

A New Teaching Model for Laparoscopic Common Bile Duct Exploration: Use of Porcine Aorta[☆]

Nuevo modelo para el aprendizaje de la exploración laparoscópica de la vía biliar principal: uso de la aorta porcina

We used a defrosted porcine aorta segment as a simile of the human main biliary duct. After inserting several chick peas into the aortic lumen to represent gallstones, both ends were ligated and affixed to a cork sheet, which was then placed inside a standard laparoscopic training box. For the insertion of the choledochoscope, it was necessary to make a 15 mm longitudinal incision with the laparoscopic scissors to simulate a choledochotomy. This allowed for proximal and distal exploration, and the chick peas were able to be extracted with a dormia basket. Both the laparoscopic and endoscopic visions achieved were very similar to an authentic surgical setting (Figs. 1 and 2). The model was also used to practice laparoscopic placement of T-tube drains and for the suture of the “bile duct”. The students worked in pairs: one handled the choledochoscope, and the other the laparoscope and the dormia basket.

Discussion

Proper training in laparoscopic surgery requires practicing with experimental models before residents are able to perform



Fig. 2 – Choledochoscopy image: chick peas in the aorta lumen.

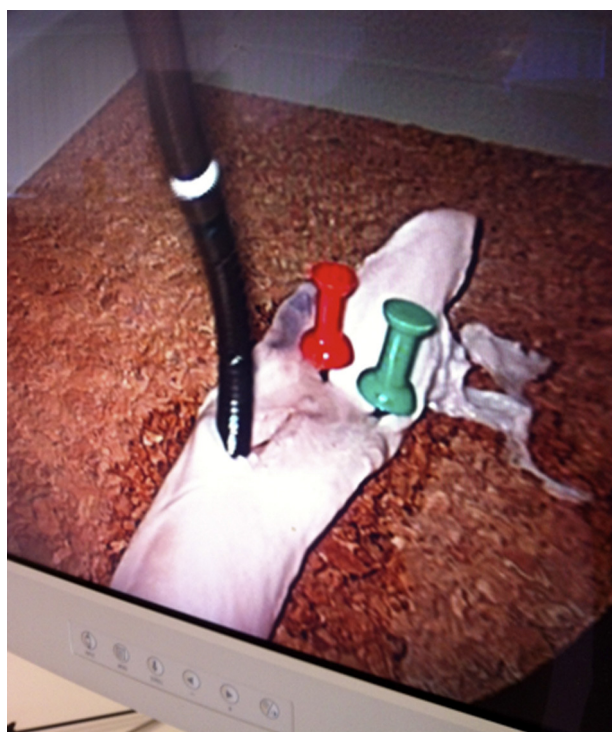


Fig. 1 – Choledochoscopy inside a defrosted porcine aorta.

laparoscopic surgical procedures in patients. Several simulation models of the main bile duct have been described with this objective.¹⁻⁴ Live animal models provide a more realistic setting, but they are expensive and involve ethical as well as legal implications. Canine inferior vena cava and saphenous veins have also been used.^{3,4} Currently, there are virtual models, but these are expensive and the tactile sensation is not the same as in actual surgery. The laparoscopic model that we report for learning bile duct exploration is inexpensive and easily available, while providing tissue manipulation that is very similar to real life. This enables students to practice not only the insertion of the choledochoscope, but also the extraction of calculi and primary closure or T-tube drain placement.

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Soft Tissue Sarcoma in the Thigh and Groin. Reconstruction using Vertical Rectus Abdominis Myocutaneous Flap[☆]

Sarcoma de partes blandas en muslo e ingle. Reconstrucción con colgajo miocutáneo vertical de rectus abdominis

Soft tissue sarcomas (STS) are non-epithelial malignant tumors of the extraskeletal tissue that can compromise the muscles, fat, fibrous tissue, blood vessels or other supporting tissues of the body. Treatment has changed from ablative procedures to more conservative surgical treatments.¹ Resective surgery that may or may not be associated with adjuvant therapy is the standard treatment, and amputation is only considered when it is not possible to obtain wide margins or achieve functional reconstruction of the limb.²

The thigh is the most frequent location of sarcomas of the legs. Resection of this type of tumors requires wide margins, and the large secondary defects do not usually close directly, or they are obtained with tension. These resulting defects are usually deep and frequently expose the femoral vessels. The resulting dead space is usually greater than in more distal resections and, in this region, the wounds usually have a higher percentage of dehiscence and infections. For this reason, reconstruction of this region requires sufficient tissue to fill the dead space, protect the femoral vessels and avoid closure with tension.^{3,4} Furthermore, radiation makes proper wound healing more difficult.

Vertical rectus abdominis myocutaneous (VRAM) flaps have been successfully used for the coverage of defects in the rib cage wall as well as the inguinal, perineal, vaginal and gluteus regions with good aesthetic and functional results. The advantage of the pedicled VRAM flap is that it provides an extensive cutaneous island, great thickness of soft tissue with an easily executable surgical technique, low rate of complications and high probability for success.⁵

We present 2 case reports of patients with STS in the thigh who underwent radical resection and reconstruction with VRAM flaps.

Case 1

The patient is a 63-year-old male who presented a mass in the left thigh that had been developing over the previous 3 months and was accompanied by pain and progressive growth. Upon examination, the tumor measured 10×10 cm and was located on the side of the left thigh.

MRI demonstrated a multilobular mass on the anterior side of the upper third of the thigh that measured 15.5×7.5×5 cm in the vastus lateralis. It was in contact with the bone and, located between it, the vastus intermedius, rectus femoris and the tensor fasciae latae, which were being compressed and displaced. The extension study found no data suggestive of malignancy.

FNA and Trucut biopsy of the mass provided positive cytology results for malignant cells and findings suggestive of pleomorphic sarcoma.

The patient underwent radical surgical resection with margins of the anterior compartment of the left thigh and anterior cortical of the femur. Bone reconstruction was performed using a free fibula flap with end-to-end anastomosis of the fibular pedicle to a branch of the superficial femoral package (1 artery and 2 veins). Coverage was created with a pedicled VRAM flap with the inferior epigastric vessels (Fig. 1).

Follow-up MRI done 2 years later showed no evidence of signal alterations in the bone. No differences were observed between the two femoral heads, with preserved morphology

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