

Ventral Hernia Repair

Key Simulated steps and operative Principles

1. The tough pig skin simulates tissue quality of fascia

Intraop step	Simulated step
Creating fascia flap for hernia repair	Creating a flap of pig skin which simulate the fascia quality
Parachuting mesh to repair hernia in a underlay fashion	Parachuting mesh over the pig skin defect which simulate fascia defect or hernia

Goals and Objectives

1. Describe how to perform a ventral hernia repair using the mesh underlay (sublay) technique
2. Use tension and counter tension to perform proper dissection for creation of fascia flap
3. Precisely suture mesh to fascia in a deep space without injuring abdominal contents
4. Demonstrate how to use abdominal instruments including Kochers, Ferris Smith forceps and retractors

Required Materials and Costs

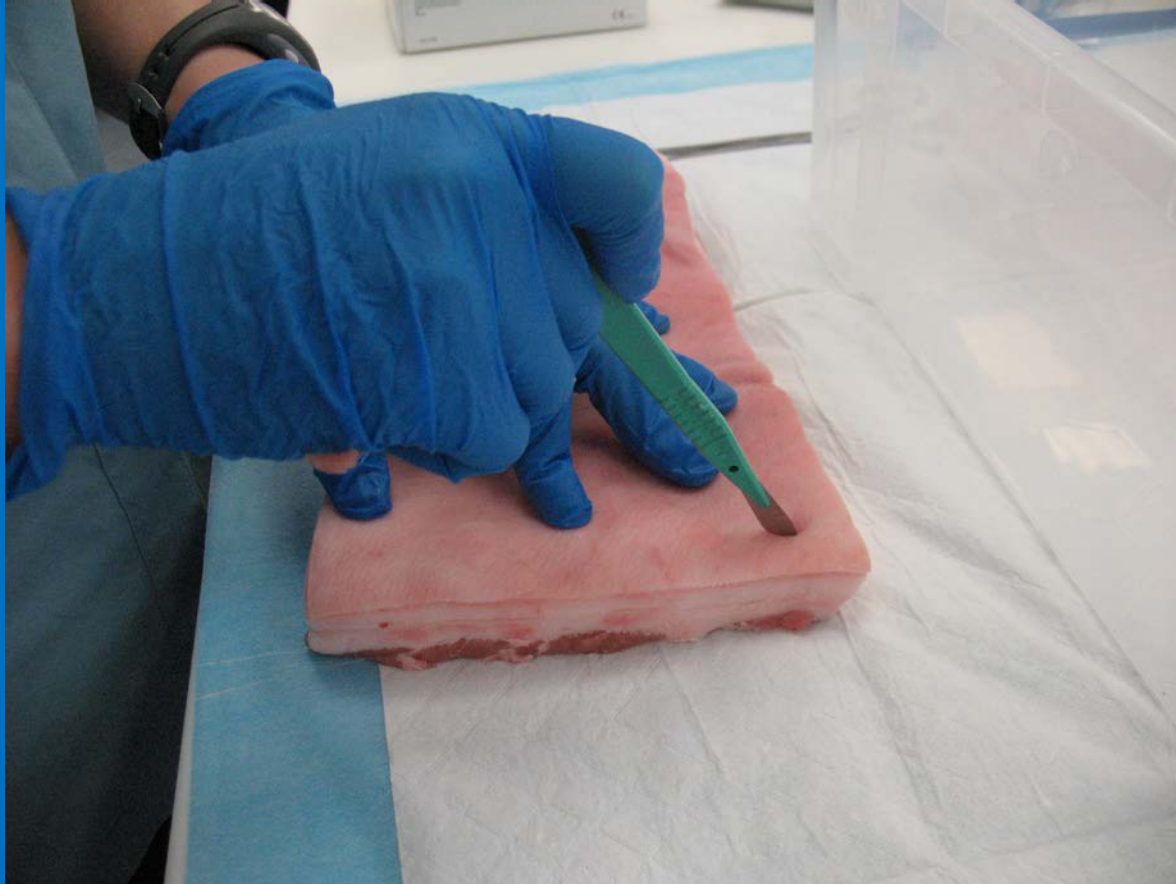
- Pork side 6x8 inches (1 per learner)
- Bovie pad
- Bovie spatula
- 12 inches cable ties
- Tube balloons
- Large binder Clip
- Tie cutter
- Plyer
- Office Scissors
- Extension cords for each Electrocautery unit
- Floor Fans
- 9L Really Useful box
- Electrocautery unit
- Ruler
- Skin pen
- Scalpel #3 handle, Blade #10
- Ferris Smith Forceps x2
- Adson x2
- Metz
- Kocher x2
- Straight Mayo
- Needle Driver 7"
- Senn Retractor x2
- Rankin x8
- #1 GS-21 Novafil pop off #8886-4454-73
- Mesh 14cm x8 cm (can substitute with window screen)

