

Entry Technique for Laparoscopy

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The present trend in laparoscopic surgery is to make use of the Veress needle as an instrument for palpation of the abdominal cavity to secure "safe" blind introduction of the first trocar. The oxymoron is witness to the many mishaps experienced by the most daring surgeons who approach blindly each and every abdomen, irrespective of previous surgery. The "bayonet technique" heralded by the gynecological school of laparoscopy has never been accepted by us, due to its inherent characteristic risk of injuries to the pelvic or retroperitoneal organs. Whenever the patient has had previous abdomino-pelvic surgery, the open laparoscopy technique is preferred with the Hasson's trocar either at the navel or at any other location, as deemed appropriate by the site of old incisions. Experience and laparoscopic findings have led us to enforce the principle that open laparoscopy should be instituted if any scar, even from previous laparoscopy, is present over the anterior abdominal wall. A variation in the technique for introduction of the Veress needle and safe execution of the pneumoperitoneum was devised to be used when the peritoneal cavity has not been violated surgically.

TECHNIQUE

The patient is initially maintained in supine position. Obese patients are placed in a mild Trendelenburg position, to allow the infraumbilical fat pad to return to its normal position, thus straightening up the navel.

A transverse incision is made in the lower part of the umbilical fossa and the incision is sharply or bluntly carried down along the inferior border of the umbilical funnel. The adipose tissue in midline is dissected away from the hard dermis of the

navel, while a towel clamp is used to raise the lower part of the umbilical funnel (Fig. 1).

If the patient has a thin abdominal wall, the towel clamp may not have to be moved. In obese patients the towel clamp is repositioned as the dissection proceeds downward.

The junction between the rectus sheath and the umbilical funnel (Fig. 1) is identified in midline; this area is the point where the abdominal wall is at its thinnest and represents the ultimate goal of the dissection.

As demonstrated in Figure 2, the

preperitoneal fat pad significantly increases distal to the navel with its maximum depth in the supra-pubic area. Cranially to the navel in obese patients, the fat content of the umbilical ligament can be quite significant (Fig. 3) and usually is slightly to the right of midline.

Most commonly the preperitoneal fat pad is thin at the navel, and the posterior sheath of the rectus muscle (proximal to the semicircular line of Douglas) is at its strongest level and practically adherent to the peritoneum.

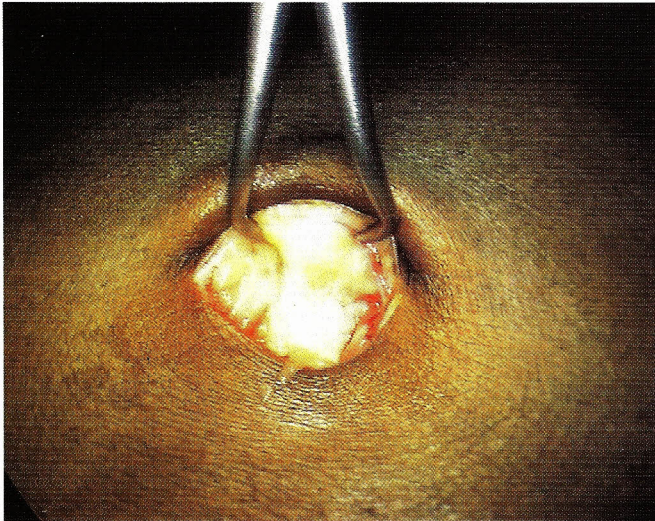


Figure 1. The towel clamp is pulling the lower part of the umbilical funnel, exposing the junction with the fascia of the rectus muscle.

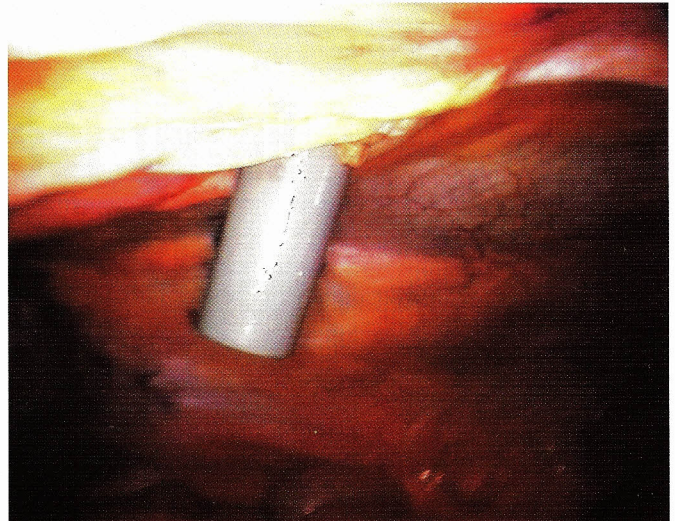


Figure 2. Umbilical port in place. Proximally (on the right of the cannula) the preperitoneal fat pad is almost nonexistent. Distally (left of the cannula) the fat pad increases to its maximum thickness in the suprapubic area. Downward introduction of the Veress needle may lead to preperitoneal insuff-

