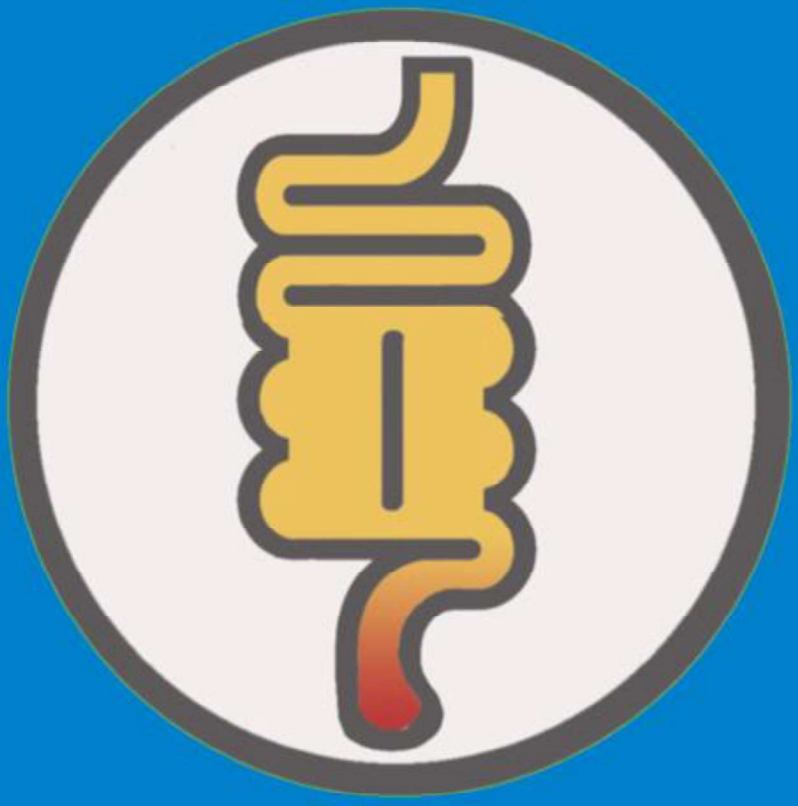


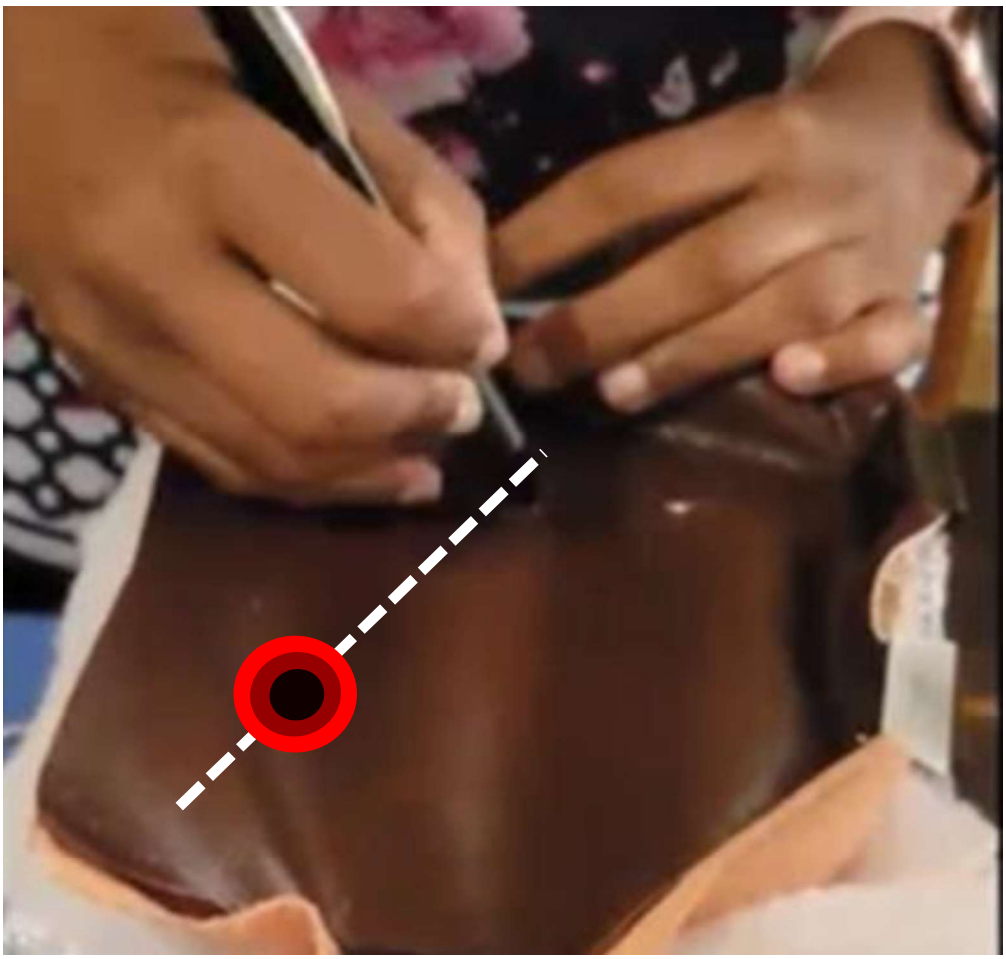
Simulation Training

Safe Abdominal Entry

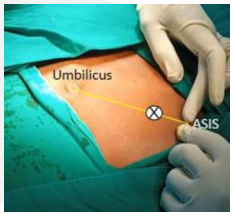
AMPATH Surgical App

1 | Identify McBurney's Point

A. Draw the line from the right anterior superior iliac spine (ASIS) to the umbilicus.
B. Identify the point of max tenderness (or McBurney's point).



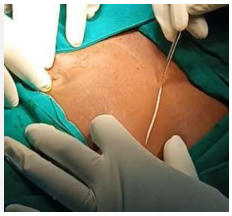
Live Procedure Review



2 | Skin Incision

Using a scalpel make a 4-6 cm incision along lines of Langer that is bisected by the point of interest.

