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Scientific letters

Glove Port Cholecystectomy☆

Colecistectomía por puerto único

The objectives of single-port procedures for cholecystectomy are: to minimize postoperative pain, improve esthetic results and not increase costs while maintaining patient safety.

In this paper, we describe how a surgical glove together with a conventional wound protector can be used to create a device that is comparable to commercially available ones to facilitate the single-incision approach for gallbladder resection in a Hepatobiliopancreatic Surgery Unit.

The proposed access device is made from a standard retractor (ALEXIS®, small size) and a number 8 surgical glove.

An umbilical incision is made in the skin with a 2–3 cm aponeurotic orifice to allow for the correct placement of the retractor. The area is checked for adherences to the abdominal wall that could impede proper placement, and the inner ring is then put into place. With the intraperitoneal device in position, the outer ring is then correctly secured and the device is turned to achieve correct retraction and placement in the abdominal wall. Prior to giving the last two turns of the outer ring, we introduce the glove to be included in these last 2 turns so that the device presents no air leaks and stays in place throughout the entire intervention (Fig. 1).

We cut 2–3 cm off of the glove fingers in order to provide better fixation of the trocar to the glove, greater stability and good mobility. We use the same instruments as in conventional laparoscopy since the device does not restrict their size. We introduce an 11 mm trocar in the ring finger of the glove, a 5 mm trocar in the thumb and the 11 mm optical trocar in the middle finger. The trocars are secured by tying the fingers of the other glove around them, which makes the device airtight (Fig. 2).

These ports likewise provide a good entry orifice for the instruments that must be interchanged during surgery (camera, endo-stapler, dissector, etc.), while maintaining the pneumoperitoneum. Curved devices can be used if necessary.

During the maneuvers for introducing the instruments in the cavity, it is necessary for the camera to retrocede in order to show the parietal orifice and allow for the instruments to enter correctly without causing injury.

Triangulation with this type of surgery gives exposure of an adequate surgical field in order to correctly identify the elements of Calot's triangle and to perform cholecystectomy.

Once the surgical specimen is detached, it is withdrawn with the traction clamp. After disassembling the glove from the retractor, it is extracted through the orifice of the ALEXIS®. An additional savings of the use of the skin retractor is that it is not necessary to use an extraction bag for the gallbladder.

Wall closure is done conventionally and absorbable intradermal suture is used to reconstruct the skin; the incision scar is hidden within the navel.

We have used this technique in 3 patients between January and February 2013, with no immediate complications.

The approach that we propose for glove-port laparoscopic cholecystectomy uses a device that provides patient benefits and is affordably accessible for all surgeons and not just for those who have commercial devices available to them. With its use, we have found many advantages, which are not just cost-related.[1,2] The use of this device is easy. Up to 5 instruments can be worked with simultaneously, with no size restrictions, while most commercial devices only have 3 or 4 working ports.

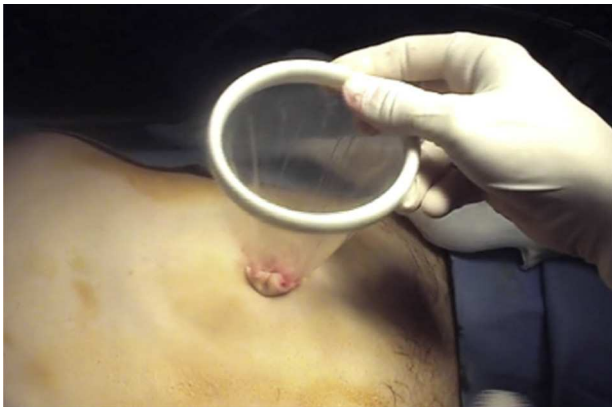

Fig. 1 – Skin retractor.

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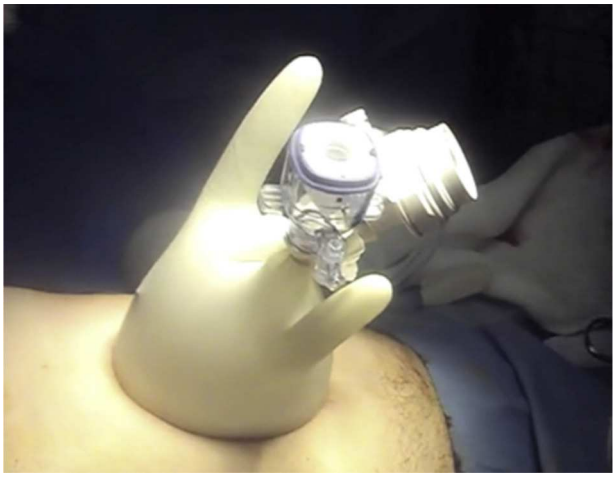

Fig. 2 – Trocar and surgical glove.

The glove port is certainly also attractive with regard to technique, as it provides a wider axis of movement. The instruments can be interchanged, crossed and rotated as the situation requires. Furthermore, there is freedom of movement in the horizontal and vertical planes and friction is avoided between the trocars and abdominal wall. This could be an advantage with regard to parietal trauma and could result in less postoperative pain.[3,4]

The use of the glove port is an inexpensive, safe, easy-to-do technique that should be considered for numerous procedures,[5,6] such as laparoscopic cholecystectomy. It provides access that is, at the very least, similar to commercial devices. Due to its ease of use and the fact that it is a low-cost, reproducible technique, we believe that it can be implemented as a routine procedure for cholecystectomy in selected patients.

To validate the utility of this device, we believe that it is necessary to develop a comparative study between conventional single-port devices and the glove port system in order to analyze their advantages and disadvantages, with special emphasis given to the costs involved in the two procedures.

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Verónica Gumbau Puchol[a], José Mir Labrador[b,*]

[a]*Hospital General Universitario, Valencia, Spain*
[b]*Unidad Hepatobiliopancreática, Hospital General Universitario, Valencia, Spain*

[*]*Corresponding author.*
E-mail address: jomirla@gmail.com (J. Mir Labrador).

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