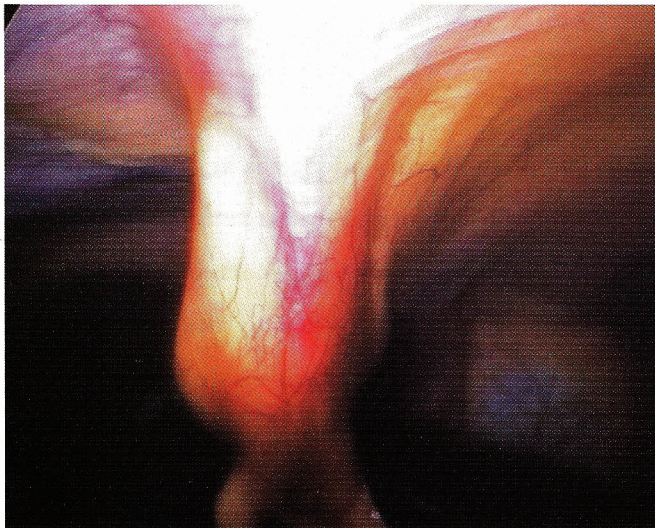


Figure 3. In obese patients the umbilical ligament may be quite hypertrophic. Aiming the Veress needle to the left upper quadrant prevents insufflation into the umbilical ligament.

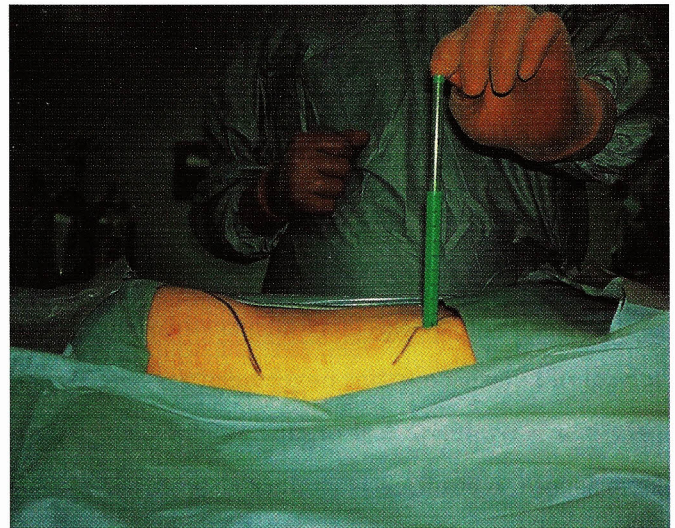


Figure 4. Anterior abdominal wall at rest. The ruler rests on the right anterior superior iliac spine.

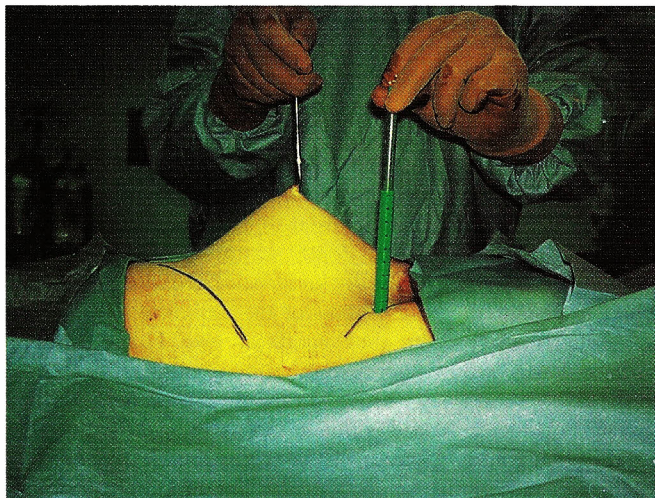


Figure 5. Traction with a towel clip on the navel elevates the anterior abdominal wall up to 4 to 5 inches.

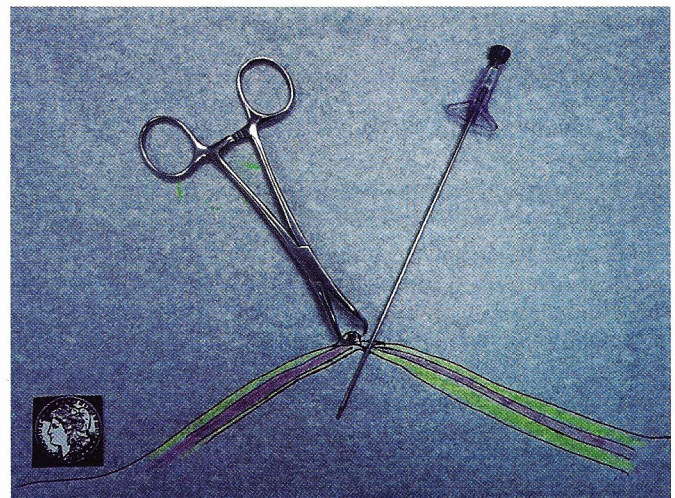


Figure 6. Drawing showing both elevation of the abdominal wall and upward introduction of the Veress needle.

