



C-Arm Drape during Spine Surgery: A Practical Technique

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Abstract

In spine surgery, often there is a need for intraoperative fluoroscopy through a mobile machine that may be a challenge in keeping the surgical field sterile. The aim of this article is to describe a new technique that may facilitate the draping issue during spine surgery.

Material and Method: A mobile draping method is described with a simple readily available material.

Conclusion: the described technique may save time and reduce the cost of spine surgeries that require c-arm fluoroscopy.

Keywords: C-arm drape; Spine surgery; Technique

Background

Postoperative wound infection usually results from bacterial contamination during or after a surgical procedure. The aseptic technique has developed significantly in the last century. As well as, the spine instrumentation procedures have been advancing tremendously. This advancement increases the need for strict sterile techniques.

The use of surgical drapes has developed as a standard of practice. Their main purpose is to protect sterile surgical field from microbial contamination. Reusable woven fabrics had been used universally as aseptic barriers since the turn of the century.

In spine surgery the use of surgical drapes is as important as in other surgeries. However, in spine surgery, often there is a need for intraoperative fluoroscopy through a mobile machine that may add another challenge in keeping the surgical field sterile. The intraoperative fluoroscopy requires the change in position between the antero-posterior (AP) and lateral views. With each change, new drapes need to be applied to the part of the machine near the room's floor. This may increase the risk of surgical site infection (SSI) [1], consume time and resources especially in minimally invasive spine surgery (MIS) where the fluoroscopy images are essential for the procedures. The aim of this article is to describe a new technique that may facilitate the draping issue during spine surgery.

Material and Method

The idea is to have a mobile drape that has two sides; an inner one facing the sterile field and an outer one facing the contaminated environment. Two intravenous poles are required. After prepping the surgical field, a sterile draping sheet is hanged between the two poles using a couple of sterile clamps at the upper part. The circulating nurse can reinforce the lower part of the sterile sheet by adhesive tape. As the fluoroscopy machine is moved from AP position to lateral position the mobile drape can be moved toward the sterile field by controlling the wheels of the IV pole with the surgeon foot (Figure 1). As the machine in the final lateral position, the drape can be adjusted by the same foot control method to accommodate the surgeon to work while taking the x-ray. To go back to the AP position, the machine can be moved in the position and the mobile drape can be pushed away to be ready for the next lateral view.

Discussion

SSI after spine surgery is a well-known complication that can result in poor outcomes [2]. The incidence of SSI after clean spine is estimated between 1 to 10% [3,4]. Accordingly, the spine surgeons are very meticulous regarding the SSI. It has been shown that prolonged spine surgical time can increase the patient's morbidity and poor outcome [5-7]. So, to have a balance between surgical time and strict sterile technique may be of benefit. On the other hand, decreasing the number of opened sterile drape with each change in the position of the c-arm will be more cost effective. A similar study addressed the same problem and advocates to use the pouch technique (armor), the

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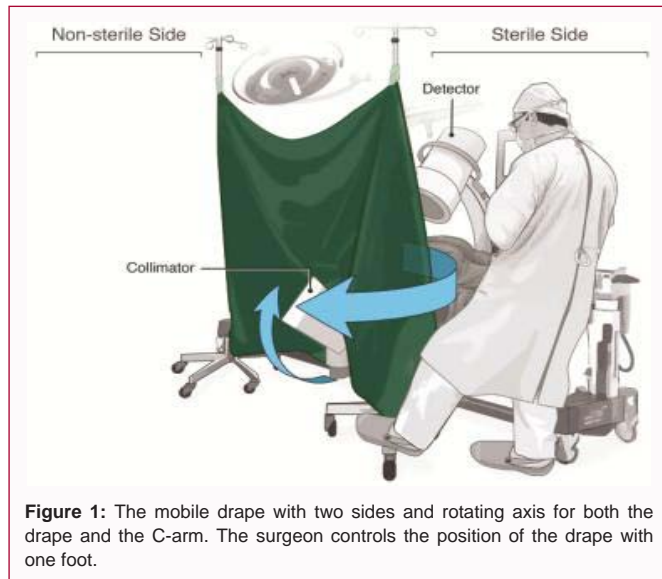


Figure 1: The mobile drape with two sides and rotating axis for both the drape and the C-arm. The surgeon controls the position of the drape with one foot.

issue of that technique is that it is fixed to the drape of the table and multiple levels spine surgery, more than one drape needs to be used.

This article is based on a single surgeon experience with no available data to support this technique. A prospective study needs to be conducted in order to test this technique effectiveness from the infection control point of view.

Conclusion

Mobile c-arm drape is an option in spine surgery that may save time and cost of the procedure.

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