



Penn Medicine
Transplant Institute

Overview of the Kidney Transplant Surgery

Ronald Parsons, MD
Surgical Director, Kidney & Pancreas Transplantation
Penn Transplant Institute
Associate Professor of Surgery
University of Pennsylvania
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Overview

Why get a Transplant?

Allocation

How to get a Transplant

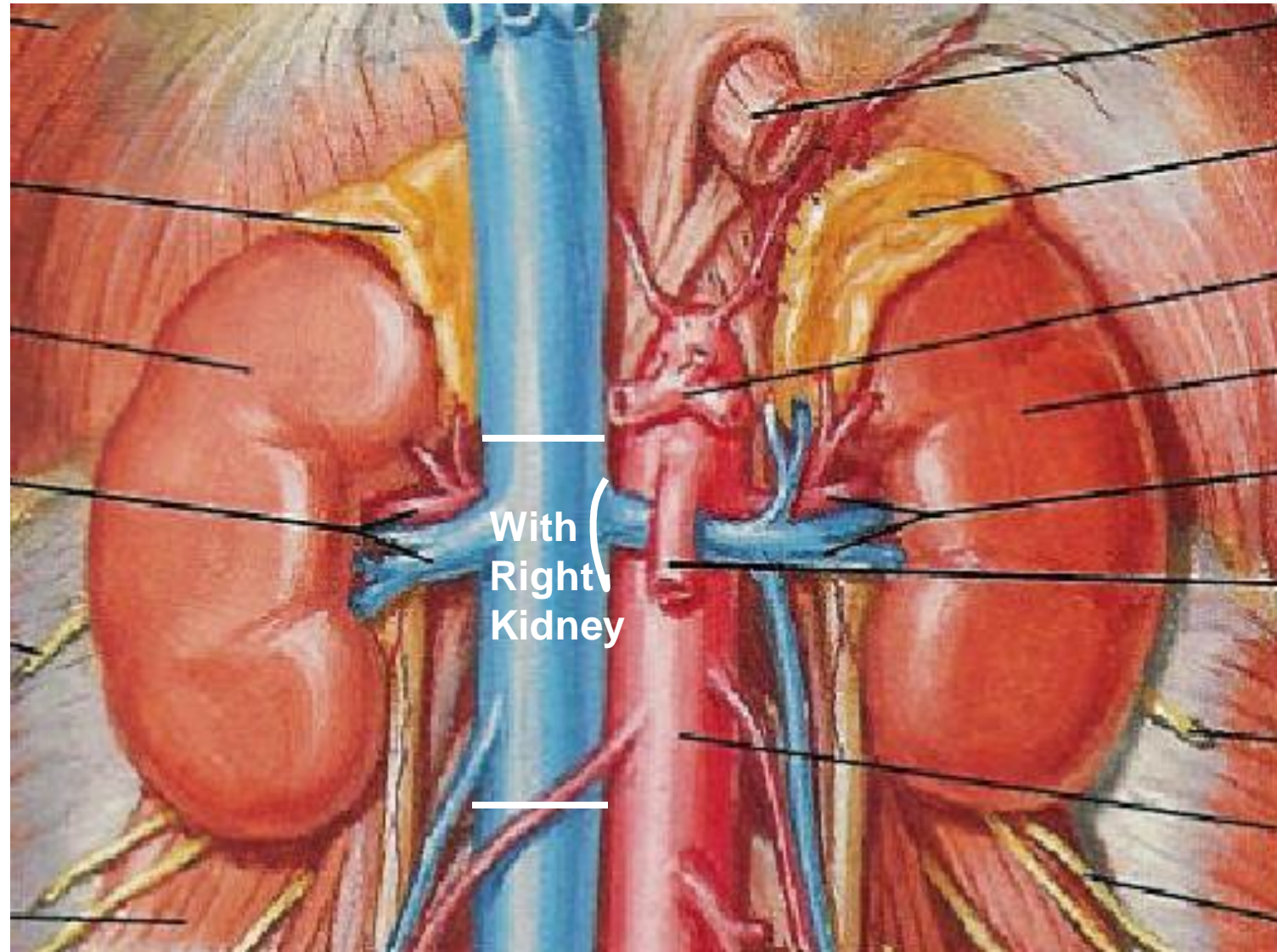
The Surgery

Complications

Summary



Kidney Procurement from a Deceased Donor



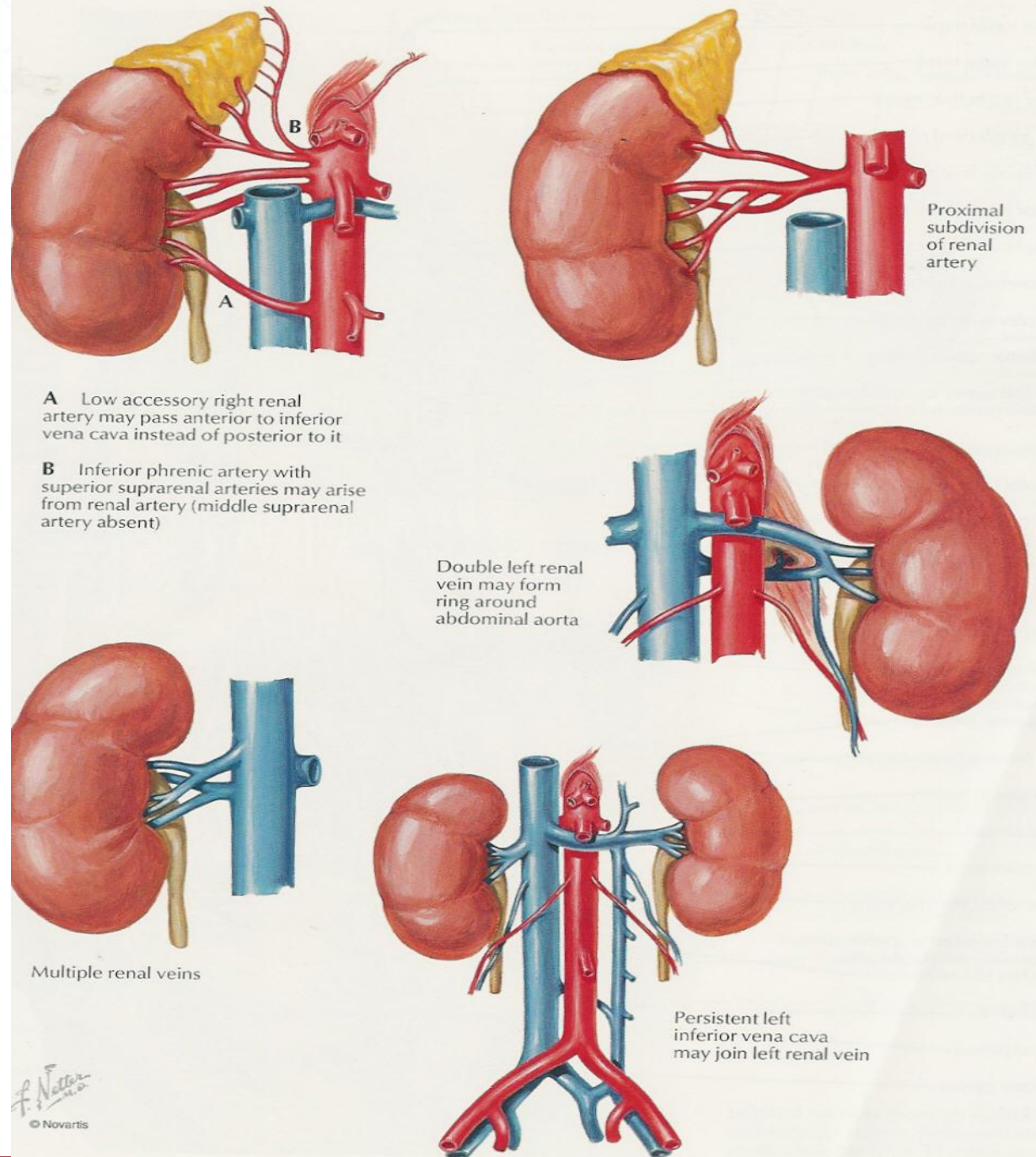
Donors don't read the book!

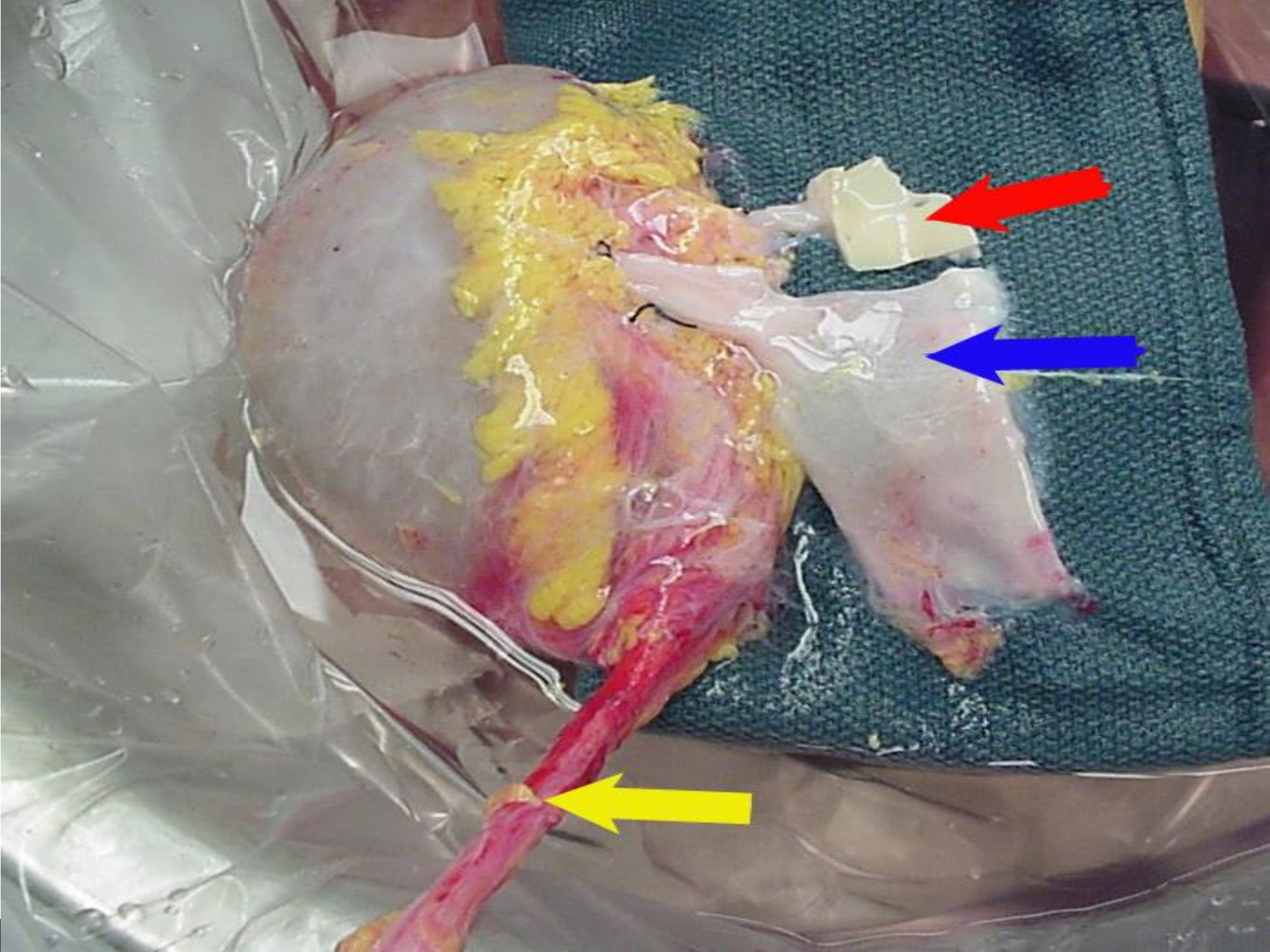
Few donors have "normal anatomy"

