QUESTION 7: Does the type of surgical drape (disposable vs. non-disposable) used affect the risk of subsequent surgical site infections/periprosthetic joint infections (SSIs/PJIs) in patients undergoing orthopaedic surgery?

RECOMMENDATION: Unknown. The data from non-orthopaedic procedures suggests that disposable drapes resist bacterial passage and reduce the risk of subsequent SSIs. Impermeable barriers should be used regardless of whether disposable or non-disposable drapes are used.

LEVEL OF EVIDENCE: Limited

DELEGATE VOTE: Agree: 90%, Disagree: 3%, Abstain: 7% (Super Majority, Strong Consensus)

RATIONAL

Surgical drapes act as a barrier to prevent the contamination of the surgical field during a procedure. They are used to isolate the prepared surgical field from the non-sterile, non-surgical area.Reusable drapes are made of a woven material and are laundered and sterilized between procedures. In contrast, disposable drapes are usually made of non-woven material and are disposed of after each operation. Various physical properties of drapes and surgical conditions can affect the bacterial permeability of drapes. For example, it is known that there is increased bacterial passage when drapes are made wet by normal saline or blood [1,2]. Disposable drapes have been shown to decrease rates of bacterial passage, even when made wet by normal saline. However, this decreased bacterial transmission does not clearly indicate decreased risks of SSIs/PJIs [3,4].

We performed a systematic review using PubMed, Medline, Web of Science, Embase, Google Scholar and the Cochrane Library of studies in English. We included journal articles, communications and conference proceedings. Unfortunately, there is a paucity of studies relating specifically to orthopaedic surgery on this topic.

Randomized controlled trials in cardiac surgery and general surgery demonstrated no statistically significant differences in infection rates between the two types of drapes [5,6]. However, a different prospective randomized study of 102 reconstructive breast surgeries, demonstrated a statistically significant lower rate of infection 30 days after surgery in the disposable drape cohort (0 vs. 12%) [7]. The current literature on this topic is inconclusive and there are no studies involving orthopaedic or spine surgery patients. Future research efforts should be focused on this topic.

REFERENCES