

Endo-Bag Retrieval Using the “Fishing Technique”

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ABSTRACT

In minimally invasive procedures, one of the surgeon’s goals is finalizing the surgery safely while using the minimum number and size of trocars. In this article, we present the “fishing technique” which helps to avoid using an extra 10mm trocar in order to deploy specimen retrieval bags.

INTRODUCTION

Minimally invasive surgery started developing more than four decades ago with the introduction of laparoscopic surgery and later robotic surgery. More surgeons started adopting this approach for its multiple advantages, including better surgical field exposure, less postoper-

ative pain, less bleeding, better esthetic results, less preoperative and postoperative complications, and earlier ambulation and recovery.^{1,2} However, it presents many challenges including the surgical specimen retrieval from the intraperitoneal cavity while avoiding spillage, infectious contamination, and malignant dissemination. Hence, many

types of specimen retrieval bags were developed and used to extract specimens through trocar port incisions or through natural orifices such as the trans-vaginal and trans-anal routes. The common aspect of most bags is the fact that they require 10-, 11- or 12mm trocars. For interventions requiring 5mm trocars and only one trocar of 10mm for the camera, such as laparoscopic appendectomy or ovarian cystectomy or oophorectomy, surgeons may often have to replace a 5mm trocar with a 10mm trocar in order to insert and/or retrieve the bag. In this article, we present a surgical trick, the “fishing technique,” which can be used for two types of Endo Bags™ (Medtronic, plc., Minneapolis, Minnesota), offering specific advantages.

CASE PRESENTATION

Some surgeons use a manually-opening retrieval bag with a 10mm diameter applicator for specimen retrieval (e.g., Endo Bag™). In the first video, a 27-year-old male underwent a laparoscopic appendectomy for an uncomplicated appendicitis. Before introducing the bag into the intraperitoneal cavity using the applicator, the surgeon advanced the bag inside the applicator in order to visualize the small plastic or metallic loop located on the end of the plastic wire. Then, a VICRYL® suture (Ethicon Inc., Raritan, New Jersey) was placed on the loop, as shown in Figure 1, before pushing the bag through the 10mm camera trocar. The VICRYL® thread remained hanging out of the trocar, and it helped the surgeon to retrieve the bag effortlessly at the end of the procedure.

Other surgeons use an automatic-opening retrieval bag (e.g., Endo Catch™, Medtronic, plc., Minneapolis, Minnesota). This type of bag also requires insertion through a 10mm trocar. Therefore, in order to avoid replacing a 5mm with a 10mm trocar, we detach the bag from the continuous ring and the plastic shaft as shown in Video 2 and Figure 2. The surgeon or scrub nurse cuts the bag’s thread, which is visible in the proximal portion of the plastic shaft. The bag, along with the thread—which serves as its closure, can then be separated from the plastic shaft and introduced in the camera trocar using a grasper, as the thread’s extremity is left hanging out of the trocar. After securing the specimen inside the bag, the surgeon pulls on the thread and retrieves the bag securely.

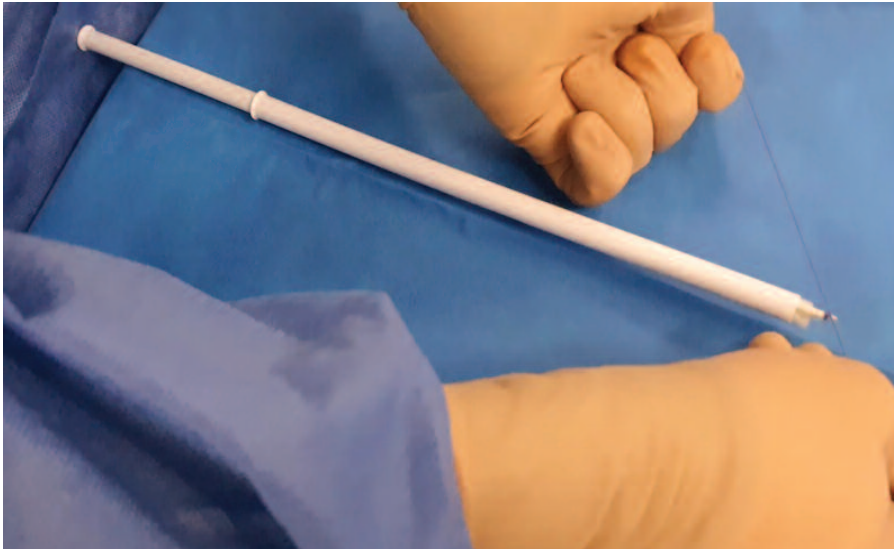


Figure 1. Thread attached to the loop located on the end of the plastic wire.