Learn to

- ✓ expect
- ✓ identify
- ✓ manage

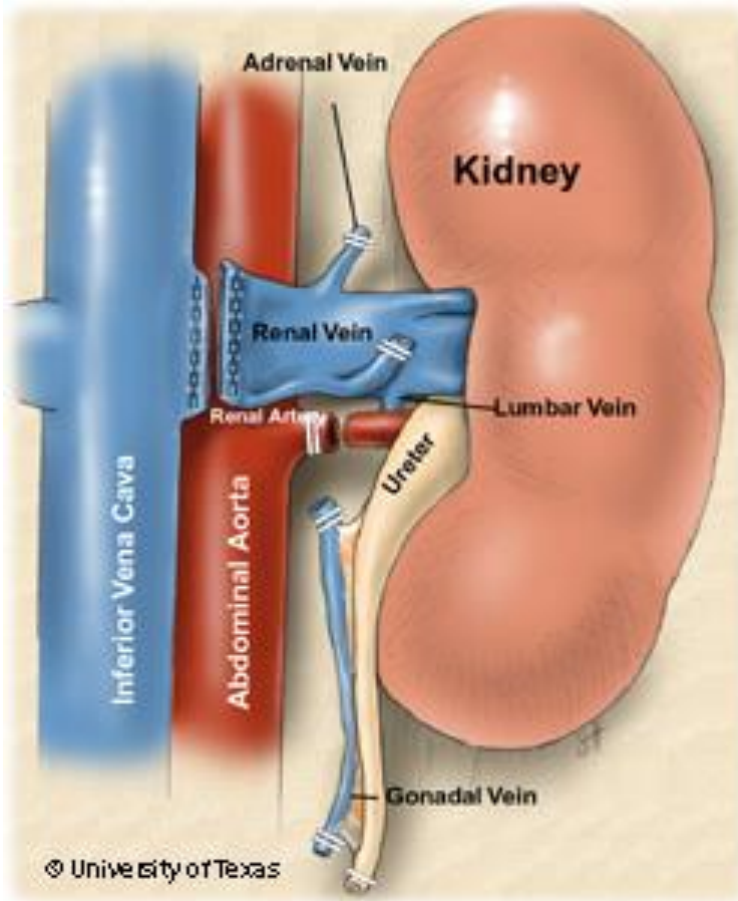
the variations







Kidney Procurement from a Living Donor



- ✓ The kidney is flushed and cooled with preservation solution
- ✓ Transported to the recipient room/hospital
- ✓ Prepared for implantation





