

## SURGICAL TECHNIQUE

# INTRACORPOREAL RIBBON GAUZE IN LAPAROSCOPIC SURGERY

SIMON V. BARIOL, CHIN T. HENG AND HOWARD M. LAU

*Department of Urology, Westmead Hospital, Sydney, New South Wales, Australia*

Good haemostasis optimizes laparoscopic visibility and performance. The use of suction reduces pneumoperitoneum and collapses the operative space, and the resulting fall in intra-abdominal pressure can increase the rate of bleeding. Therefore, other methods of improving laparoscopic visibility need to be investigated. In the present report we describe the effectiveness of a 20–40-cm length of 3-inch ribbon dressing gauze when introduced into the peritoneal cavity via a 10–12 mm laparoscopic port. Current results indicate that intracorporeal ribbon gauze can be used successfully during laparoscopic procedures as a suction filter, to assist haemostasis, to facilitate dissection and to provide atraumatic organ retraction.

**Key words:** haemostasis, laparoscopy.

### INTRODUCTION

Good visualization is paramount in safe laparoscopic surgery. Bleeding obscures lines of dissection and reduces visibility because the blood absorbs light intensity. The use of suction reduces pneumoperitoneum and collapses the operative space, and the resulting fall in intra-abdominal pressure might increase the rate of bleeding.<sup>1</sup> In the present report we describe the application of a standard ribbon dressing gauze into the peritoneal cavity during laparoscopic procedures. The gauze is used as a tamponade, to facilitate dissection and organ retraction and assist with the clearing of blood and other body fluids. The gauze also acts as a filter during suction, which reduces the effect of suction on pneumoperitoneum.

### METHODS

The materials of interest in this technique include a 20–40-cm length of 3-inch ribbon dressing gauze with radiopaque strip.

The gauze is introduced into the peritoneal cavity via a 10–12-mm laparoscopy port using straight or right-angled graspers. A shorter length is recommended for inexperienced users because it is easier to manipulate within the peritoneum.

The gauze is packed into an area of bleeding to facilitate haemostasis. If bleeding is heavy or clotting has occurred, a sucker can be used over the gauze to reduce loss of pneumoperitoneum. If the gauze becomes soaked, grasping one end with laparoscopic forceps and pulling it through a 10-mm port can remove it. This manoeuvre disables the port's valve, so care must be taken not to splash the surgical team by shielding above the port with a surgical sponge. Alternatively, the ribbon gauze can

be removed along with the specimen, following its mobilization, in a laparoscopic catchment bag.

Bunching one end of the gauze in a grasper produces a very effective instrument for blunt dissection, similar to a peanut dissector. Finally, the gauze can be placed between retracting forceps and a solid organ (e.g. liver, spleen), enabling safer retraction.

### DISCUSSION

Although our experience with intracorporeal ribbon gauze is confined to laparoscopic urological procedures (renal and adrenal surgery, radical prostatectomy), it could easily be applied to upper gastrointestinal or pelvic laparoscopy. Intracorporeal ribbon gauze can be used in a number of ways to assist laparoscopic surgery:

(1) Haemostasis. We have found its use invaluable in providing pressure over sites of slow venous bleeding to facilitate haemostasis. This manoeuvre enables better identification of the bleeding source without loss of pneumoperitoneum, which occurs when blood is aspirated. Use of the gauze complements existing methods of haemostasis, including monopolar and bipolar diathermy, ultrasonic coagulators and mechanical clipping devices.<sup>2</sup>

(2) Suction filter. The use of the gauze as a filter during suction of blood pools reduces the effect on pneumoperitoneum, enhancing visibility when it is most needed.

(3) Blunt dissection. This is particularly useful during dissection of the renal hilum, simulating the technique used in open surgery.

(4) Organ retraction. Retraction of solid organs by laparoscopic forceps can cause capsular injury and bleeding. Holding the gauze against the organ with the retracting forceps prevents this.

The surgeon needs to be mindful of where the gauze is placed; however, after over 250 procedures the authors report no complications relating to its use.

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S. V. Bariol MB BS, BSc; C. T. Heng MB BS, FRACS; H. M. Lau MB BS, FRACS.

Correspondence: Dr Simon Bariol, Scottish Lithotripter Centre, Western General Hospital, Crewe Road South, Edinburgh EH4 2XU, UK.  
Email: bariol@onetel.com

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