Setup Step 1



Drill holes on the sides of a plastic box (ex: 9L Really Useful box, 6 1/16"H x 15 9/16"W x 10 1/16"D)

Setup Step 2



Insert four holes at the four corners of pork side

Setup Step 3



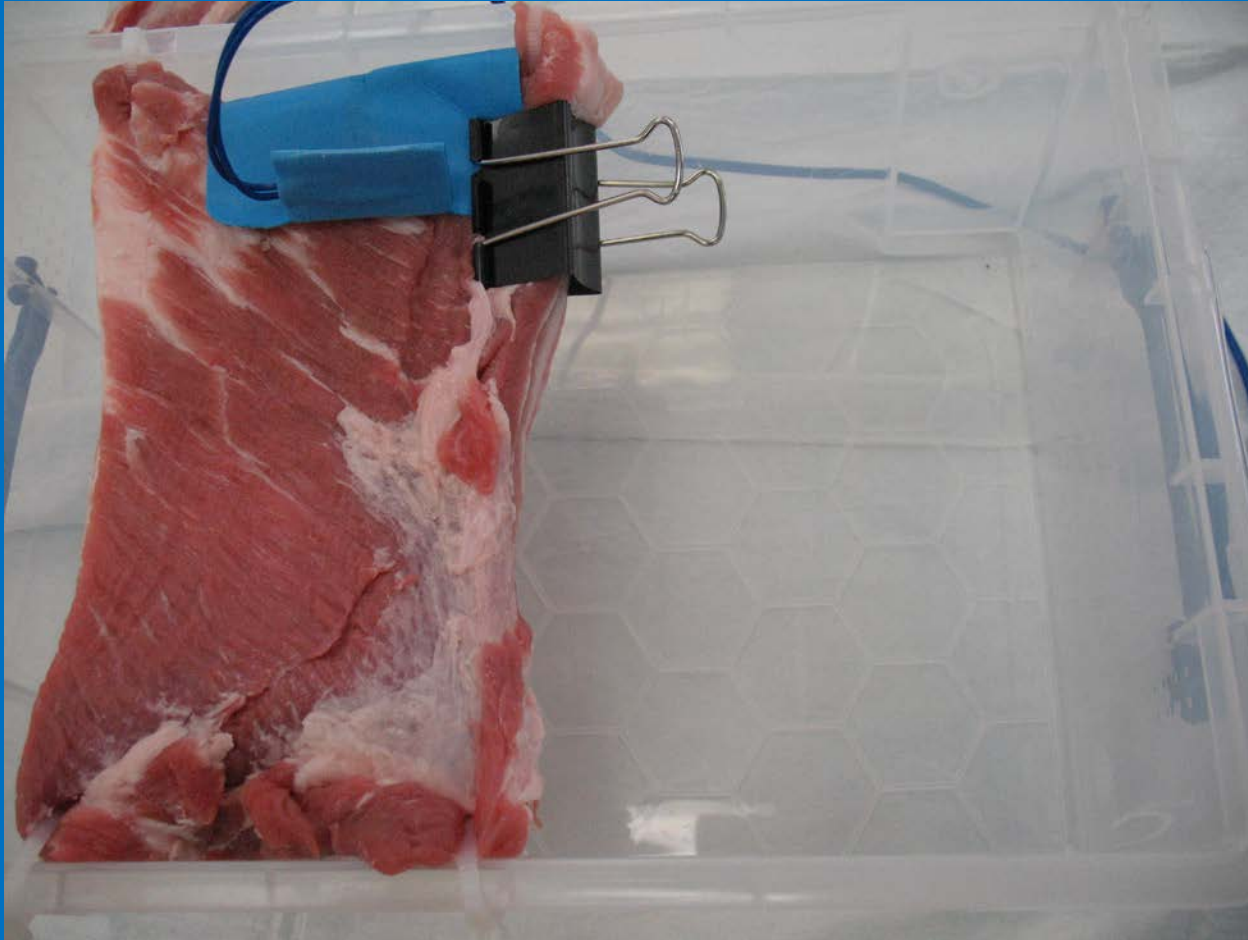
Excise 6 cm x 2 cm elliptical skin, the resulting defect will be the hernia defect