12.0 mm

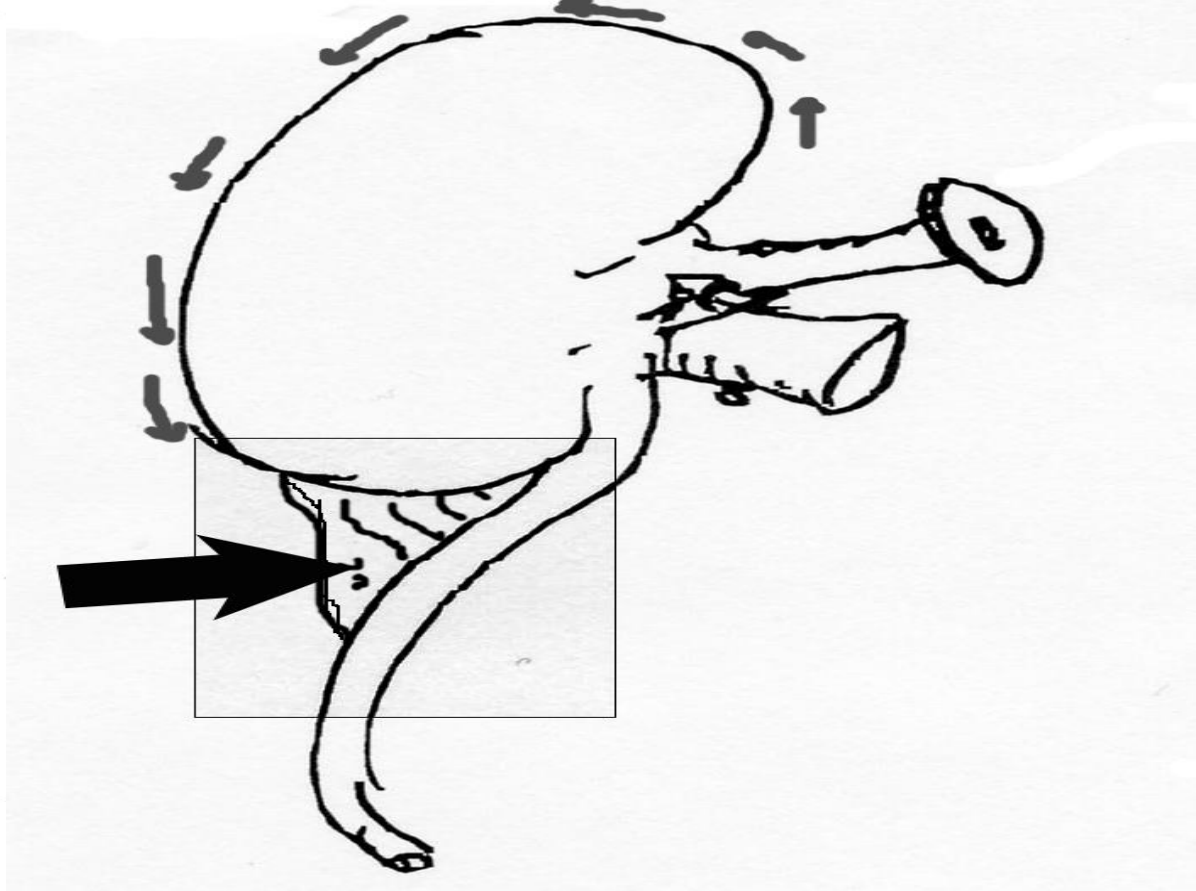
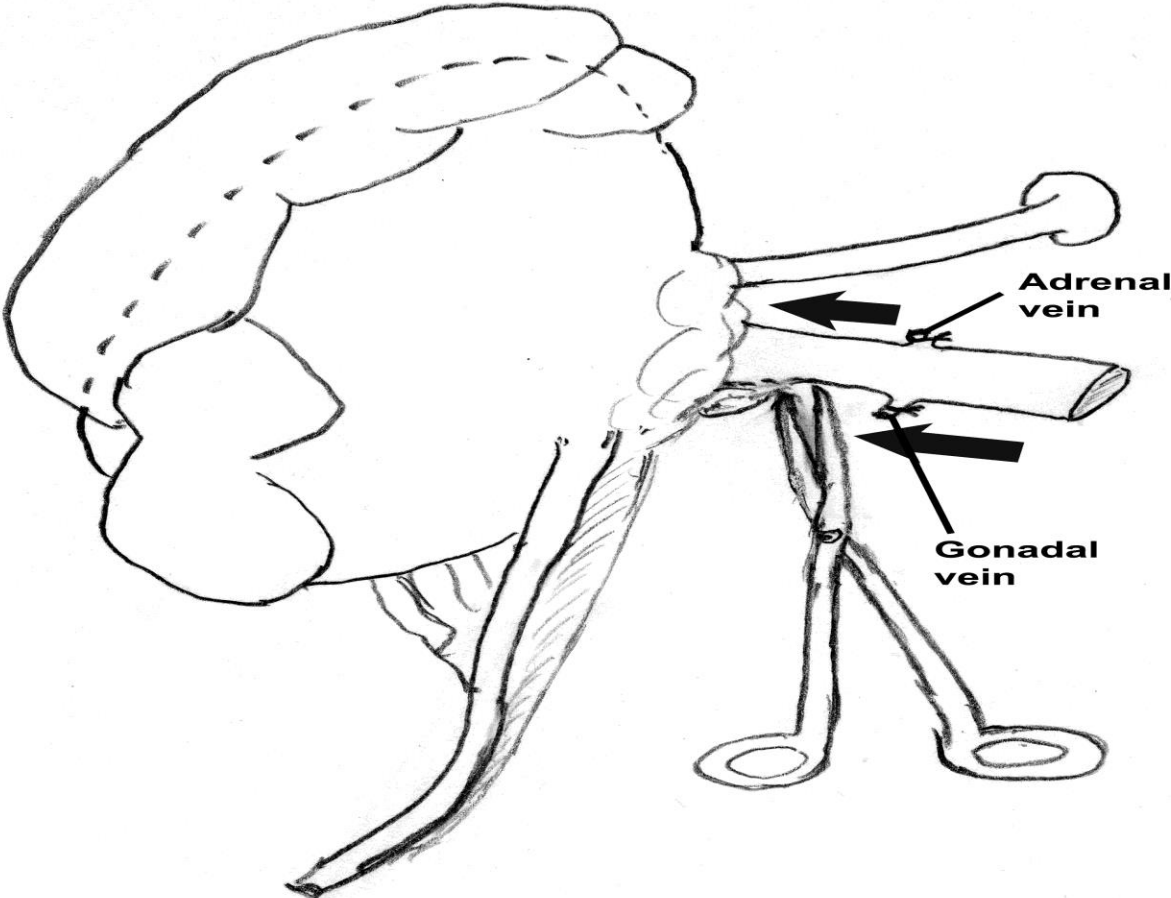
R