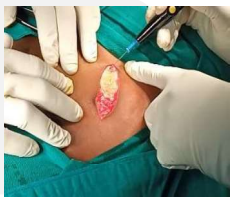
Live Procedure Review



3 Soft Tissue Dissection

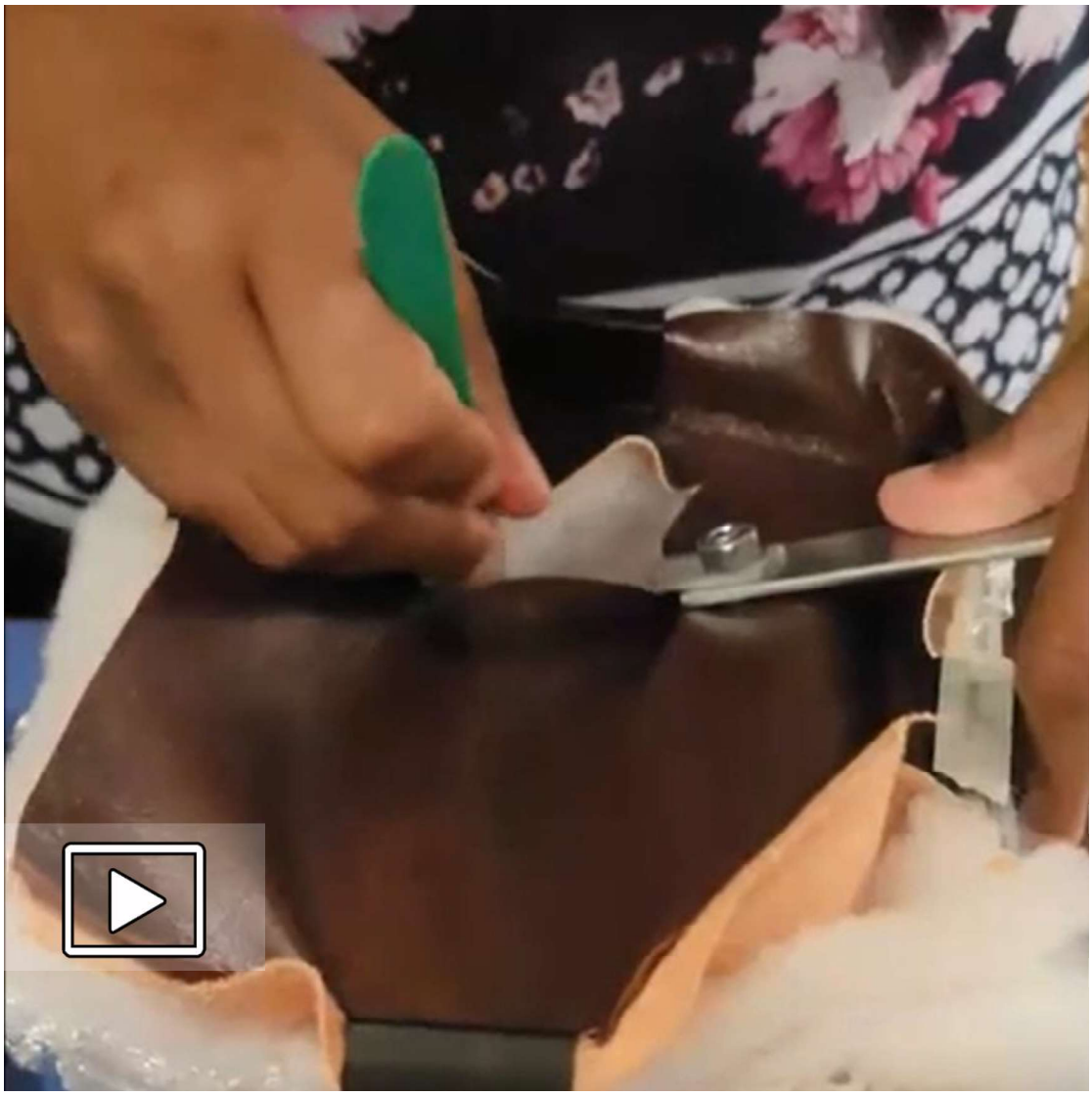
Use sharp dissection. There will be two layers including a fatty layer and then a membranous layer (Scarpa's). There may also be a small layer of fat below the membranous layer.

Live Procedure Review

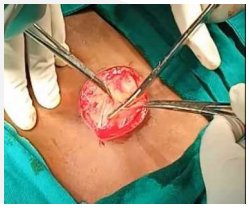


4 | Aponeurosis Layer

Incise the external oblique aponeurosis The fibers point medially to inferiorly.



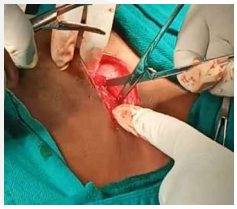
Live Procedure Review



5 | Muscle Dissection

The first layer of the muscle to be dissected is the **external oblique**. Its fibers run parallel to the incision. To dissect through the muscle, you will put a haemostat into the muscle and bluntly spread it along the pattern of the muscle fibers to create an opening wide enough to fit two army-navy retractors. You will then place the retractors into the opening and pull to continue to spread the opening along the length of the muscle.

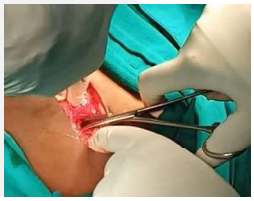
Live Procedure Review



6 Muscle Dissection Continued

The second layer of the muscle to be dissected is the **internal oblique**. Put a haemostat into the muscle and bluntly spread it along the pattern of the muscle fibers to create an opening wide enough to fit two army-navy retractors. You will then place the retractors into the opening and pull to continue to spread the opening along the length of the muscle.