Setup Step 4



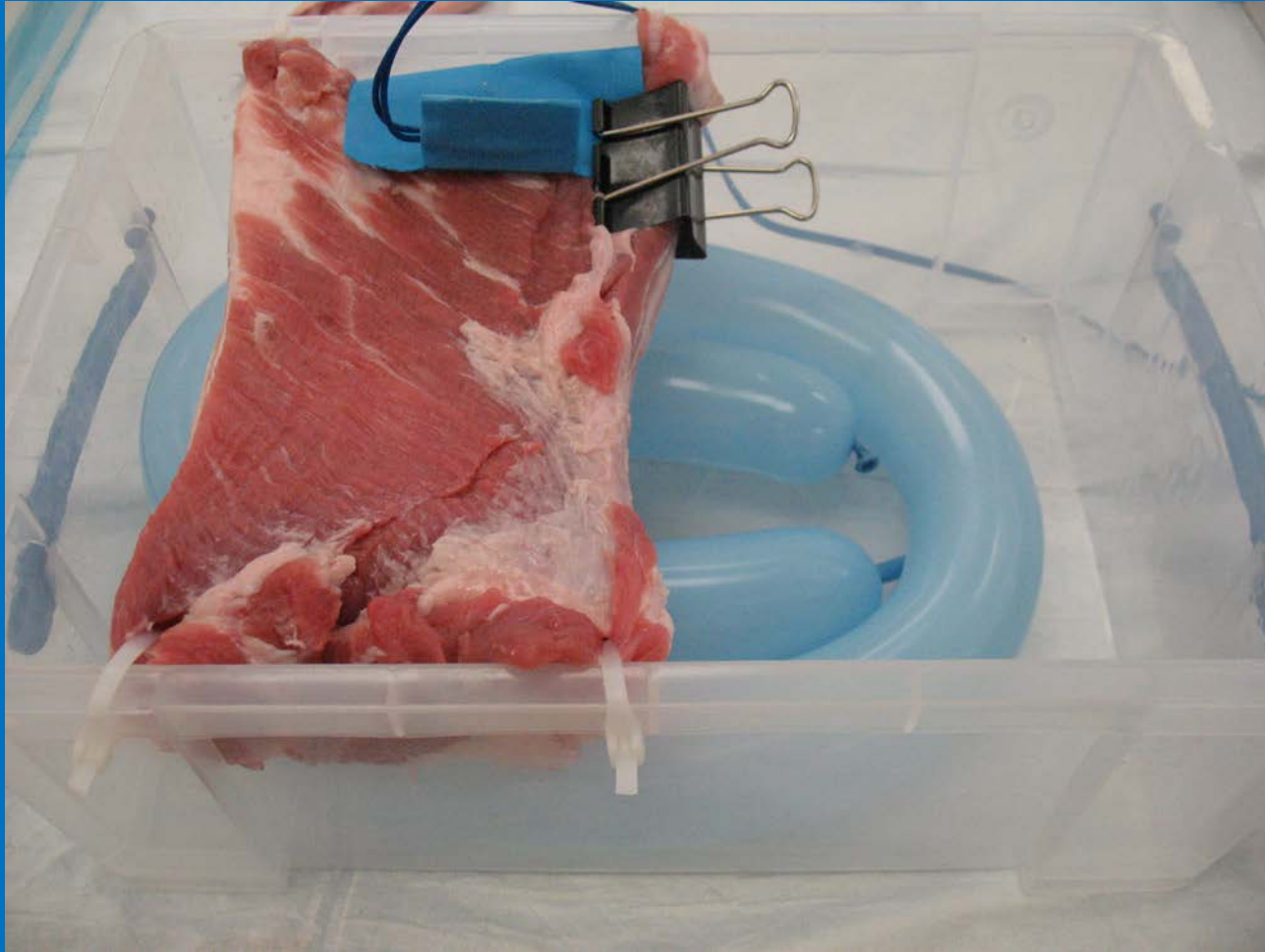
Suspend pork side skin side down using cable ties (recommend ≥ 12 inches) through the drilled holes on the side of the box

