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QUESTION 7: What are the risk factors predisposing a patient to surgical site infections (SSI) after spine surgery?

RECOMMENDATION: Numerous risk factors for SSIs following spine surgery have been identified, including diabetes, obesity, prior SSI, smoking, longer operative times, posterior approach to spine and the number of levels fused.

LEVEL OF EVIDENCE: Moderate

DELEGATE VOTE: Agree: 100%, Disagree: 0%, Abstain: 0% (Unanimous, Strongest Consensus)

RATIONALE

The relatively low incidence of postoperative SSIs after spine surgery makes it challenging for studies to evaluate the risk factors for SSI in a prospective manner [1]. Based on our literature search, a number of retrospective studies and a single prospective study were identified. The findings of prior studies have also been summarized by multiple systematic reviews. Pull ter Gunne et al. performed a systematic review of 24 studies that identified risk factors for SSI after spine surgery [2]. All 24 studies were case-control and case series. There was a total of 73 potential factors evaluated, 34 of which were found to be significant in at least 1 study. There were 11 risk factors that were found to be significant in at least 2 studies. Among all risk factors, diabetes, obesity and prior SSI were the only three that were confirmed as risk factors by a multitude of studies.

Similarly, there was another systematic review which analyzed 36 observational studies for which 46 independent factors were studied [3]. Only six risk factors had been consistently proven to show an association with SSI after spine surgery, including diabetes, obesity, longer operative time, smoking, history of SSI and type of surgical procedure (i.e. tumor resection).

More recently, a prospective multicenter surveillance study was performed which enrolled 2,736 patients who underwent posterior thoracic and/or lumbar spine surgery [4]. Of these patients, 24 (0.9%) developed postoperative deep SSI. Preoperative steroid therapy,

spinal trauma, male gender and prolonged operating time (> three hours) were found to be independent risk factors for SSI after spine surgery. Several previous retrospective studies have not identified preoperative steroid use and male gender as risk factors for SSI after spine surgery [2,5,6].

An ongoing prospective study funded by Pfizer evaluating the potential role of vaccination against *Staphylococcus* is likely to provide valuable information regarding the most important risk factors for SSI after spine surgery.

REFERENCES

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QUESTION 8: Should all patients with psoas abscesses be screened for both spine and hip infections?

RECOMMENDATION: Cross-sectional imaging with computed tomography (CT) and magnetic resonance imaging (MRI) will identify the source of secondary psoas abscesses in the majority of cases. If no other source is identified, consider cross-sectional imaging with CT or MRI for both the hip and spine in the setting of psoas abscess.

LEVEL OF EVIDENCE: Limited

DELEGATE VOTE: Agree: 100%, Disagree: 0%, Abstain 0% (Unanimous, Strongest Consensus)

RATIONALE

The iliopsoas is formed by two distinct and separate muscles - the psoas major and iliacus muscles. Each muscle is covered by its respective fascia and is typically associated with different disease entities [1]. The psoas major arises from the transverse processes of the lumbar vertebrae, exiting the pelvis beneath the inguinal ligament where it joins the iliacus (forming the iliopsoas tendon) and

inserts on the lesser trochanter of the femur [2]. The iliacus muscle originates from the superior portion of the iliac fossa, superior lateral aspect of the sacrum and ventral sacroiliac and iliolumbar ligaments [2]. The medial portion of the iliacus muscle joins the psoas major tendon (forming the iliopsoas tendon) and inserts on the lesser trochanter. The lateral portion of the muscle inserts