

Technical Report

An Improved Method of Securing Abdominal Wall Bleeders During Laparoscopy

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INTRODUCTION

LAPAROSCOPY AND OPERATIVE LAPAROSCOPY are the second most commonly performed gynecologic procedures after dilatation and curettage. During these procedures, injuries to the blood vessels in the abdominal wall have resulted from direct trauma caused by either the pneumoperitoneum needle or the trocars. (1) An injury can occur despite direct visualization, elevation of the abdominal wall, and establishment of a large pneumoperitoneum. (2,3) Such injuries have been reported as caused by the pneumoperitoneum needle in 31 of 109 cases, a primary trocar in 28 of 104 cases, and a secondary trocar in 28 of 61 cases. (3) The incidence of injuries to the inferior epigastric vessel is not generally known.

MATERIALS AND METHODS

Suggested treatments for the bleeders have included the use of a bipolar cautery for fulguration, a Foley balloon tamponade technique, and insertion of a suture through the full thickness of the abdominal wall under vision.⁴ The first two methods are cumbersome and may cause prolonged delays or even postponement of the rest of the procedure. The third method can prove to be a difficult undertaking, particularly in obese patients. Occasionally, a laparotomy is required to control the bleeding. (5)

One of the authors (E.D.R.) has developed a small-bore needle (Riza-Ribe®, or R-R, needle*) with a plunger. Pushing the plunger makes a retractable loop of wire appear with which one can grasp a suture or pass it through the tissue planes (Fig. 1).

Under laparoscopic visualization using a 0 Vicryl or Prolene suture loaded on a needle, one end of a free ligature is introduced on the inferior or the lateral side of the injured blood vessel. The end of this ligature is then freed, and an empty needle is introduced on the opposite side of the blood vessel. The freed ligature end is then loaded through the R-R needle with the help of a grasper or a needle holder and withdrawn onto the skin. The ends of the ligature are tied over a folded 4 by 4 inch gauze. The gauze protects the skin and augments the tourniquet effect (Fig. 2).

A second ligature is introduced a little distance away from the first ligature and tied on the injured blood vessel to arrest the bleeding. There is no need to remove the trocar during the procedure, and the operative procedure need not be abandoned.

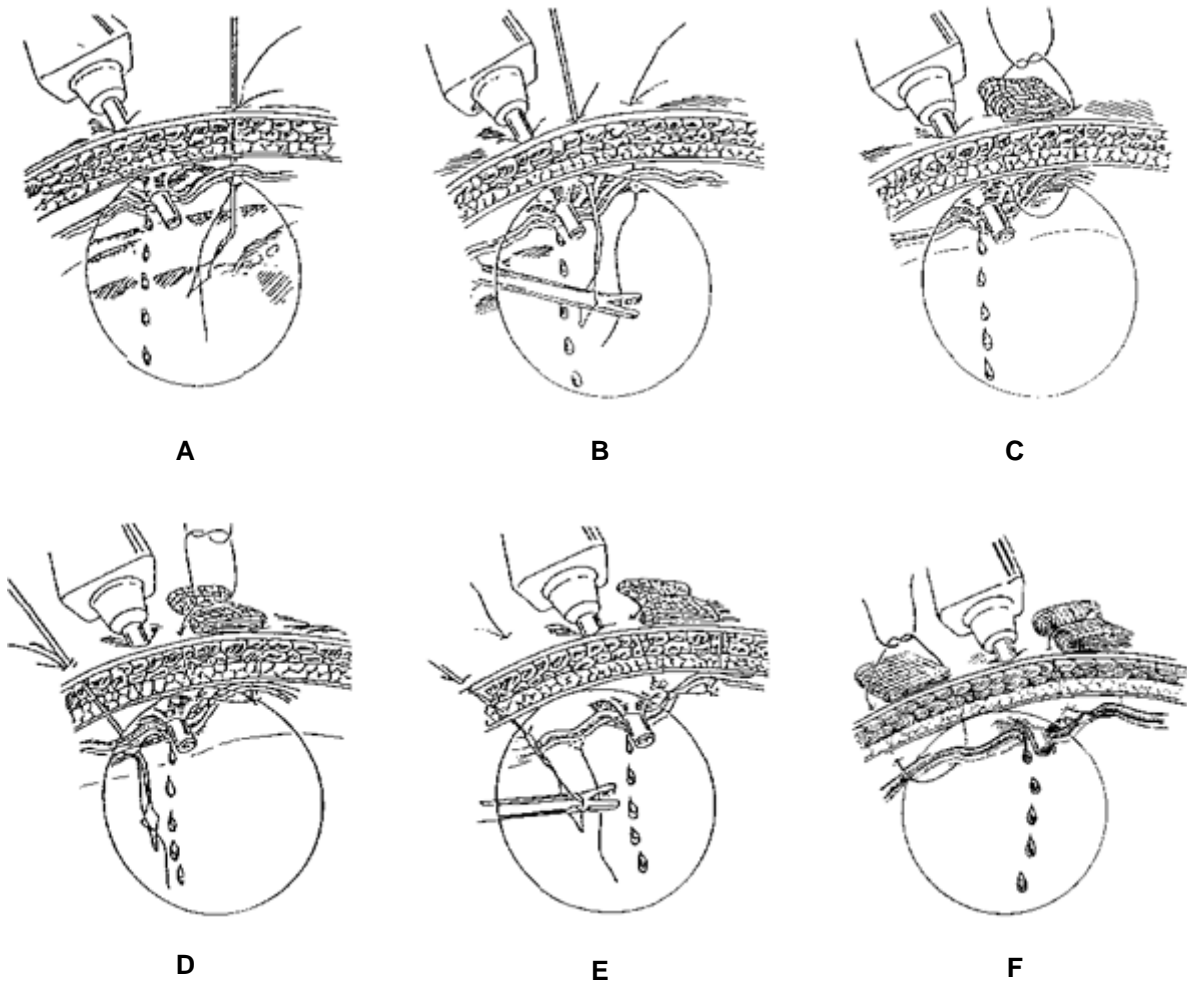
St. Charles Hospital, Oregon, Ohio.

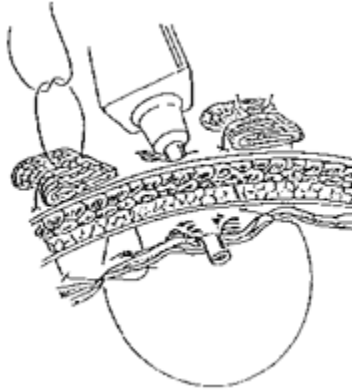
***R-R needle is a proprietary product of R-MED, Inc., Oregon, Ohio. Dr. Riza has a financial interest in R-MED, Inc.**



Fig. 1. A. Loading the Riza-Ribe Needle with ligature.
B. Riza-Ribe needle loaded with ligature and retracted.

SECURING ABDOMINAL BLEEDERS IN LAPAROSCOPY





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Fig. 2. A. Introduction of ligature to the lateral side of the injured vessel. **B.** Loading freed ligature at the proximal side of the injured vessel. **C.** Ligature tied over a folded 4 by 4 inch gauze. **D.** Securing proximal end of the injured vessel. **E.** Securing proximal end of the vessel. **F.** Ligature tied over a folded 4 by 4 inch gauze. **G.** Bleeding Secured.

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DISCUSSION

This procedure has been used successfully on six occasions. The time required to ligate the bleeder has been 4.5-6 min. The ligature can be removed postoperatively after 8 hrs without evidence of further bleeding.

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