Setup Step 5



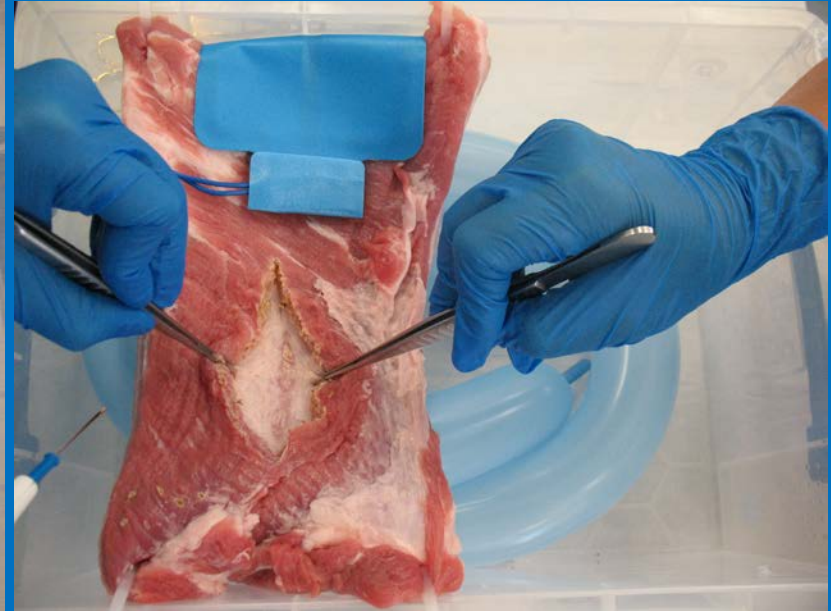
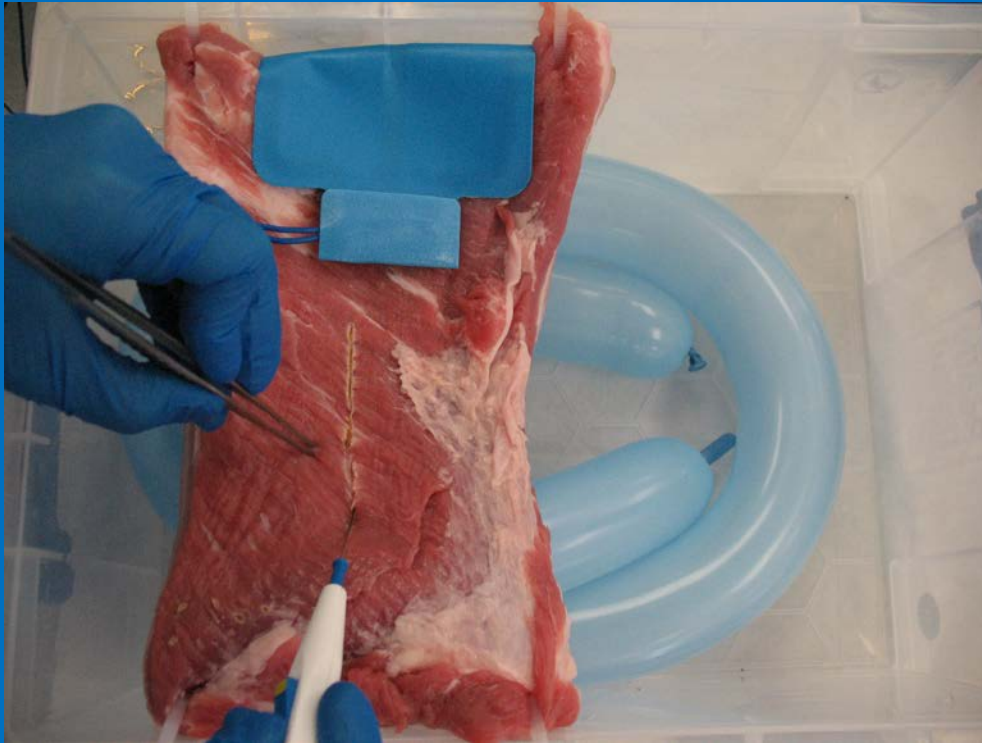
Clip and secure Bovie pad to the side of the pork side