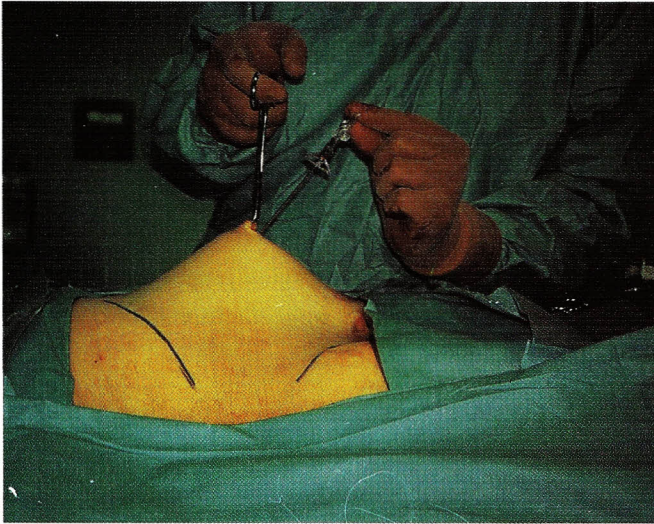


Figure 7. Same as Figure 6 on the patient. Right costal margin marked on the left of the picture.



Figure 8. While the abdominal wall is maintained elevated, the needle is introduced toward the left upper quadrant.

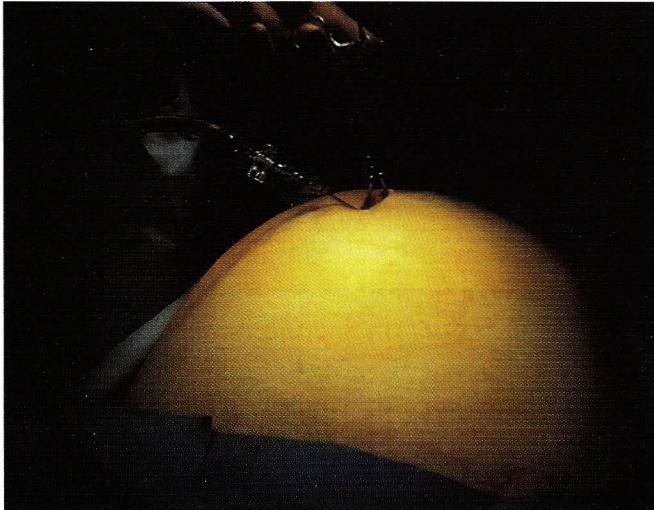


Figure 9. The Veress needle is connected to the CO₂ gas supply line.



Figure 10. Immediate reading of the "actual intra-abdominal pressure" confirms the proper position with a negative pressure reading by increasing traction on the abdominal wall.

As Figures 4 and 5 clearly show, traction on the towel clip may raise the abdominal wall 4 to 5 inches safely above its rest position.

With the anterior abdominal wall safely away from the underlying structures, the Veress needle (Figs. 6, 7) is slowly introduced from the base of the navel downwards, with a 60-degree angle, directed to the left upper quadrant.

One or two "clicks" of the needle indicate passage into the abdominal cavity, usually with less than one-half to 1-inch advancement. The needle is then advanced another inch and its free lateral motion checked (Fig. 8).

Aspiration with a syringe and the "water drop test" will further confirm the

proper placement.

The needle is then connected to the CO₂ gas supply line (Fig. 9), the towel clip is pulled upward even further, and an immediate reading of the "patient pressure" is taken: any negative reading confirms the safe intra-abdominal position (-1 to -5 mmHg), as in Fig. 10.

After having reached the pre-set intra-abdominal pressure, the patient is placed in Trendelenburg position and the first trocar is introduced through the umbilical incision, aiming it towards the mid pelvis.

The towel clip can be either removed prior to the introduction of the trocar, or may be left in place to aid in stabilizing the anterior abdominal wall.

The Veress needle is introduced at the

junction between the navel and the fascia, with direction to the left upper quadrant. With this change from the standard technique, the Veress needle crosses the abdominal wall, elevated by the traction from 2 to 4 inches, at its thinnest level.

CONCLUSION

From the beginning of our experience in early 1990, we felt that the technique of our access had to be based on logic and safety, rather than tradition and current teaching. The principles expressed have been meticulously applied for 5 years. Thousands of accesses without any complications have proven the value of our entry technique. **STI**