

This study’s objective was to determine whether perioperative invasive vascular catheter placement, independent of comorbid conditions, modified the risk of postoperative infection in lumbar spine surgery” Compton et al (2018).

Abstract:

STUDY DESIGN: This is a retrospective cohort study.

OBJECTIVE: This study’s objective was to determine whether perioperative invasive vascular catheter placement, independent of comorbid conditions, modified the risk of postoperative infection in lumbar spine surgery.

SUMMARY OF BACKGROUND DATA: Infection is a risk inherent to lumbar spine surgery, with overall postoperative infection rates of 0.86%-8.5%. Patients experiencing postoperative infection have higher rates of mortality, revision surgeries, pseudarthrosis, and worsening pain and disability.

METHODS: Data were collected for patients undergoing lumbar spine surgery between January 2007 and October 2015 with records in the nationwide Humana private insurance database. Patients receiving fusion, laminectomy, and discectomy were followed for 3 months from the date of surgery for surgical site infection (SSI), 6 months for subsequent incision and drainage (I&D), and 1 year for vertebral osteomyelitis (VO). Risk factors investigated included central venous catheter and arterial-line placement.

RESULTS: Analysis of 114,259 patient records showed an overall SSI rate of 3.2% within 1 month and 4.5% within 3 months, overall vertebral osteomyelitis rate of 0.82%-0.83% within 1 year, and overall I&D rate of 2.8% within 6 months. Patients receiving a first-time invasive vascular catheter on the day of surgery were more likely to experience SSI within 1 month , SSI within 3 months (RR, 2.4; 95% CI: 2.3-2.7), osteomyelitis within 1 year (RR, 4.2-4.3; 95% CI: 3.7-4.5), and undergo an I&D within 6 months (RR, 1.9; 95% CI: 1.8-2.0). These trends were consistent by procedure type and independent of the patient’s weighted comorbidity index score (Charlson Comorbidity Index).

CONCLUSIONS: Perioperative invasive vascular catheterization was significantly associated with an increased the risk of postoperative infections in lumbar spine surgery, independent

of a patient's concomitant comorbidities. Therefore, in patients with an indication for invasive catheterization, surgeons should consider risks and benefits of surgery carefully.

LEVEL OF EVIDENCE: Level III.

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Reference:

Compton, E., Heindel, P., Formanek, B., Schoell, K., Buser, Z. and Wang, J.C. (2018) Perioperative Invasive Vascular Catheterization Associated With Increased Risk of Postoperative Infection in Lumbar Spine Surgery: An Analysis of 114,259 Patient Records. *Clinical Spine Surgery*. November 26th. .

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