Setup Step 6



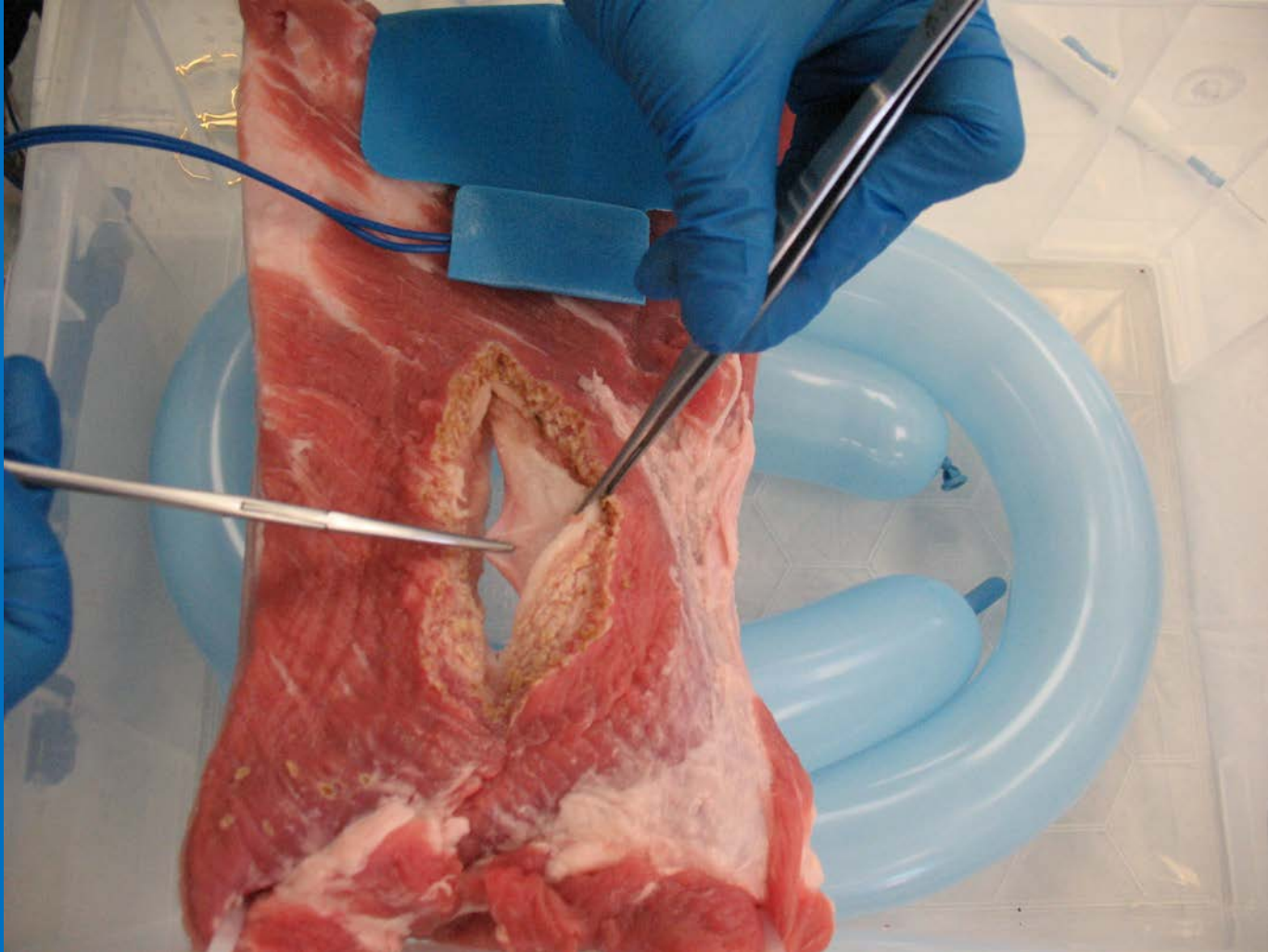
Place an inflated balloon tube underneath the suspended pork side which represent intraabdominal contents