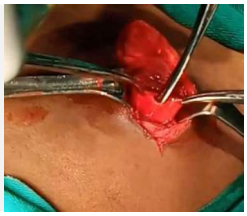
Live Procedure Review

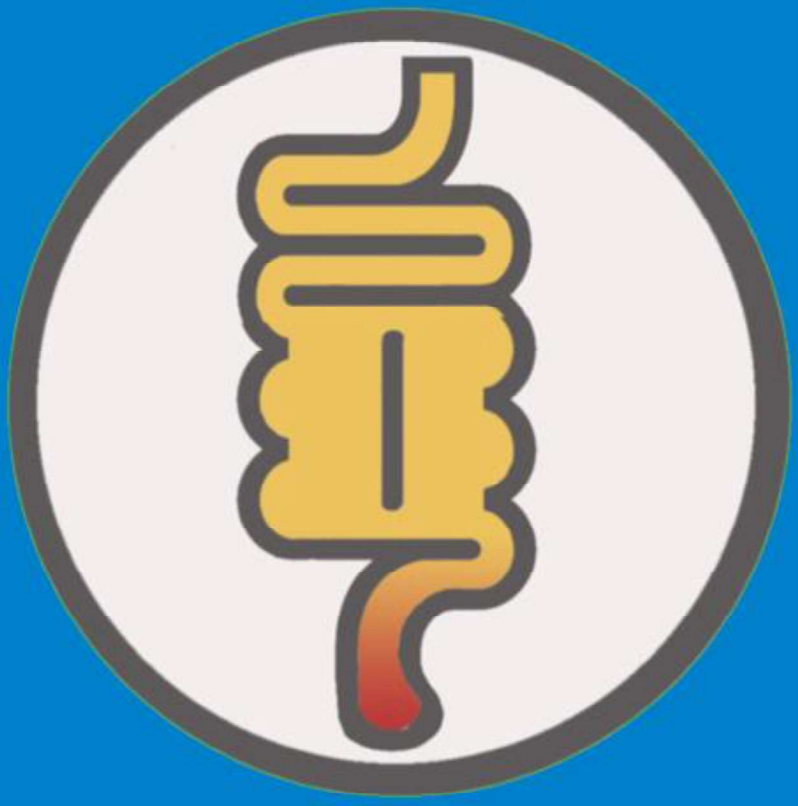


7 Peritoneum

Grasp the edge of the peritoneum with a haemostat and elevate it and place a second haemostat 5 mm away from the original. Then palpate the elevated peritoneum to ensure there is no bowel or omentum within the contents and then sharply incise it.

Live Procedure Review





Simulation Training

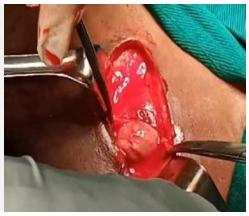
Identification of the Appendix

AMPATH Surgical App

1 | Obtaining Proper Visualization

Retract the muscles with two army-navy retractors by tucking in the retractor under the peritoneum and elevating the muscle.

Live Procedure Review

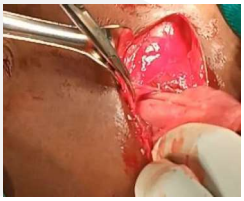


2 | Identify the Cecum

Visualize the anterior taenia coli. Follow the taenia coli inferiorly to the base of the appendix. The cecum appears a lighter pink than the redder small bowel.

Need New Image/Video

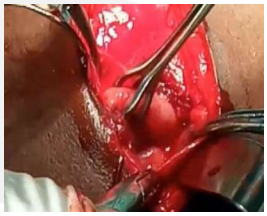
Live Procedure Review



3 Deliver the Cecum

Grasp the cecum with a Babcock and using the Babcock in the left hand and the thumb and index in the right hand deliver the superior aspect first by retracting inferiorly and then the inferior portion by retracting superiorly.

Live Procedure Review

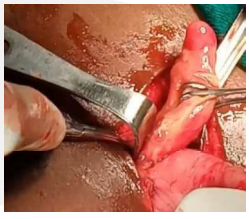


4 Identify the Appendix

Follow the taenia coli where all 3 converge at the base of the appendix and atraumatically grasp the appendix within the Babcock such that it encases the appendix. Confirm the identity of the appendix by identifying attachment to the cecum and identification of the terminal ileum.