L

Vitrea®
W/L:243/290
Segmented

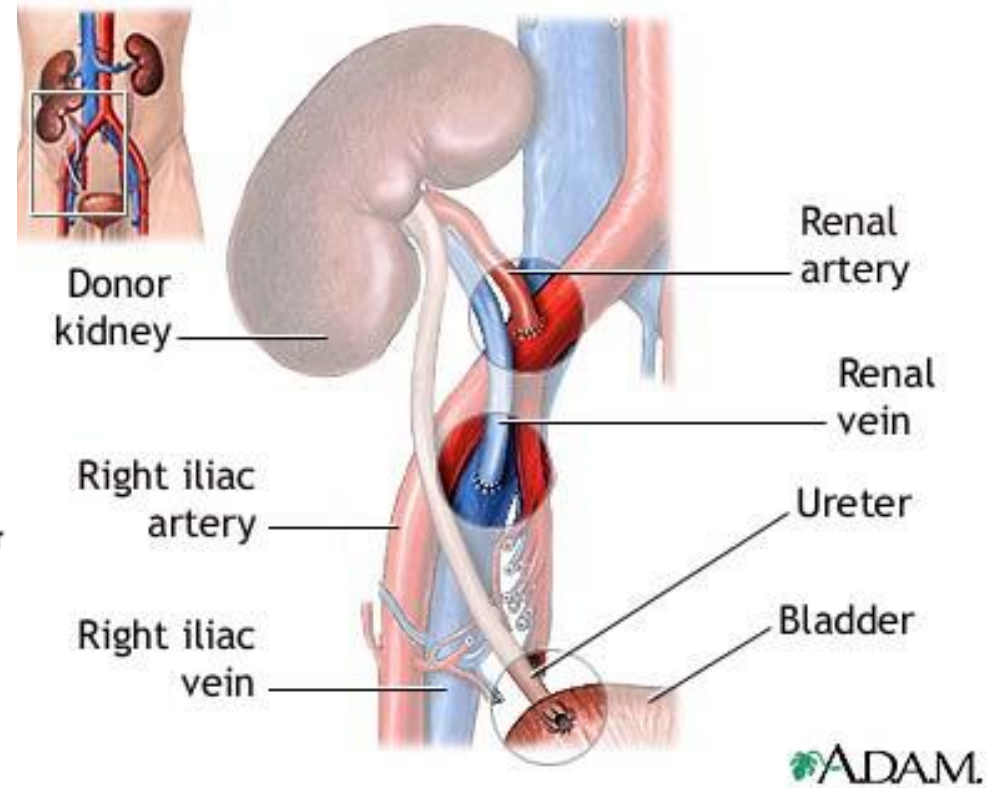
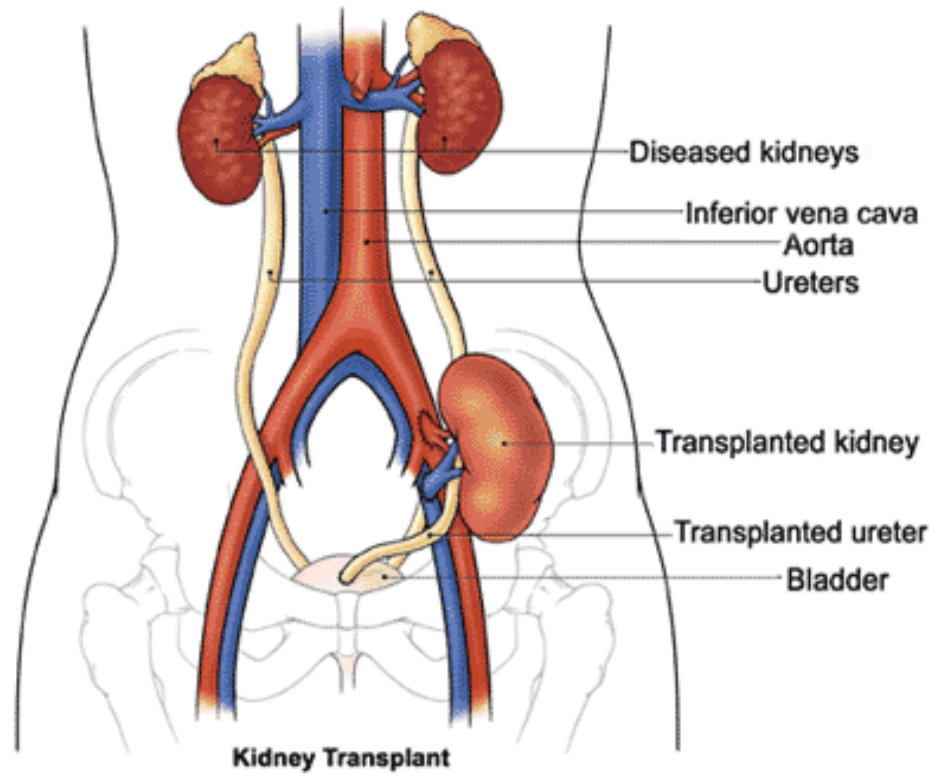


Bench Preparation of the Kidney





Recipient Operation





What happens in the operating room?



A few surgeons (at least two)

