

# A Model of Penetrating Ilio-Caval Trauma in Perfused Embalmed Cadavers

[Trauma Surgery](#)

## Presentation Description

**Institution:** James Cook University - Queensland, Australia

Introduction: Cadaver-based open surgical exposure courses are limited in their ability to realistically & reproducibly, model traumatic vascular injury and haemorrhage. Previous models of vascular perfusion have utilised fresh cadavers, which have limited longevity. In contrast, embalming cadavers is cheap, prevents decay & increases specimen longevity. Therefore, we sought to develop a model of perfused ilio-caval venous trauma in an embalmed cadaver. Methodology & Results: One cadaver embalmed with a formaldehyde-based solution was utilised. Laparotomy & right medial visceral rotation (MRV) exposed the inferior vena cava (IVC), bilateral common & right external & internal iliac veins. The right saphenofemoral junction (SFJ) was exposed via an infra-inguinal incision. Both renal veins & the supra-renal IVC were ligated. The femoral vein & all identifiable tributaries to the right ilio-caval venous segment were ligated. The SFJ was cannulated & connected to a pressurised fluid giving set. A customised water-based red-dye solution was used to perfuse the right ilio-caval system under low pressure via the giving set. A stab injury to the IVC was then created. Injury pattern & associated fluid extravasation rate were assessed by experienced Surgeons to ensure IVC injury & haemorrhage was accurately modelled. The right MVR was then closed. Penetrating injuries were then created with n=6 senior surgical trainees performing the ilio-caval venous exposure and injury repair in an informal 'Direct Observation of Procedural Skills' assessment style. Conclusion: The model described introduces a realistic and reproducible training simulation to prepare surgical trainees for exposure and management of penetrating IVC trauma.

## Presenters

[Dr Andrew Hattam](#)  
[Australia](#)

## Authors

Dr Andrew Hattam - Dr Roxanne Wu - Dr Merwe Hartsliet - A/Prof Alan De Costa -