

## Correspondence

### 'A simple subcutaneous tissue closure device for laparoscopic procedure' by Airan & Sandor

Sir - We read with interest the paper of Drs Airan and Sandor regarding a new device for laparoscopic incisional repair [1]. In this article, the authors have stated that the Carter-Thomason device sometimes causes ilio-inguinal nerve entrapment and subsequent lower abdominal pain. We have been using this device routinely for the past few years for closure of different sizes of laparoscopic incisions in different patient populations without any problems or such complications. We do not agree with the authors that the angle of entry cannot be changed using this device. Different available sizes of the Carter-Thomason obturator allow the surgeon to select the appropriate size based on the patient's weight and the size of the incision (5 mm, 10 mm or larger). An instrument is as safe as the surgeon who is using it.

Ilio-inguinal nerve entrapment or other complications such as abdominal and lateral pelvic wall vessel injury can occur with any of the available incisional closure devices. Control of entry and appropriate angle of insertion are the key factors in using these devices successfully.

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### Reference

- 1 Airan MC, Sandor J. A simple subcutaneous tissue closure device for laparoscopic procedure. *Min Invas Ther & Allied Technol* 1996; 5: 35-7

Sir - Regarding the above named article, I would like to offer a differing viewpoint with regard to fascial closure. In situations where the 10 mm port has not been extended, e.g. in the case of the removal of the gall bladder, it is impossible to insert a fascial closure device through the side of a trocar because the skin is already stretched extremely tight around the trocar. Therefore, fascial closure requires the removal of the operative trocar and

insertion, as in the case of the Carter/Thomason device, of a plug to prevent loss of pneumoperitoneum. With regard to the authors' objections about the predrilled angle of entry, one can easily enter the peritoneum under vision some 3 mm away from the peritoneal defect by the simple expedient of angulating the plug cephalad or caudad.

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Sir - With regard to the above named article and its comments regarding the Carter-Thomason Needle Point Suture Passer (US Patent No. 5 496 335), the following points are to be considered:

- 1 The obturator which plugs the trocar site has predrilled angled guide holes which have been carefully engineered to ensure the operator obtains sufficient tissue for good fascial closure (Figure 1). The obturator is available in two sizes for average and heavy patients (greater than 200 lb or 85 kg). In over 4000 fascial closures by a single operator there have been no episodes of ilio-inguinal nerve entrapment causing pain.

To obtain the ilio-inguinal nerve with any fascial

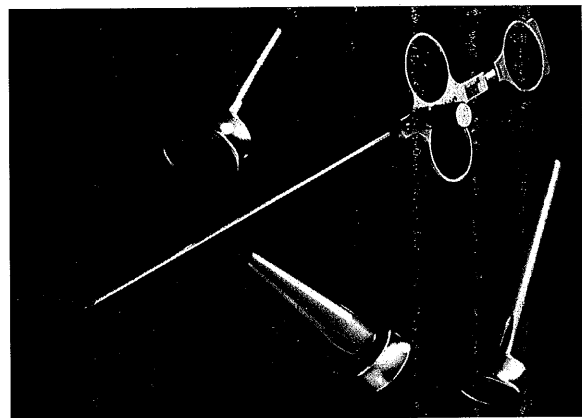


Figure 1.

## Needle Point Suture Passer

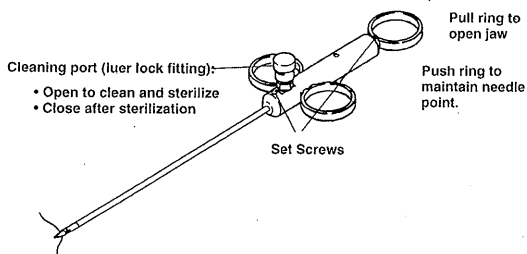


Figure 2.

closure technique, the surgeon would have to place the entry trocar in the wrong position, and even then would have to angle the fascial closure device at a difficult angle for this to occur. In over 4000 fascial closures using the Carter–Thomason device there have been no episodes of ilio-inguinal nerve entrapment by this writer and none reported by over 750 users of this device with its guide.

In fact, pain which occurs with any mass closure technique is likely due to too tight an approximation of the tissues causing a small amount of muscle ischaemia. This can be avoided by approximating the tissues with the suture rather than strangulating the tissues with a forceful tie.

The proper method for utilizing the Carter–Thomason Needle Point Suture Passer with guides is demonstrated in the attached Figures 2–6. The surgeon has the option of changing the angle of entry by simply orienting the guide more cephalad or caudad to change the amount of tissue obtained.

- 2 The Carter–Thomason needle-point grasper functions as a standard laparoscopic grasper for retrieving suture. The retrieval end of the device is the true end of the device and therefore the operator is not required to pass a needle-point tip beyond the suture to be grasped. With the device described by Airan the needle point must pass the suture to be grasped in order to

### Jaw Open:                      Jaw Closed:

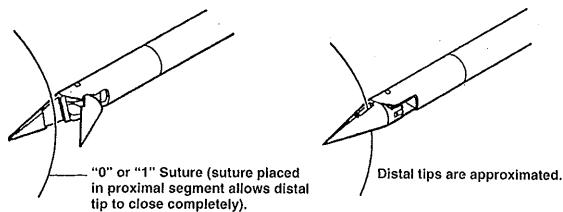


Figure 3.

