

Renal vein and caval tumour thrombectomy

9 steps, each one the authored title and caption from the interactive animation, with the frame captured from that step. Read it before the case, or print it and work through the steps in order.

Teaching only, not for diagnosis or treatment decisions. The text on this sheet is the animation's own step copy, reproduced verbatim.

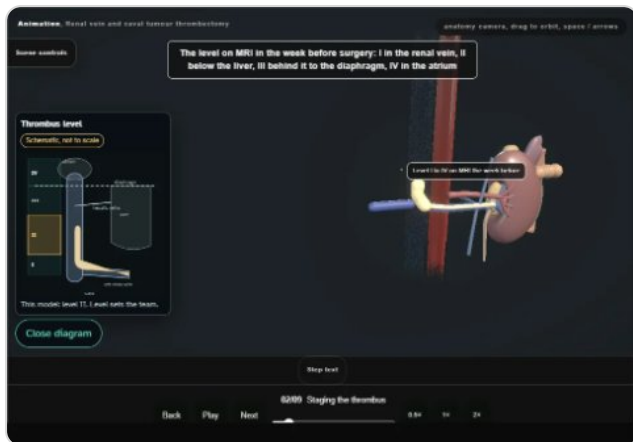
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01 Who: the tumour that grows up the vein



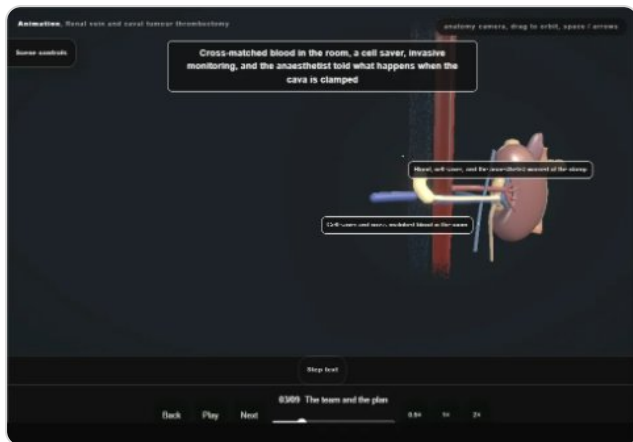
- A renal cancer grown as a tongue up its vein and into the cava: a tenth of renal cancers, still curable by removing all of it.
- Modelled here on the left, where the long renal vein crosses to the cava.

02 Staging the thrombus



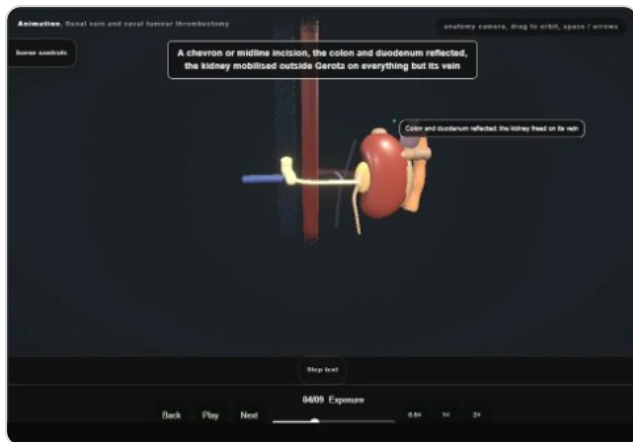
- MRI in the week before: level I in the renal vein, II below the liver, III behind it to the diaphragm, IV in the atrium.
- **The level sets the team:** vascular for II, the liver mobilised for III, bypass and a cardiac surgeon for IV.

03 The team and the plan



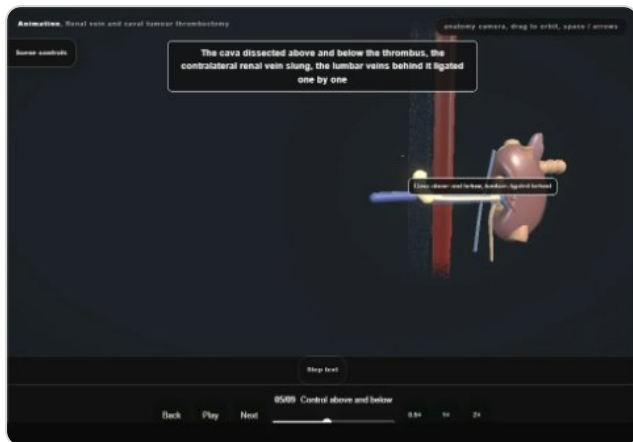
- Cross-matched blood in the room, a cell saver, invasive monitoring, the anaesthetist told what happens when the cava is clamped.
- The thrombus is never touched until the cava is controlled.