Procedure Step 1



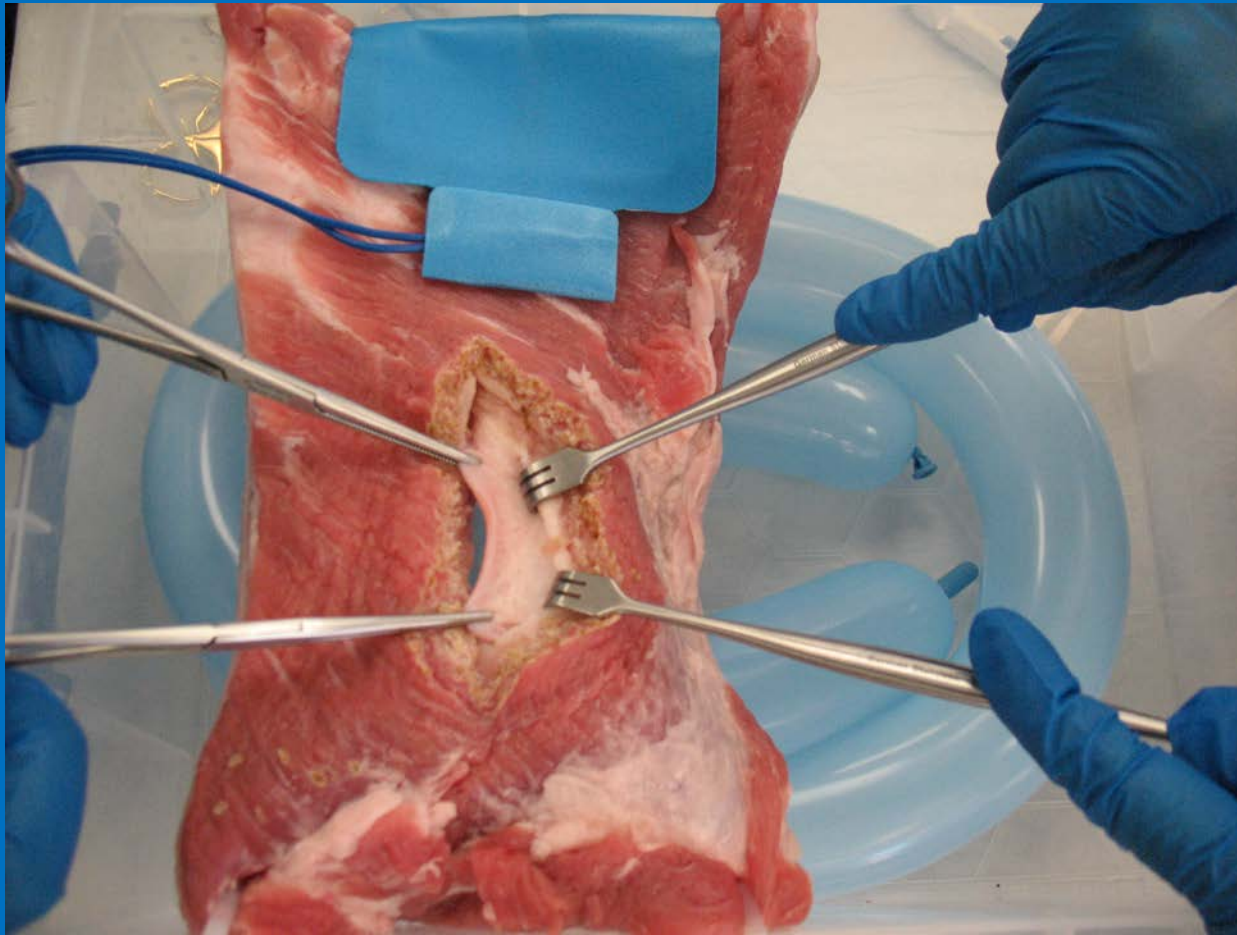
Incise and divide the muscle

Procedure Step 2



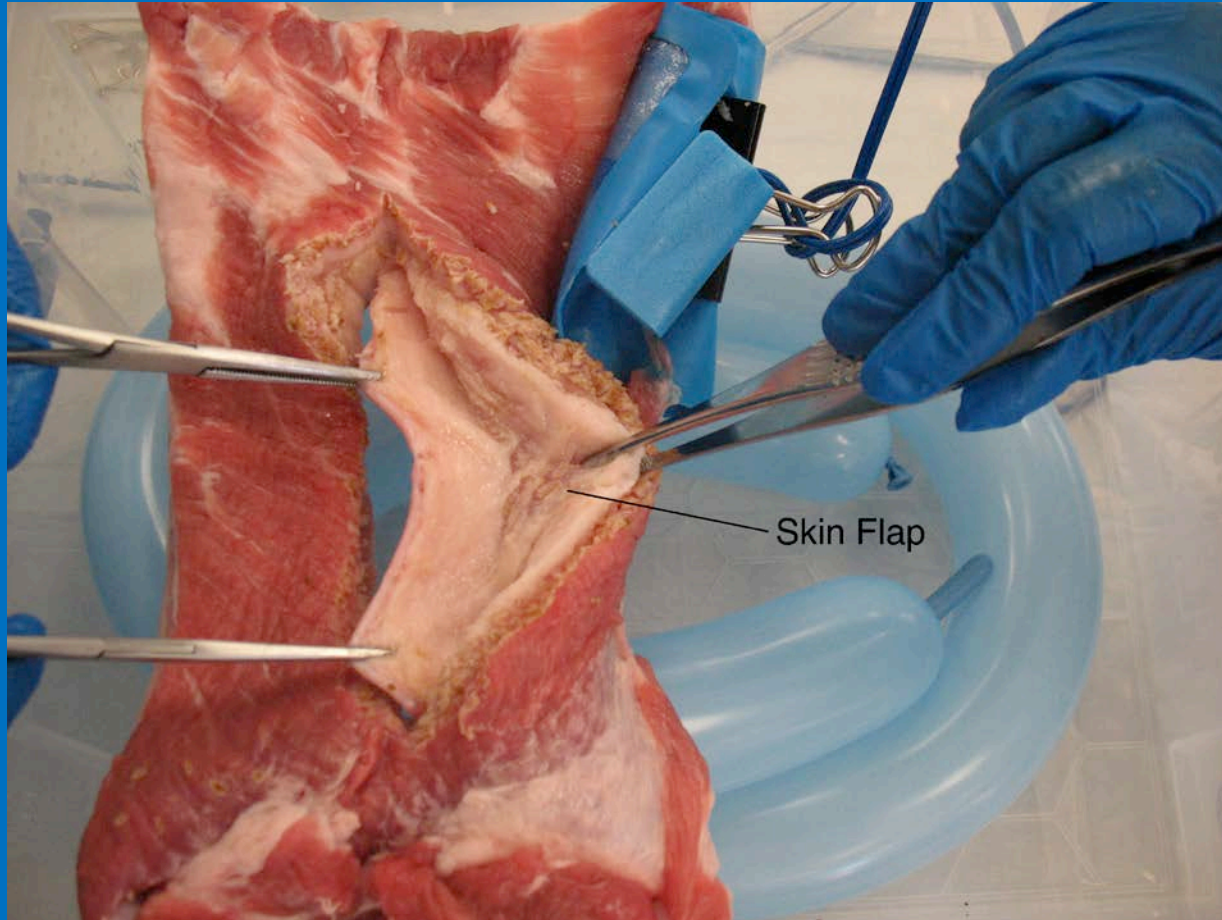
Dissect down to subcutaneous fat and skin (fascia)