Need New Image/Video

Live Procedure Review



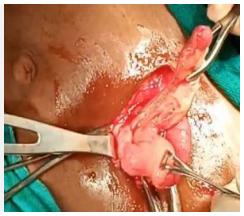
5 | Assess the Appendix

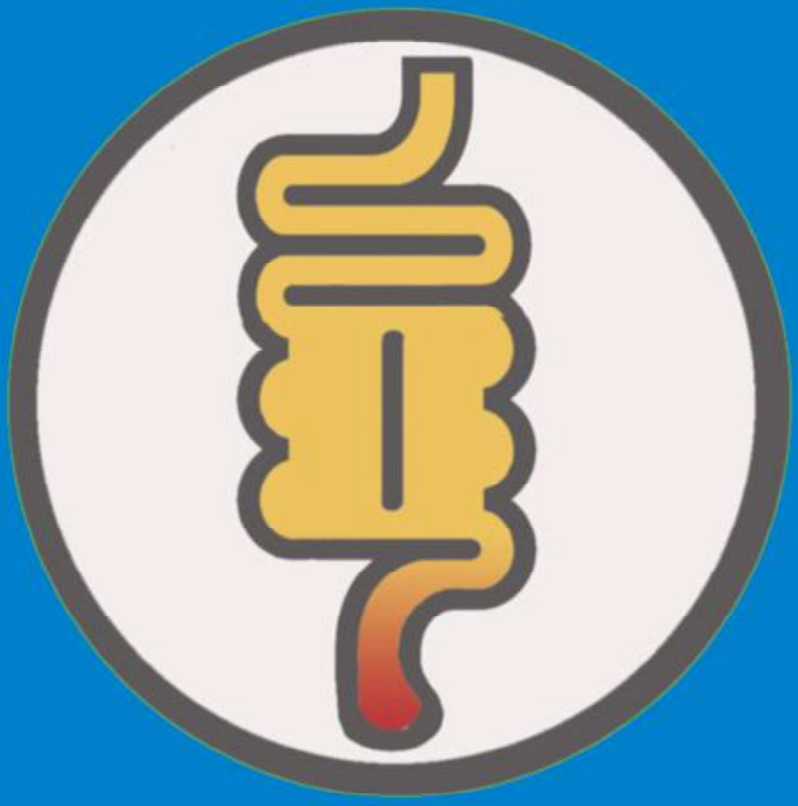
Determine the extent of pathology of the appendix to determine next steps of the procedure.

- Inflamed Appendix: Complete the appendectomy
- Gangrenous Base: Assess if there is enough healthy cecum. If so, complete the appendectomy; if not, consider cecectomy or right hemicolectomy
- Caecal tumour: Close the patient and write your operative note. Send the patient and the operative note to the referral centre for oncologic resection.

Need New Image/Video

Live Procedure Review





Simulation Training

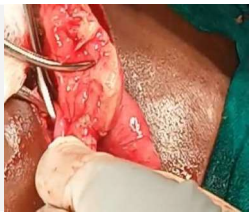
Appendectomy

AMPATH Surgical App

1 | Identify the Mesoappendix

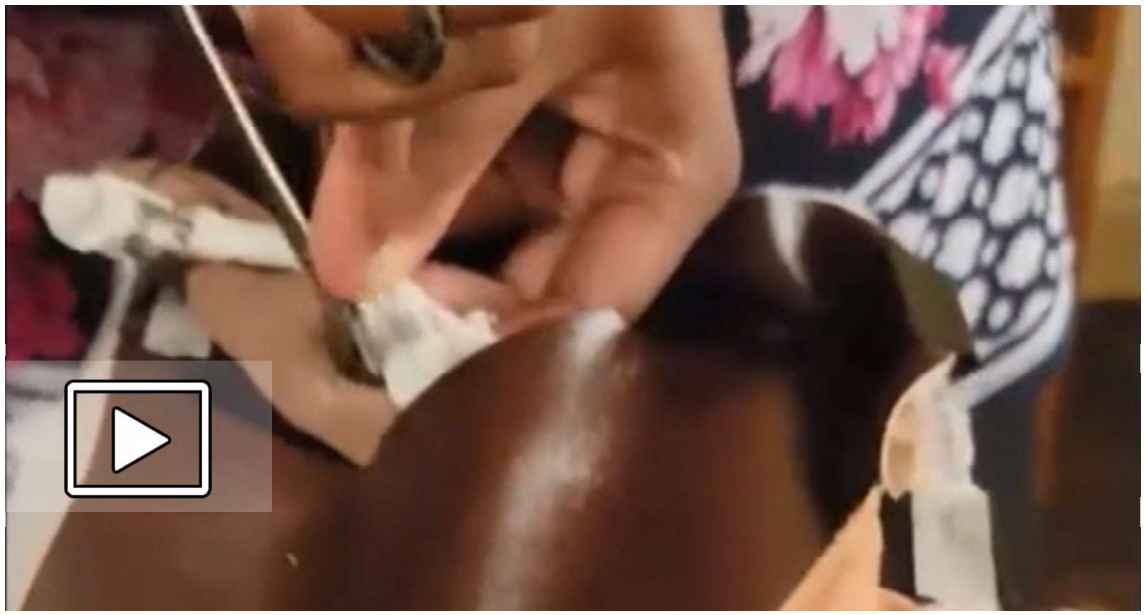
Identify the mesoappendix. The mesoappendix contains the appendiceal artery.

