic cases, mean difference= -4614 US\$ (95% CI: -5813, -3414) and rectal cases= -4613 US\$ (95% CI; -6452, -2774). There was no difference in mortality. **Conclusions:** This is the largest

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Adjusted Outcomes of Epidural vs. Conventional Analgesia in the Colonic and Rectal Subgroups. Conventional Analgesia used as Reference

	Colonic procedures		Rectal procedures	
	MD/OR (95% CI)	p-value	MD/OR (95% CI)	p-value
Mortality	0.69 (0.47, 1.01)	0.83	1.40 (0.79, 2.46)	1
Total charge	-4450.02 (-5574.63, -3325.41)	<0.01	-4339.64 (-6075.22, -2604.06)	<0.01
Length of stay	0.16 (0.00, 0.32)	0.83	0.12 (-0.14, 0.39)	1
Respiratory failure	0.85 (0.69, 1.04)	1	1.22 (0.89, 1.68)	1
Pneumonia	1.00 (0.80, 1.24)	1	0.93 (0.63, 1.37)	1
Ileus/bowel obstruction	1.17 (1.08, 1.28)	<0.01	1.08 (0.94, 1.25)	1
Anastomotic complications	0.95 (0.86, 1.06)	1	0.97 (0.80, 1.18)	1
Urinary tract infection	1.09 (0.92, 1.30)	1	0.87 (0.64, 1.18)	1
Urinary retention	1.03 (0.81, 1.32)	1	0.79 (0.57, 1.11)	1
Wound complications	1.06 (0.90, 1.24)	1	0.93 (0.72, 1.20)	1

Mean Difference (95% CI) for total charge and length of stay and Odds Ratios (95% CI) for the remaining outcomes.

P-values are adjusted for multiple comparisons.

study to date investigating the outcomes of epidural analgesia in open colorectal resections. It contradicts most of the previously published data by showing that epidural analgesia is associated with lower hospital charges in colonic and rectal resections. Other outcomes in rectal surgery were not affected while the use of epidurals in colonic surgery is associated with a higher risk of ileus and slightly increased length of stay.

37.4. Leveraging the Point of Preoperative Assessment to Ensure Delivery of Appropriate Surgical Care. O. Nelson,¹ T. D. Quinn,¹ A. F. Arriaga,^{1,2,3,4} D. L. Hepner,^{1,3} D. J. Correll,¹ S. R. Finlayson,^{2,4} M. J. Zinner,^{2,4} A. Gawande,^{2,3,4} A. M. Bader,^{1,2,3}, ¹Brigham and Women’s Hospital, Department of Anesthesiology, Perioperative and Pain Medicine, Boston, MA; ²Center For Surgery and Public Health, Brigham and Women’s Hospital, Boston, MA; ³Harvard School of Public Health, Department of Health Policy and Management, Boston, MA; ⁴Brigham and Women’s Hospital, Department of Surgery, Boston, MA

Introduction: Surgical care is deemed appropriate when the expected benefits outweigh the risks with sufficient margin, and there is concordance between patient preferences and surgical goals. All information necessary for high quality shared surgical decision making may not be available at the point of surgical evaluation for a variety of reasons. Therefore preoperative assessment may serve as a safety net to detect cases with either unresolved clinical issues or deficits in decision making leading to lack of concordance. The reasons for case cancellations in these patients are poorly understood. This study looks in-depth at the patterns leading to cancellation at the point of preoperative assessment. We also examined the role of risk modification and benefit assessment on the decision for surgical treatment by 60 days. **Methods:** All consecutive patients evaluated by the preoperative clinic of a tertiary care hospital over a 10 month period with subsequent case cancellation were identified and reviewed. In-depth analysis performed by physician reviewers consisted of patient demographics, procedure type, management of the initial diagnosis after cancellation, and reasons for cancellation. **Results:** Over a 10 month period 18,498 patients were evaluated by the preoperative clinic, of which 1% (163/18,498) were cancelled. Of patients with case cancellations, the average age was 62 years, the mean BMI was 30 and 8% lived in a skilled nursing or rehabilitation facility. Over three-quarters of patients were ASA Class 3 or higher. Nearly 70% of cancellations were due to the need for further

