

Laparoscopic Entry: A Hybrid Technique of Open Hasson and Direct Trocar Access

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ABSTRACT

The first trocar entry for creating pneumoperitoneum is a very crucial step in minimizing complications and completing the procedure laparoscopically. Various methods have been described, among which Veress and open Hasson technique are widely used. Here we describe a novel and hybrid technique of combining open Hasson and direct trocar with several advantages.

Keywords: Entry, Laparoscopy, Technique.

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INTRODUCTION

Laparoscopy as a minimally invasive technique has many advantages for both the patient and the surgeon. As the armamentarium of laparoscopy is widening, the need to reduce complications and make it safe and easy to learn even for newcomers is a constant work in progress. The first trocar entry is a very important step in minimizing the complications and in completing the procedure laparoscopically.¹ There have been numerous techniques described for easy and safe access into the abdominal cavity for creating a pneumoperitoneum. Many surgeons use the Veress or the open Hasson technique, and with experience the ease of doing it is acquired, but the difficulty level in the initial few cases remains with both the techniques, and rarely even experienced surgeons face difficulty in few cases with these techniques. So, here we describe a hybrid technique of open and direct trocar access i.e., easy to get access into the abdomen, safe for the patient with minimal complications, and straightforward for any newcomer to learn and teach others.

TECHNIQUE

- A midline vertical supraumbilical/infraumbilical incision is made for 1 to 1.5 cm long with a 15 no surgical knife (Fig. 1).
- The subcutaneous layers are opened upto the linea alba either using the knife or bluntly with artery forceps (Fig. 2).
- The linea alba is opened vertically (7–8 mm) till the peritoneal layer. It is necessary to open the linea alba in midline (Figs 3 and 4).



Fig. 1: Skin incision (supraumbilical)



Fig. 2: Linea alba visualized



Fig. 3: Linea alba incised

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Fig. 4: Linea alba incised, peritoneum intact



Fig. 5: Trocar positioned at incised linea alba, ready to insert into peritoneal space



Fig. 6: Trocar insertion with elevation of abdominal wall



Fig. 7: Camera insertion visualizing the peritoneal space

- The 10 mm trocar is inserted at the site of linea alba opening and pushed downward through the peritoneum while the left hand elevates the abdominal wall (while carefully feeling the resistance) (Figs 5 and 6).
- The entry into peritoneal cavity is confirmed with air flow (at low rate of 3 l/min or by direct visualization by scope) and inserting the scope (Fig. 7).

ADVANTAGES

- The midline incision helps in easy dissection to the linea alba and also in extending the incision for easy specimen removal.
- The closure of the sheath is easy, assured, and free of future possible hernia. Considering the anatomy of the umbilicus, the ligamental support structures of the umbilicus are least damaged with direct vertical incision either above or below umbilicus.
- The force required to insert trocar is minimal as only the peritoneal layer needs to be breached, thereby avoiding injuries to bowel, vessels, or mesentery due to excess uncontrolled force used in direct trocar access. (One develops the feel as the experience increases).

- The chances of air leak surrounding the trocar is avoided as the incision in the linea alba is less than 1 cm, thereby snugly fitting the trocar.
- If it needs to be converted to a laparotomy the incision can be easily extended unlike periumbilical transverse incision.
- The chance of extraperitoneal insufflation like in Veress needle insertion is avoided.
- Even in patients with previous lower abdomen scar extending into the umbilicus, this technique can be used with incision placed few centimeters above the umbilicus.
- The overall time taken in establishing pneumoperitoneum is comparatively less than Veress or open access techniques.

EXPERIENCE

The senior surgeon of our team first described this technique and has been using it for all his laparoscopic procedures since 2001 and now has experience of more than 4,000 procedures. He had no complications like bowel/mesentery or vascular injuries. The two other authors of this article are using this technique for over

a year now and have found it easy and reliable, without any injuries whatsoever.

DIFFICULT SITUATIONS

The difficult situations are the same as what one faces for other techniques like previous scar in the upper abdomen or hernia at umbilicus; in such cases palmer's point can be preferred for insertion of either Veress or direct 5 mm trocar depending on experience. If the cut in linea

alba is slightly lateral, the entry with trocar might be through different layers of the abdominal wall like rectus muscle, posterior rectus sheath, and peritoneum leading to difficulty in either extending incision for specimen removal or for closure of the sheath.

REFERENCE

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