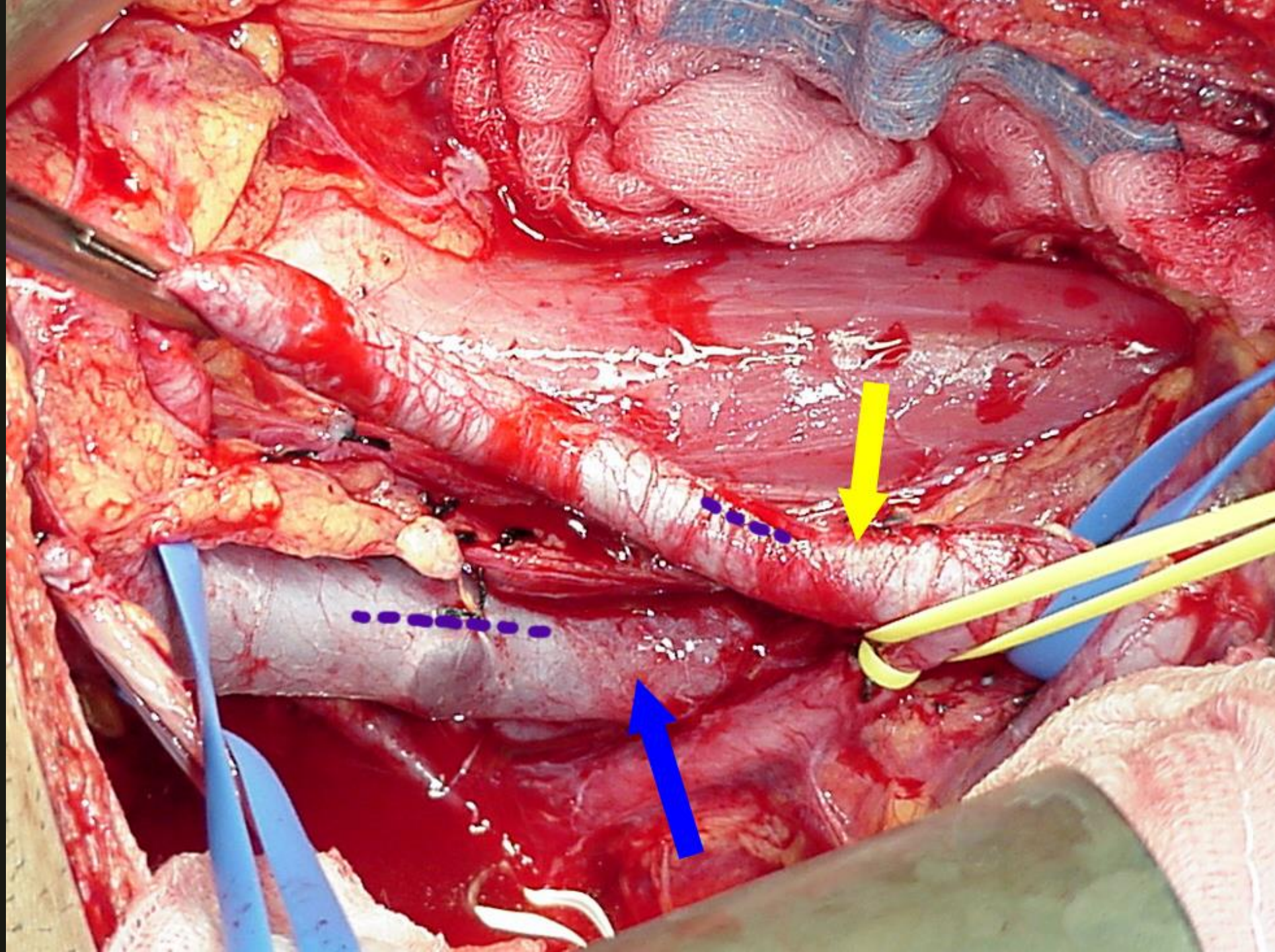
A few hours (2-4, depending)

