

Flexible Surgical Field Cover: A Solution for Enhanced Sterility in Neurosurgical Environments

Sir,

Sterility of the surgical field is maintained, especially in neurosurgery, where even minimal contamination could lead to severe infection, which may affect patient outcomes.^[1-3] There are interruptions to break the sterile field of view: reviewing imaging and adjustments of equipment. We propose the Flexible Surgical Field Cover: a noninvasive, adhesive device that protects the field and allows seamless access for the performance of tasks with reduced infection risk and procedural efficiency [Figure 1 and 2].

The proposed solutions bring some interesting features, the cover is made of a high-quality, flexible material that can be easily deployed over the sterile surgical field. It is an adjustable design to suit different surgical setups and adapted to a variety of surgical specialties. The device has adhesive edges that attach lightly to the edges of the surgical sheets, thereby securing the cover in place without compromising the sterility of the field underneath. The adhesive action ensures that the cover will not shift out of place even with the manipulation of surgical equipment or adjustment in the positioning of the patient. Flexible Surgical Field Cover flexibly covers an imposing environmental contaminant barrier at stages that are critical to preventing infection in surgery. In this manner, it is able to prevent cross-contamination, either from the equipment or personnel, into the surroundings and the surgical area. The flexible cover can easily be retracted or removed to assure unhindered access to the site of surgery when needed while ensuring maximum protection. This flexibility in providing effective support to surgical teams will never compromise safety with sterility. Durable and transparent material of coverage, allowing the possibility to see the operating site. This feature enables the surgical team to review images or monitor without removing the cover and hence saves time and maintains sterility. Single-use and very cost-effective, Flexible Surgical Field Cover is an excellent solution in the operating theater for maintaining sterility while reducing the frequency of sterilization of reusable covers, at low cost [Figure 3].

The Flexible Surgical Field Cover is used in many various surgical procedures, most especially in the environment where there is a need for the surgical team to engage in activities such as the review of imaging, the installation of equipment, or the making of adjustments in the setup without compromising the sterile field. This versatility makes it an ideal solution for operating rooms across multiple specialties, including neurosurgery, orthopedics, and general surgery. While the idea for the Flexible Surgical Field Cover could

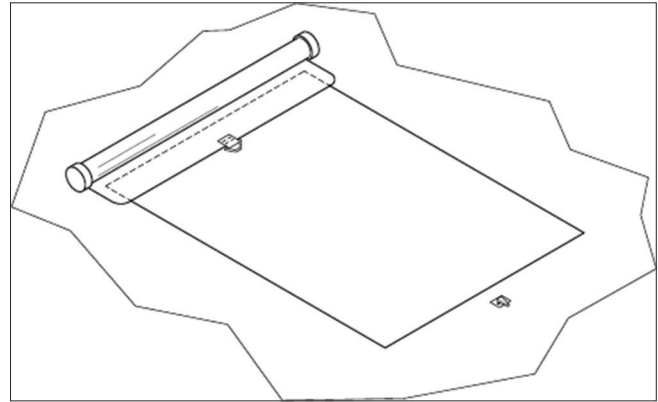


Figure 1: The cover partially retracted, showing how it allows seamless access to the surgical site without compromising sterility

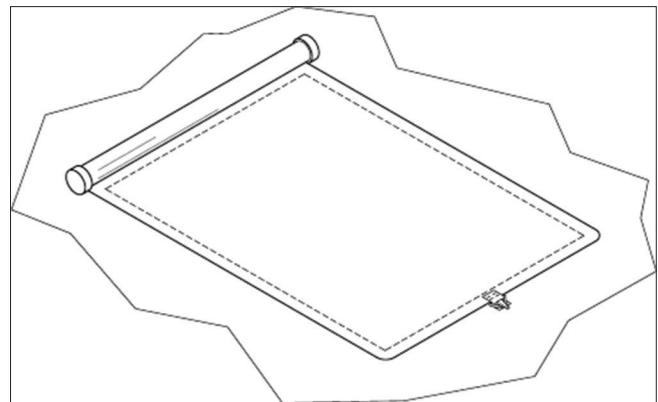


Figure 2: Fully deployed cover demonstrating complete protection of the surgical field

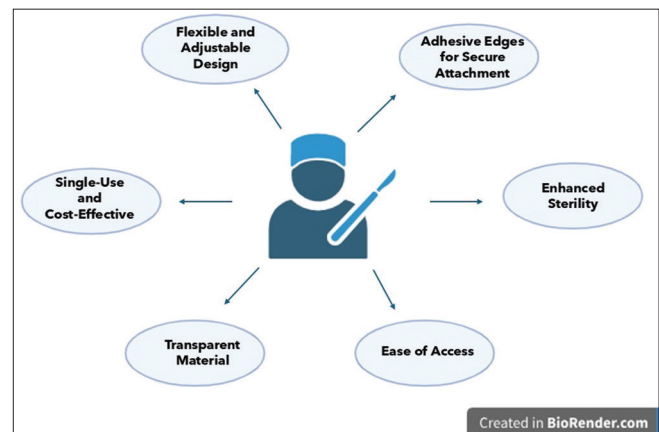


Figure 3: Demonstrating the advantages of flexible surgical field cover

be useful in neurosurgical field management, patenting was never considered because our goal was ultimately to have it in as many hands of healthcare providers and surgical teams as possible. By releasing this design to the open source, we expect all neurosurgeons and surgical teams in the world to make good use of this solution for improving sterility and meanwhile optimizing the flow during the surgical operation to avoid or minimize altogether the risk of infection.

The Flexible Surgical Field Cover combines enhanced sterility with improvements in workflow in a surgical procedure. This technology, in surgical procedures, has reduced complication risks and enhanced work efficiency in an operating room by availing the surgical teams with a pragmatic solution through which a sterile environment may be maintained while ensuring unfettered access when needed for those tasks. This is a step ahead in managing a surgical field, maintaining focus on the procedure while minimizing the risk of infection and contamination. This open approach invites wide adoption to share in collaboration and innovation in surgical practice. The Flexible Surgical Field Cover will be taken up internationally and become a common instrument for surgical teams worldwide. It is anticipated that the proposed method may be made available worldwide for better surgical practice and patients' safety in operating theaters.

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Conflicts of interest

There are no conflicts of interest.

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