Procedure Step 3



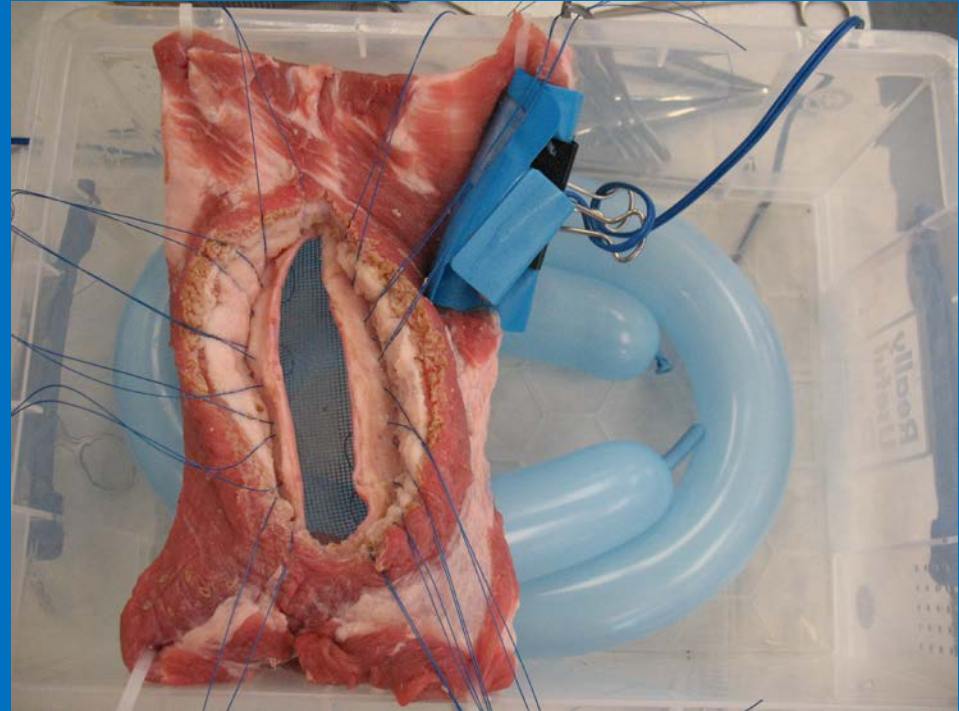
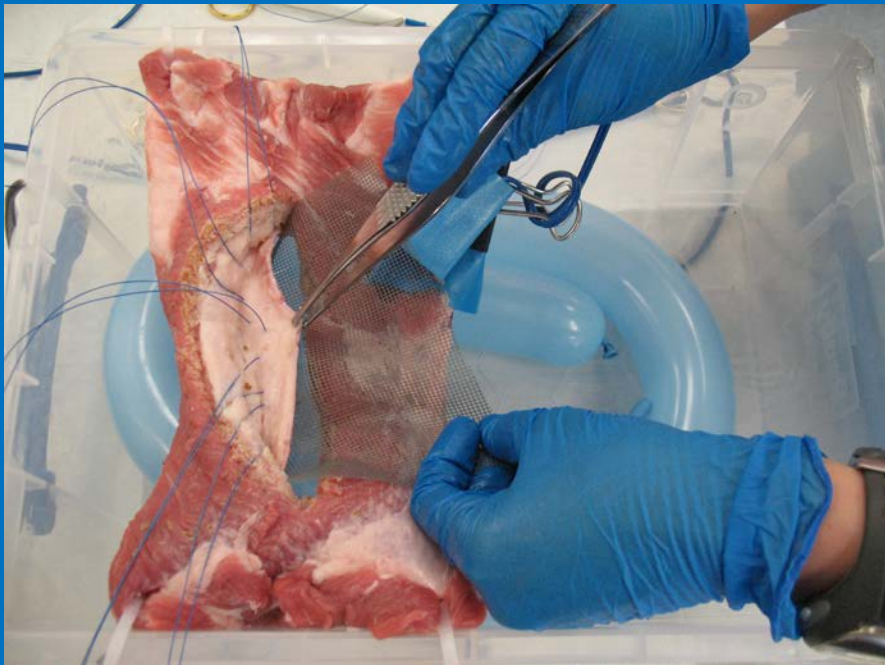
Identify the skin edges and the defect