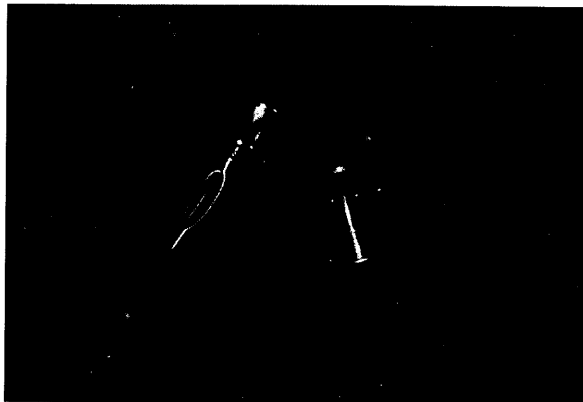


Figure 4.

retrieve the suture, making it possible that a viscus or vascular structure could be injured by the protruding tip while the operator is concentrating on retrieving the suture.

The difficulty with retrieving suture at laparoscopic procedures is a function of the skill and experience of the operator in working in a two-dimensional environment. Early in our experience with laparoscopic surgery many of us experience the difficulties that Airan and Santos describe in retrieving suture with any size grasper due to the lack of depth of field. As we became more experienced and competent in our field the retrieval of suture with various sized needle-tip suture graspers has become an easy task.

As the retrieval end of the Carter–Thomason device operates as a grasping tool, it is very simple to retrieve sutures with this device. The Carter–Thomason Needle

## Fascial Closure Guide:

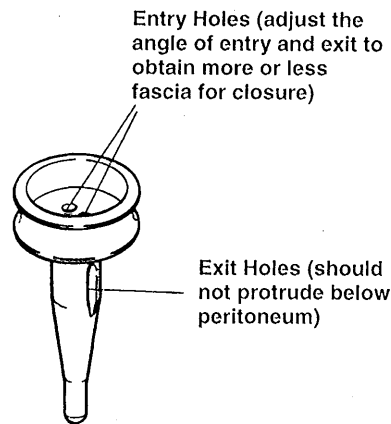


Figure 5.

## Procedure For Fascial Closure

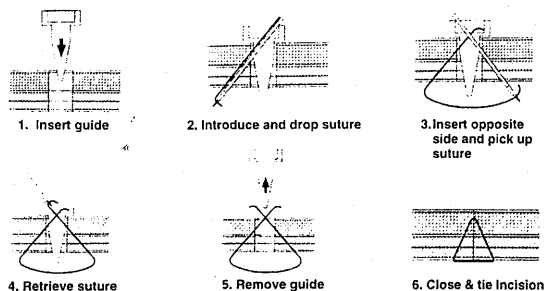
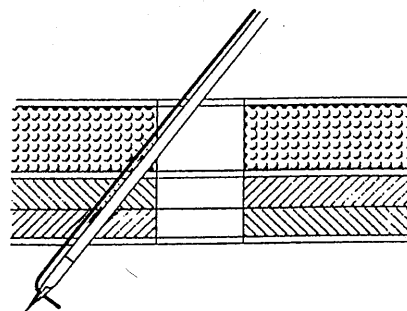


Figure 6.

Point Suture Passer is also available in a 2 mm diameter 9 inch (14.4 cm) length for use in preperitoneal uterine suspensions for deep dyspareunia and severe dysmenorrhoea (reference 2) as well as laparoscopic retroperitoneal bladder suspensions for stress incontinence.

In conclusion the Carter–Thomason Needle Point Suture Passer has the following advantages over the devices described by Airan and Santos:

- 1 Proven success in the hands of over 750 users including Camran Nezhat, Farr Nezhat, Joel Childers, Charles Koh, Grace Janik, James Daniell and James Presthus.
- 2 A true opening tip which prevents pass pointing of a sharp tip past the suture to be grasped.
- 3 A combined obturator/guide system to ensure the proper amount of fascia is obtained for secure closure.
- 4 A handle design which allows the thumb port to freely rotate independent of the finger ports allowing a completely ergonomic grasp of the instrument.
- 5 A 5 mm guide which allows closure of 5–8 mm port sites.
- 6 It can be used for control of abdominal wall vascular injuries (Figure 7).
- 7 With the 2 mm extended length version, it can be used



Epigastric vessel closure can be accomplished with or without guide

Figure 7.

easily for preperitoneal uterine suspension procedures, laparoscopic retropubic bladder suspension procedures as well as for passing suture through tissue as a standard needle point to allow suture ligation of vessels and tissues during operative laparoscopy.

The Carter–Thomason device was granted US Patent No. 5 496 335 for its combined characteristics of needle-point tip and suture grasper for use in laparoscopic surgery. It is precisely made to the specifications of US trained aeronautical engineers of extremely durable, highest quality stainless steel. Over the past four years and over 4000 fascial closures with this device, I have yet to experience a failure of closure or any of the problems described by Drs Airan and Santos, and the device is yet to require any service or repair.

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