Live Procedure Review

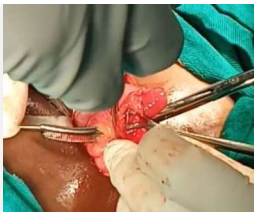


2 | Create a Window

Create a small window within the mesoappendix near the base of the appendix by using a haemostat with the curve of the haemostat follows the curve of the appendix. Gently insert the haemostat tips into the mesoappendix near the base of the appendix and slowly spread, remove the haemostats while they are still open and repeat until you have created a window within the mesoappendix.



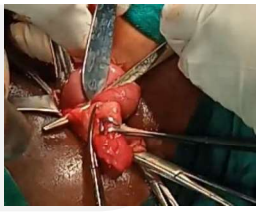
Live Procedure Review



3 | Clamp the Mesoappendix

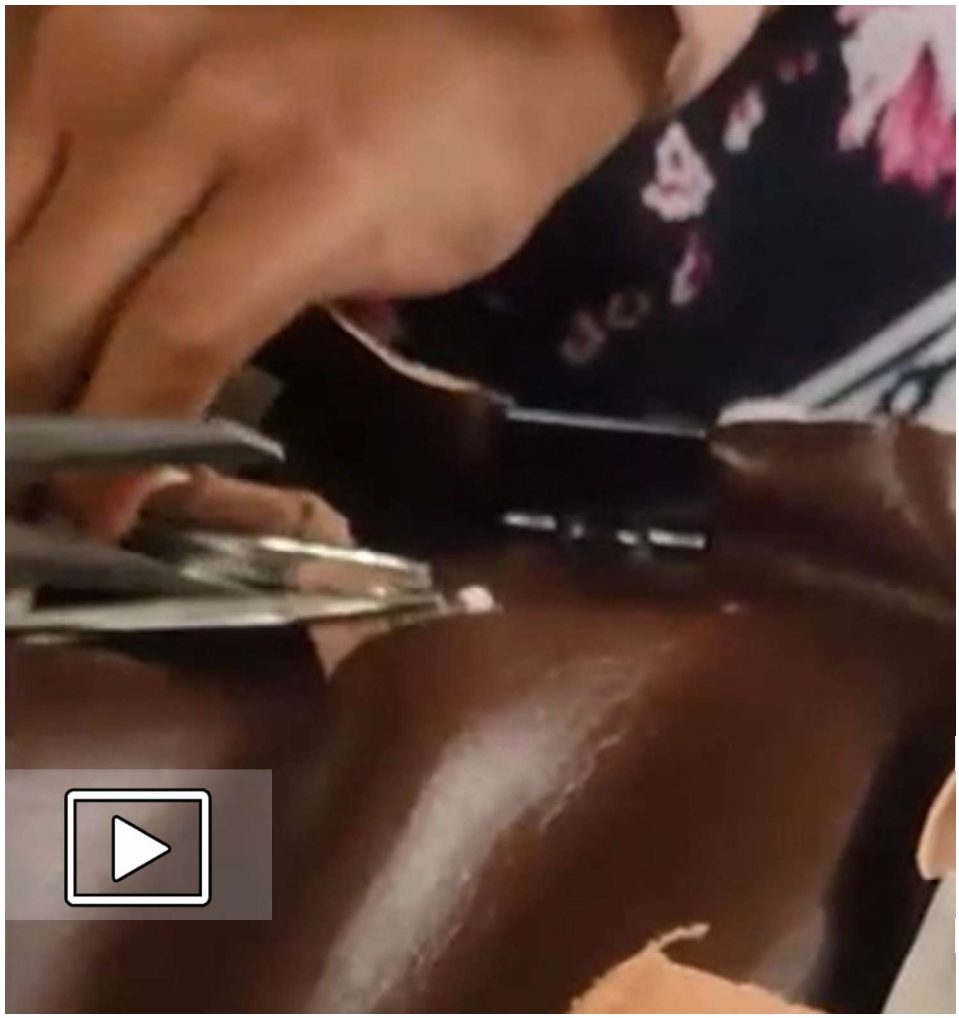
Clamp the portion of the mesoappendix proximally near the base of the appendix with a haemostat. Clamp the portion of the mesoappendix distally near the end of the window with another haemostat.