Procedure Step 4



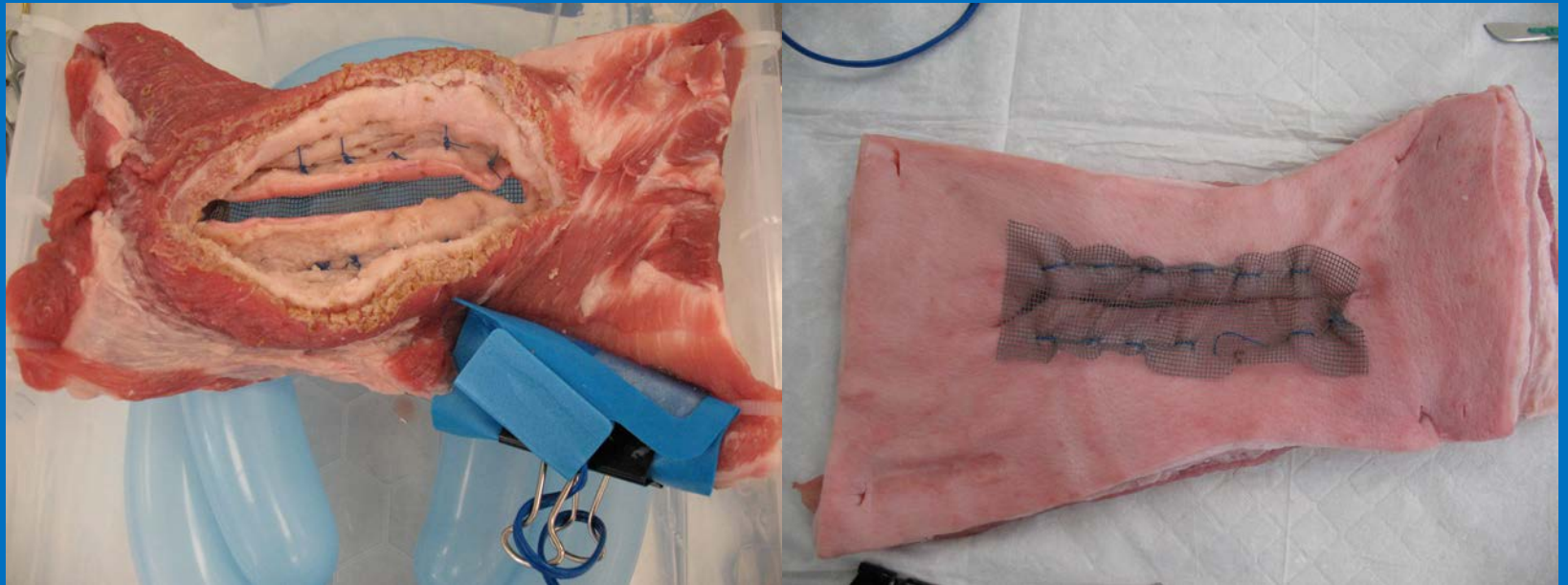
Create skin flap circumferentially in preparation for hernia repair

Procedure Step 5



Suture mesh to the skin/fascial flap leaving ends untied making sure 3-4 cm overlap of mesh and skin

Procedure Step 6



Tied down all sutures to complete repair

Checklist

- Use proper technique and help with assistant to dissect through the muscle
- Dissect down to the free skin edge without popping the balloon
- Create a skin flap circumferentially
- Securely suture the mesh with proper spacing
- Proper spacing to avoid folding or bunching up of the mesh as well as bowel herniation