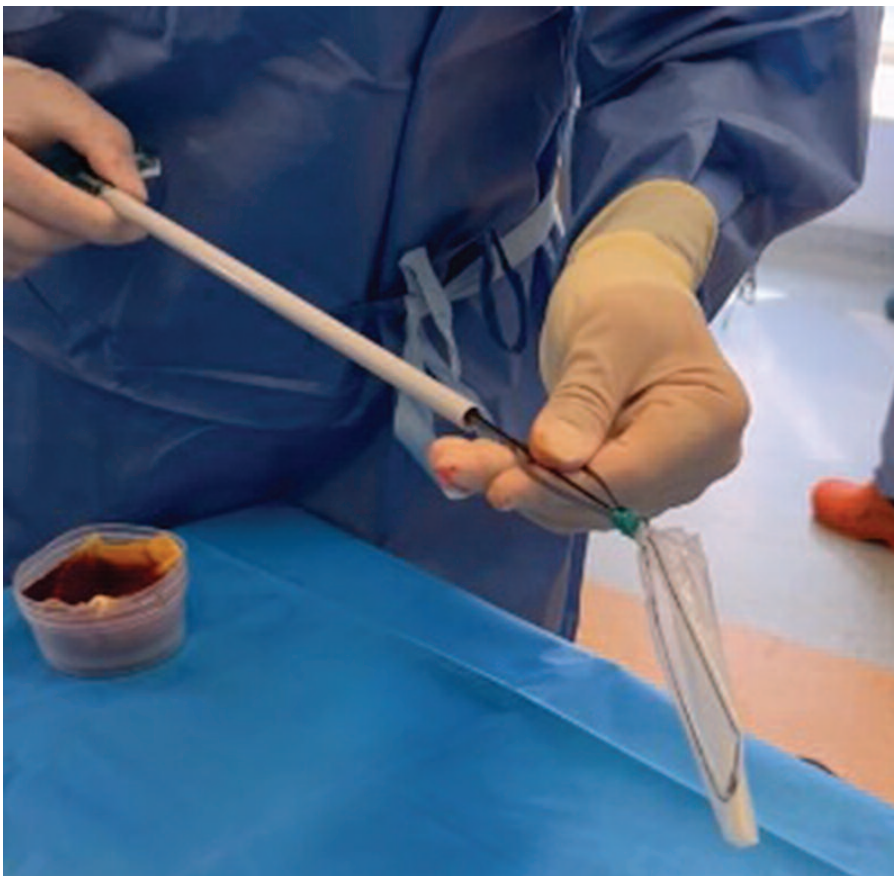


Figure 2. Separating the bag from the continuous ring and the plastic shaft.

DISCUSSION

In minimally invasive procedures, one of the surgeon's goals is finalizing the surgery safely, using the minimum number and size of trocars. This is mostly related to the esthetic benefit and the lower risk of incisional hernias while using trocars smaller than 10mm, which do not require closure of fascial defects.³ The size and employed technique of deploying specimen retrieval bags often obliges the surgeon to replace a 5mm trocar with an extra 10- or 15mm trocar. Some surgeons tried to avoid the latter by doing atypical bag extraction techniques such as the "rendez-vous technique" for manually opening bags. This technique consists of grabbing the extremity of the plastic wire using a grasper through a 5mm trocar. Then, after aligning the latter trocar with the 10mm camera trocar in

the same direction under visual control, the surgeon pushes the grasper, holding the bag through the 10mm trocar causing rapid exsufflation. Subsequently, the surgeon retrieves the Endo Bag™ before taking out the grasper through the 5mm trocar without visual control. The "rendez-vous technique" requires more time compared with the "fishing technique" described earlier, and it presents the risk of causing intrabdominal injuries when removing the grasper without visual control at the end of the surgery. The "fishing technique," which is based on leaving the bag attached to a thread hanging out of the camera trocar, offers a faster and safer technique for automatic- and manual-opening specimen retrieval bags.

CONCLUSION

The "fishing technique" helps to

avoid using an extra 10mm trocar in order to deploy specimen retrieval bags during minimally invasive surgery, and it can be safely and efficiently used on automatic- and manual-opening specimen retrieval bags. **STI**

AUTHORS' DISCLOSURES

The authors have no conflicts of interest to disclose.

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