Live Procedure Review

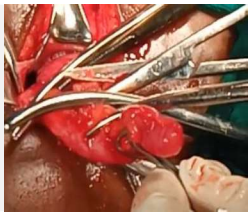


4 | Cut the Mesoappendix

Using Metzenbaum scissors, divide the mesoappendix between the haemostats but leave the haemostats in place.



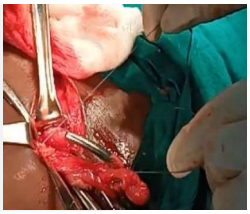
Live Procedure Review



5 | Ligate the Mesoappendix

Using the end of your 2-0 vircyl, pass the suture around the haemostat, bring the suture down to the clamp in a tip-to-tip fashion which will allow the suture to be hooked under the clamp and throw your first knot.

Live Procedure Review

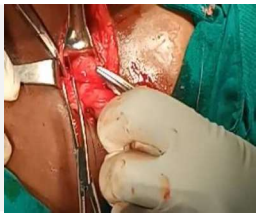


6 | Remove Proximal Clamp

After your knot has been tightened, ask your assistant to slowly remove the haemostat from the vessel to ensure haemostasis; complete a total of 3 knots for vicryl.

Need New Image/Video

Live Procedure Review

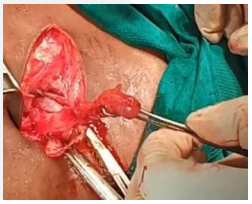


7 | Skeletonize Base of Appendix

Skeletonize the base of the appendix using blunt dissection.

Need New Image/Video

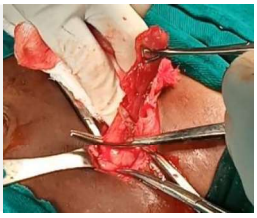
Live Procedure Review



8 Place a Distal Clamp on the Appendix

Clamp the appendix 5 mm from the base with a Kelly clamp. Now, place another Kelly clamp 3-5 mm distally along the appendix with enough space to fit a scalpel in between the two clamps

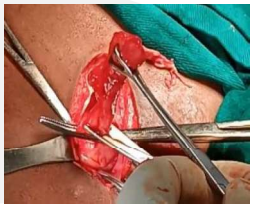
Live Procedure Review



9 Excise the Appendix

Excise the appendix in between the clamps with a scalpel or scissors. Remove the specimen from the abdomen.

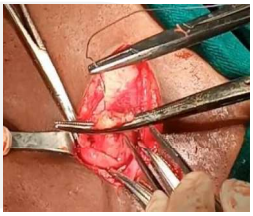
Live Procedure Review



10 | Suture Ligate Base of the Appendix

Suture ligate the base of the appendix. If cecum appears to friable, you may have to run a suture through healthy cecum to prevent fistula formation.

