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ADVANCING SURGICAL CARE

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Technical Section [TECHNICAL NOTES AND TIPS

An inexpensive novel training model for simulated laparoscopic appendicectomy training

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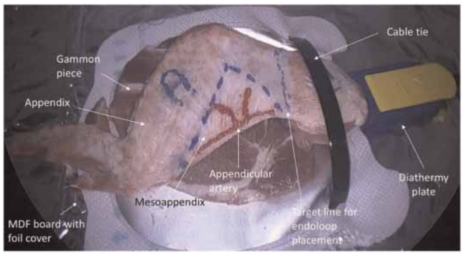

Figure 1 Completed appendicectomy model with labels for appendix (A), caecum (C; visible under cable tie) and mesoappendix. The specimen is secured on the diathermy plate by cable ties passed through a perforation in the MDF board. Appendicular artery and target line for endoloop placement are drawn on the model.

BACKGROUND

Modern surgical training places emphasis on simulation outside of the operating theatre and laparoscopic appendicectomy is no exception.[1] However, available models can be expensive and inaccessible for some trainees.[2] Junior surgeons have reported that the most difficult step of laparoscopic appendicectomy is the division and ligation of the mesoappendix and appendicular vessels.[3] Commercial synthetic appendicectomy models do not allow energy device practice of this crucial step and the available animal tissue models can only be used in wet-lab settings.[2] We describe a training model that is inexpensive, easy to replicate and overcomes these limitations.

TECHNIQUE

Perforated medium-density fibreboard (MDF) is covered with kitchen foil as a reusable base plate. Supermarket-grade gammon steak is used to secure a diathermy pad connection. Food-grade chicken wings are strapped to the board using cable ties. A permanent marker is used to delineate the model 'mesoappendix' on the fleshy border of the wing. The appendicular vessels and a target for endoloop application are drawn onto the model. Hence, the model is divided into mock 'caecum', 'appendix' and 'mesoappendix' (Figure 1). Assembly takes 2 minutes and costs £0.40. The model is inserted into any box trainer and the trainee practices hook dissection, clipping and energy device control of appendicle artery and endoloop placement (Figure 2).

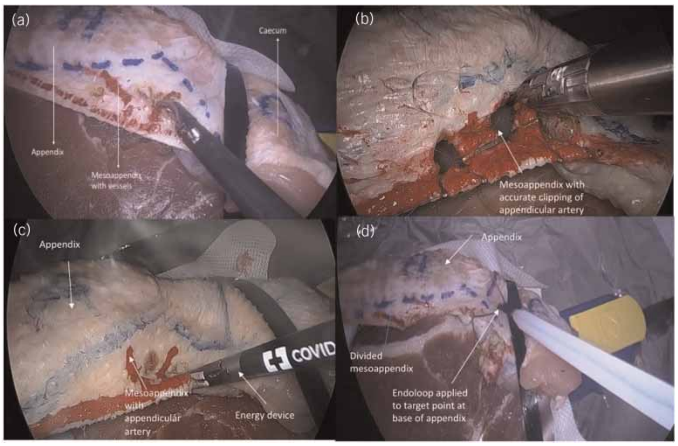

Figure 2 (a) Appendicular artery dissected and controlled with bipolar diathermy forceps. (b) Precise clipping or branches of appendicular artery. (c) Control of mesoappendix with energy device. (d) Endoloop placement on target line.

DISCUSSION

We have described the construction of a simple, low-cost, replicable and efficient model for teaching challenging key steps of laparoscopic appendicectomy which we tested successfully with ten trainees. We suggest testing its validity in a larger sample group and on relevant courses.

References

1. Ashley SW. Surgical skills training and simulation. *Curr Probl Surg* 2009; **46**: 263–270.
2. Roberts KE, Bell RL, Duffy AJ. Evolution of surgical skills training. *World J Gastroenterol* 2006; **12**: 3219–3224.
3. Jaffer U, Cameron AE. Laparoscopic appendectomy: a junior trainee's learning curve. *JSLS* 2008; **12**: 288–291.

A novel technique for traction table set up in extracapsular hip fractures to overcome fixed flexion deformities of both hip and knee

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BACKGROUND

To achieve on-table limb traction traditionally, a supine patient has the uninjured limb in a lithotomy position. The injured limb is extended at the hip and knee; with traction and internal rotation applied via a boot strapped to the operated foot, allowing reduction of the fracture.

Fixed flexion of the hip and knee presents a logistical challenge of surgeons needing to perform traction-dependent procedures such as dynamic hip screw (DHS) fixation. Combined fixed flexion of the non-operated side presents a greater logistical difficulty as it prevents appropriate C arm positioning for fluoroscopy. Modification of C-arm positioning, as well as remote skeletal traction help to overcome these difficulties. Figure 1 shows the traditional patient position for DHS fixation.

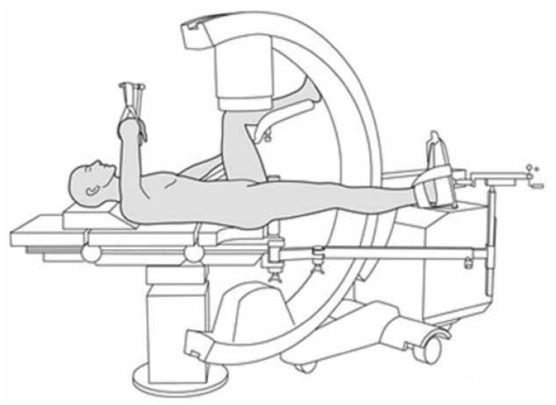

Figure 1 Traditional patient position during DHS: taken from AO surgery reference https://surgeryreference.aofoundation.org/orthopedic-trauma/adult-trauma/proximal-femur/femoral-neck-fracture-subcapital-displaced/orif-sliding-hip-screw#principles (cited October 2020). AO = ; DHS = dynamic hip screw.

TECHNIQUE

A Steinmann pin is inserted through the distal femur as an attachment point for traction. This is connected to a Bohler stirrup connected to the traction footplate (Figure 2).

Figure 2 Demonstration of the Bohler pin and stirrup positions. Taken intraoperatively with the patients consent.

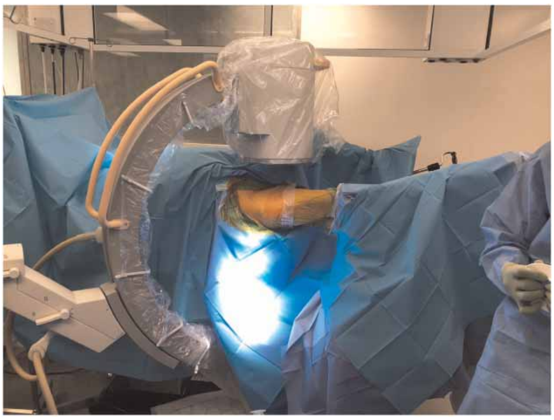

Figure 3 Demonstration of the image intensifier position. Taken intraoperatively with consent of the patient.