evaluation or management of the patient’s medical risk factors. Nine percent were due to the patient’s decision to cancel the scheduled case after a complete discussion of the expected risks and benefits, and 4% were due to compliance or social issues making the procedure potentially inappropriate. Follow up at 60 days from the initially scheduled procedure showed that 53% of patients had not undergone surgical treatment, while 47% of patients had completed a procedure to treat the initial operative indication. Over a quarter of patients whose cases were cancelled in the preoperative clinic actively chose a non-operative strategy, including 5% of patients who were managed with palliative/hospice care. **Conclusions:** of patients cancelled for their procedure after preoperative evaluation, at 60 days over half had not undergone surgical treatment because they were unlikely to sustain overall benefit and 47% had undergone an operation after risk mitigation. These findings underscore the value of interventions to improve risk/benefit assessment during the perioperative period to ensure delivery of appropriate surgical care.

37.5. Patient Involvement in the Decision Making Process Improves Satisfaction and Quality of Life in Postmastectomy Breast Reconstruction. A. A. Ashraf,¹ S. Colakoglu,² J. Nguyen,¹ A. Anastasopoulos,¹ A. Ibrahim,¹ J. Yeuh,¹ A. Tobias,¹ B. Lee,¹; ¹Beth Israel Deaconess Medical Center - Harvard Medical School, Boston, MA; ²Massachusetts General Hospital, Boston, MA

Introduction: The patient-physician relationship has evolved from the paternalistic, physician dominant model to the shared-decision making and consumer model. In the shared-decision model, a joint decision is made between the patient and physician after evidence based medicine is presented and patient preferences taken into account. In the consumer model, the physician role is to provide information in order for the patient to make a decision. The level of patient involvement in this decision making process can potentially influence patient satisfaction with surgical outcomes. Breast reconstruction remains elective and aims to restore the patient’s quality of life and aesthetic well-being. Multiple treatment options are available for breast reconstruction, including implant-based, autologous or a combination. The implications of the specific type of patient-physician relationship model on patient perceived outcomes in breast reconstruction remains unclear. In this study we evaluate the impact of various patient-physician models on breast reconstruction outcomes. **Methods:** Women who underwent either immediate or delayed breast reconstruction at an academic hospital from 1999 to 2007 were identified. Patients who failed to respond to the survey or had stage IV disease were excluded. Patients meeting inclusion criteria were mailed questionnaires at a minimum of 1 year post-operatively. Extensive chart review was performed. **Results:** There were 707 women eligible for our study with a 68% response rate. Patients were divided into one of three groups depending on level of active participation in selecting type of breast reconstruction: Consumer (N=307); Shared (N=140); Paternalistic (N=18). Sixty-six percent of the consumer group and 39% of the paternalistic group reported overall general satisfaction with their breast reconstructive experience (p=0.03). In further comparing the consumer and paternalistic groups, patients reported that they would have chosen the same reconstructive procedure again (81% vs 44%, respectively p=.0004). In addition, 86% of the consumer group and 50% of the paternalistic group felt they had received sufficient information about their breast reconstruction options to make an informed decision (p=0.00002). When the SF-12 quality of life scores were used to compare groups we found differences in the physical component score (p=0.033), but not the mental component score (p=0.424). **Conclusions:** Although several patient-physician relationship models exist, we found that the

Follow-Up After Cancellation at 60 Days From Original DOS [N(%)]

Risk/Benefit assessment	Specific management	60 day Follow up*
Lack of benefit precludes completion of procedure	Surgical team uncertain if patient will become appropriate for procedure	43 (28%)
	Non operative treatment	24 (16%)
81 (53%)	No treatment	7 (5%)
	Palliative/Hospice Care	7 (5%)
Risk optimization before procedure	Rescheduled and completed original procedure	67 (44%)
	Different surgical treatment	4 (3%)

*Total percentages add up to 101% due to rounding.