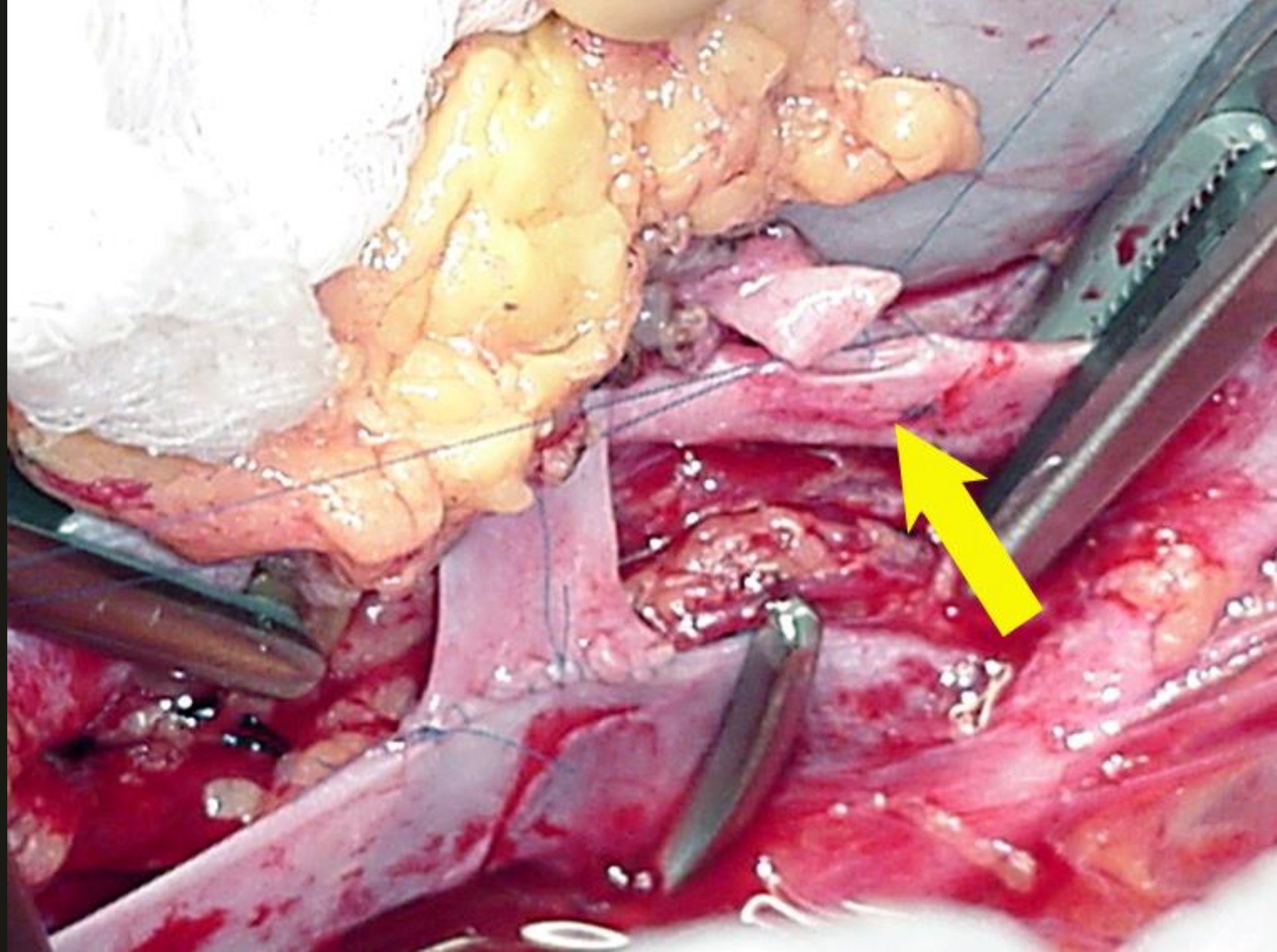


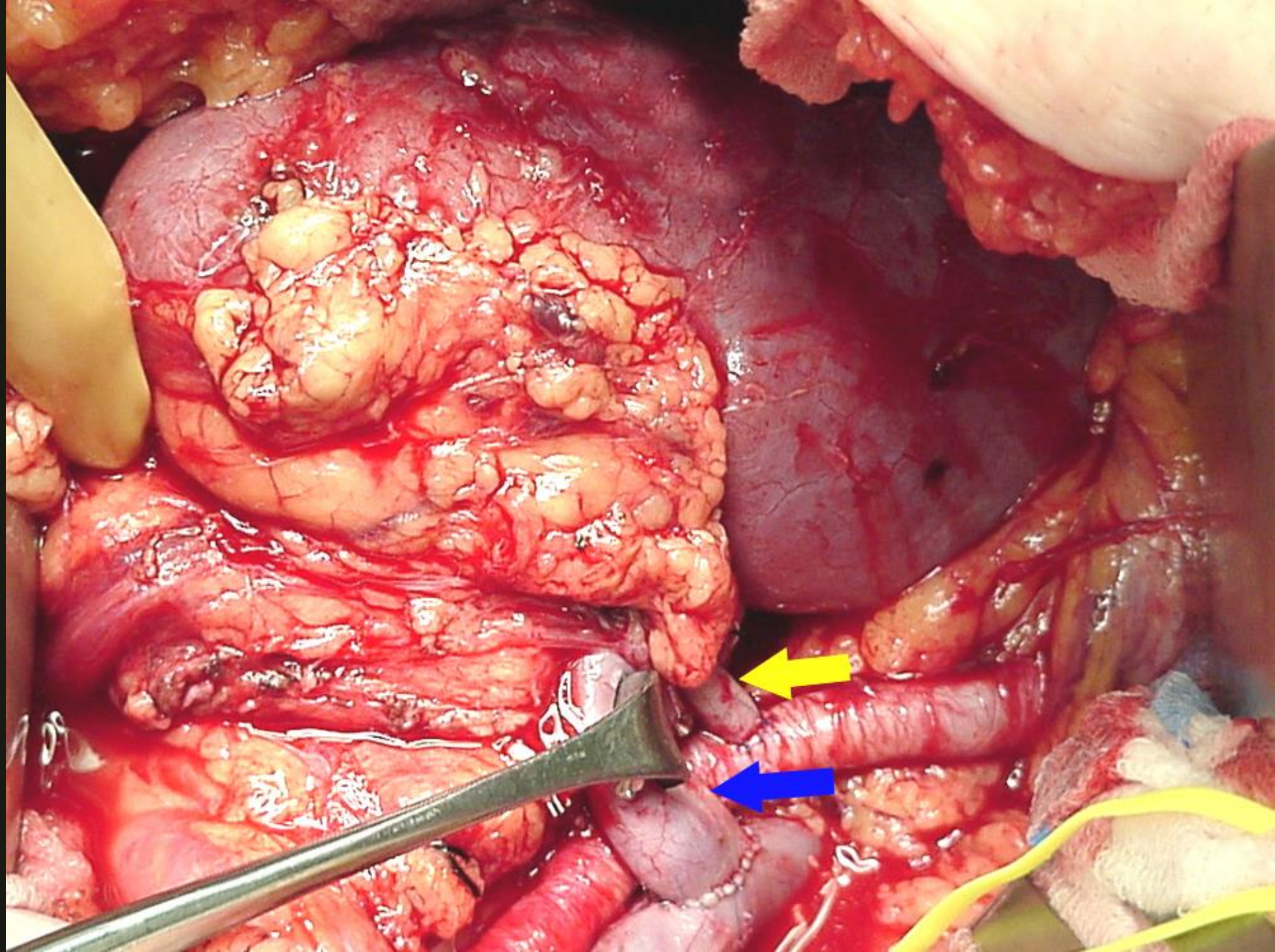
Steps

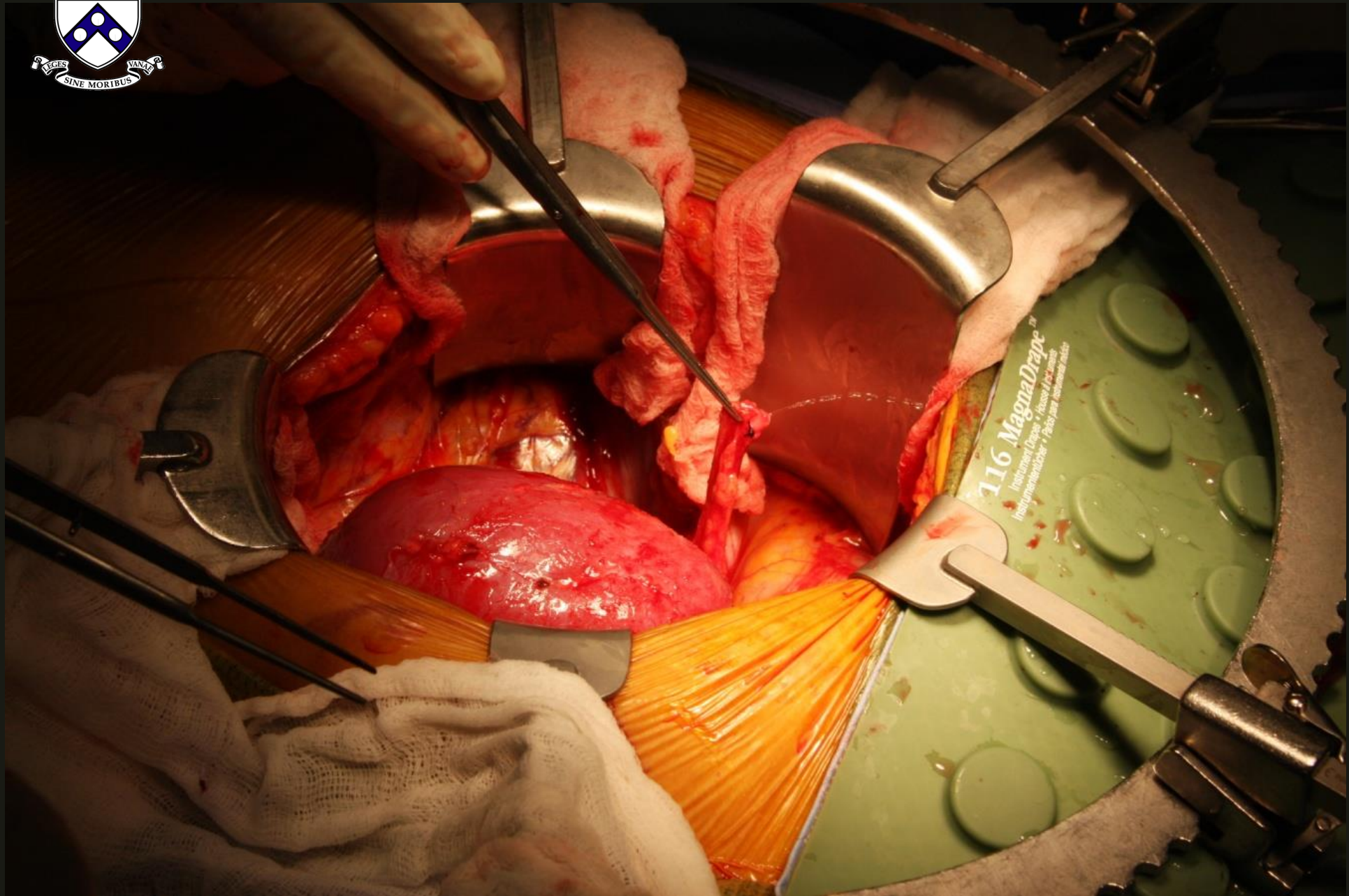
- Incision
- Vessel exposure