Exposure



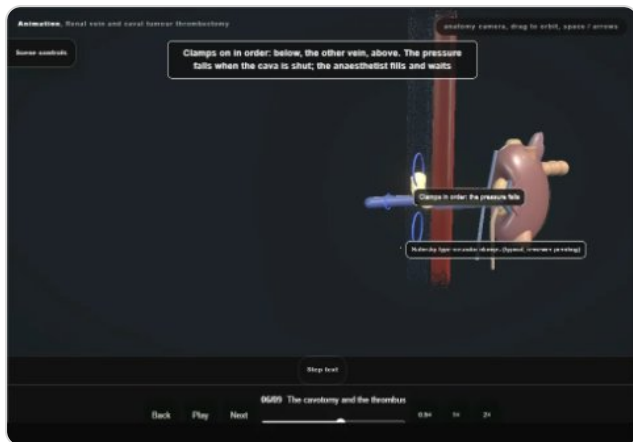
- A chevron or midline incision, the colon and duodenum reflected, the kidney mobilised outside Gerota on everything but its vein.
- The renal artery found behind the vein and **ligated first**, and the vein softens.

Control above and below



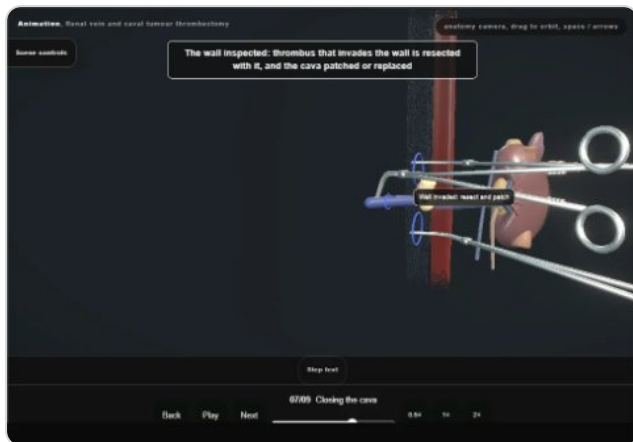
- The cava dissected above and below the thrombus, the contralateral renal vein slung, the lumbar veins behind it ligated one by one.
- Three loops: the cava below, the other vein, the cava above where the finger says the thrombus ends and a centimetre higher.

The cavotomy and the thrombus



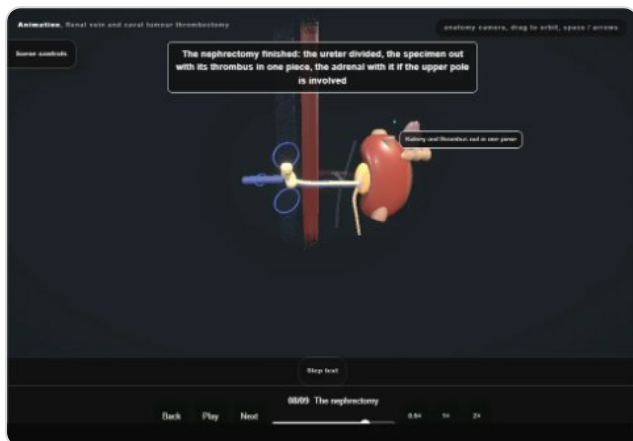
- Clamps on below, the other vein, above; the pressure falls and the anaesthetist fills.
- The cavotomy from the ostium up the anterior wall, and the thrombus delivered whole with the kidney.
- Wall that is invaded is resected and patched.

07 Closing the cava



- Flushed and closed with a running 4-0 or 5-0 vascular suture, the lumen kept wide, and the clamps off in reverse: above, the other vein, below.

08 The nephrectomy



- The ureter divided, the specimen out with its thrombus in one piece, the adrenal with it if the upper pole is involved.
- Level III and IV are the same steps with the liver mobilised, or bypass and the heart in the room.



- Intensive care: fluid, clotting, drains, the legs watched for a cava that has thrombosed.
- Half are cured by the operation alone; the wall and the nodes decide who is not.

Derived from kidney/IvcThrombectomyScene.tsx at build time: every step title and caption above is the authored ProcedureDef text, reproduced verbatim, and this page shares its readable-points renderer with the animation itself. 9 of 9 steps have a captured frame. Text fingerprint 075ca079ee40208a. A caption edit without a re-capture fails the production check, so the sheet and the animation cannot drift apart silently.

Pre-release educational preview

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Debrief after it.

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