CASE REPORT

Absorbable Laparoscopic Cigarette Sponge

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ABSTRACT

Objectives: Minor intraoperative bleeding during laparoscopy poses a significant challenge to the minimally invasive urologist. We report on our improvement of the previously reported laparoscopic cigarette sponge with absorbable materials.

Methods: The sponge was constructed from a strip of absorbable gelatin sponge wrapped in oxidized regenerated cellulose and secured with absorbable suture. This device can be inserted into the laparoscopic field through a standard 12-mm laparoscopic port and similarly removed. It can also remain intracorporeally if left behind following surgery.

Results: The sponge has proven to be very effective at controlling minor hemorrhage and aiding with dissection and retraction.

Conclusion: This device has improved operative safety and provides a useful alternative when laparoscopic bleeding occurs.

Key Words: Laparoscopy, Surgical sponges, Hemorrhage, Hemostasis.

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INTRODUCTION

Large laparotomy sponges and pads are used during open surgery to absorb blood and assist with hemostasis by applying direct pressure to the bleeding surface. Several authors have devised methods for introducing a sponge to the laparoscopic field. Mascagni et al[1] developed a precompressed rectangular gauze sponge that could be introduced through a 10-mm laparoscopic port and used to control minor hemorrhage. Similarly, Gholami et al[2] reported on a surgical sponge configured into the shape of a cigarette for use in laparoscopy. This device was made from nonabsorbable materials. The nonabsorbable sponges, though effective, can be inadvertently left behind within the abdomen because they are small and can be occasionally difficult to recover when hidden behind blood, bowel, and other tissue. We report an improvement on this device made by using absorbable materials.

METHODS

The absorbable laparoscopic cigarette sponge is constructed from a 40x5x5-mm strip of absorbable gelatin sponge wrapped with a single layer of oxidized regenerated cellulose and tied at each end with 2–0 polyglactin sutures **(Figure 1)**. This is introduced into the laparoscopic field through a 12-mm laparoscopic port with a laparoscopic grasper.

RESULTS

The absorbable laparoscopic cigarette sponge allows the laparoscopist a simple, effective tool that can be quickly introduced into the operative field to control small areas of hemorrhage. It is useful to control capillary, small venous, or arterial bleeding, by direct application to the bleeding surface. The sponge is introduced with a locking grasper and held firmly in place at the site of bleeding. The hemostatic effect of oxidized regenerated cellulose is greater when applied dry, and therefore it must not be moistened with water or saline. Intracorporeally, it can also aid in dissection as well as retraction. The choice of absorbable materials allows the surgeon a measure of comfort as small items in the surgical bed can be mislaid or obscured by the anatomy. The scrub nurse does not

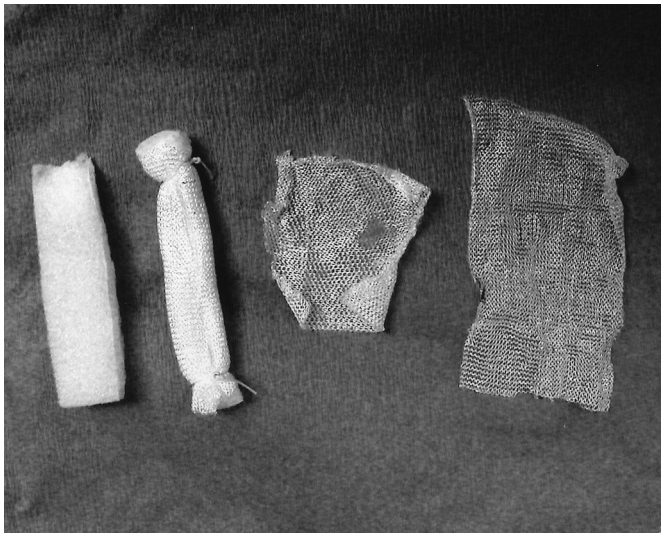

Figure 1. Assembly of the absorbable laparoscopic cigarette sponge. A strip of absorbable gelatin sponge (left) is wrapped by oxidized regenerated cellulose (right) and tied with Vicryl sutures to form a cigarette sponge.

need to maintain a count of the sponges that are introduced into the abdomen. Several of these sponges can be introduced into the abdomen as required. The sponge is not a substitute for meticulous surgical technique and cannot control bleeding from large vessels. Oxidized regenerated cellulose is a strong, white, knitted fabric that can be cut to size without fraying.

CONCLUSION

The absorbable laparoscopic cigarette sponge represents a significant improvement over other similar devices developed previously. It can be utilized similarly to the way a sponge is used in open surgery in retracting, dissecting, and controlling small areas of hemorrhage, making laparoscopy safer and more precise.

References:

1. Mascagni P, Gossetti F, Negro P, et al. Precompressed gauze swab in minimally invasive surgery. *Brit J Surg.* 1995;82:647–649.

2. Gholami SS, Shekarriz B, Rudnick D, et al. The laparoscopic cigarette sponge. *J Urol.* 2001;166:194.