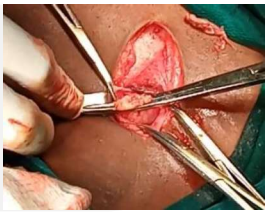
Live Procedure Review

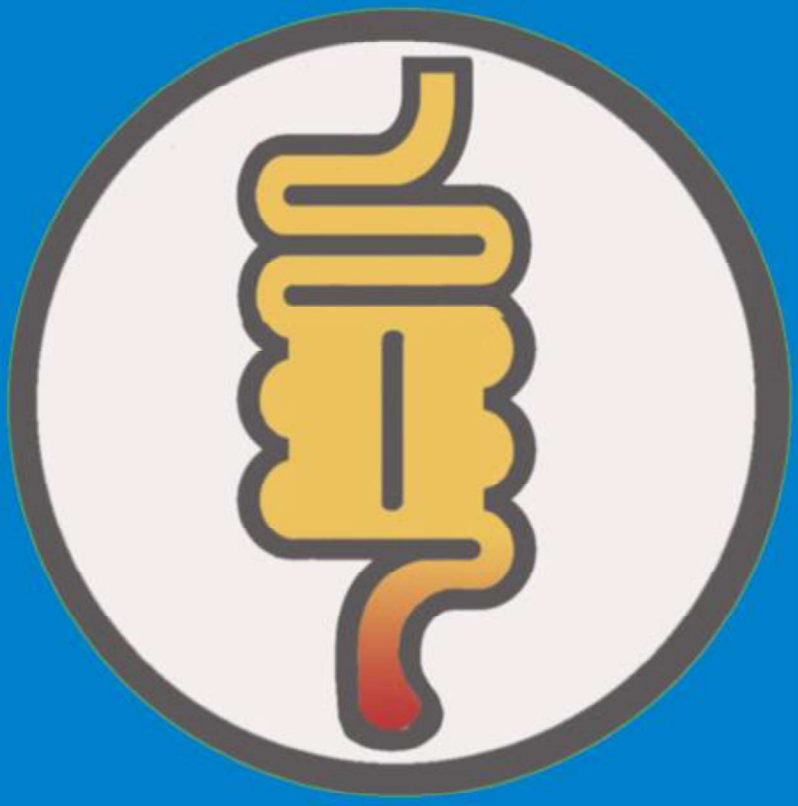


11 Inspect the Appendiceal Stump

Inspect the appendiceal stump. If stump appears intact, no further steps are necessary. If the base of the appendix is very indurated: Bury the stump using the remaining 2-0 vicryl, place a purse string around the base of the appendix.

Live Procedure Review





Simulation Training

Abdominal Closure

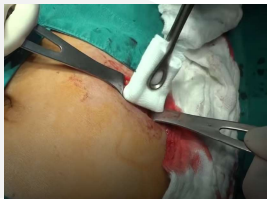
AMPATH Surgical App

1 | Final Abdominal Inspection

Ensure haemostasis of the mesoappendix prior to placing the cecum and ileum back into the abdomen. Inspect the pelvis by placing a suction into the pelvis to ensure no purulence.

Need New Image/Video

Live Procedure Review



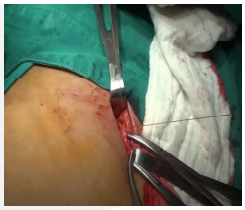
2 | Closure of External Oblique Aponeurosis

Remove retractors slowly, inspecting for haemostasis within the muscles. If there is bleeding, temporize with diathermy.

Close the external oblique aponeurosis with a 0-vicry running suture.

Need New Image/Video

Live Procedure Review

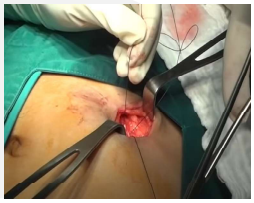


3 | Close Scarpa's Layer

Close the membranous layer (Scarpa's) with the remaining 0-vicryl suture.

Need New Image/Video

Live Procedure Review



4 | Close Skin Incision

Use interrupted sutures if the appendix was grossly purulent. Space sutures approximately 1 cm apart.

Need New Image/Video

Live Procedure Review