- Transplant
- Reperfusion
- Ureter
- Hemostasis
- Closure

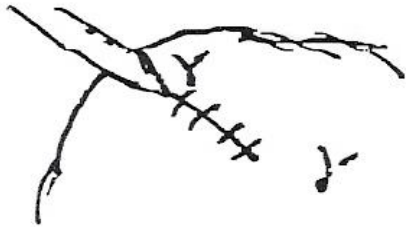
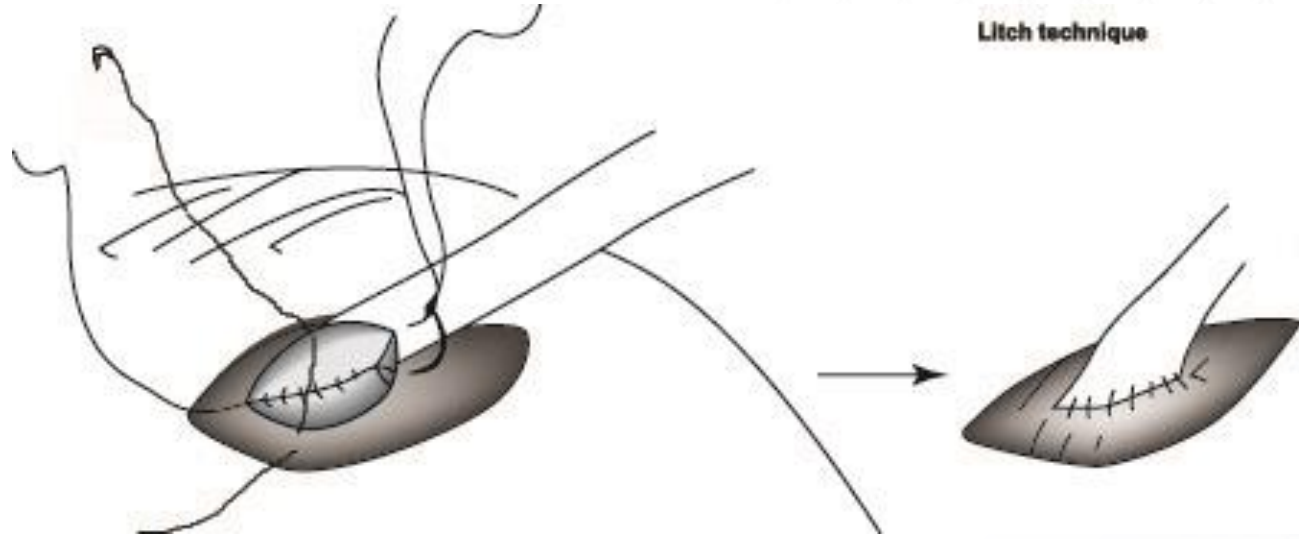








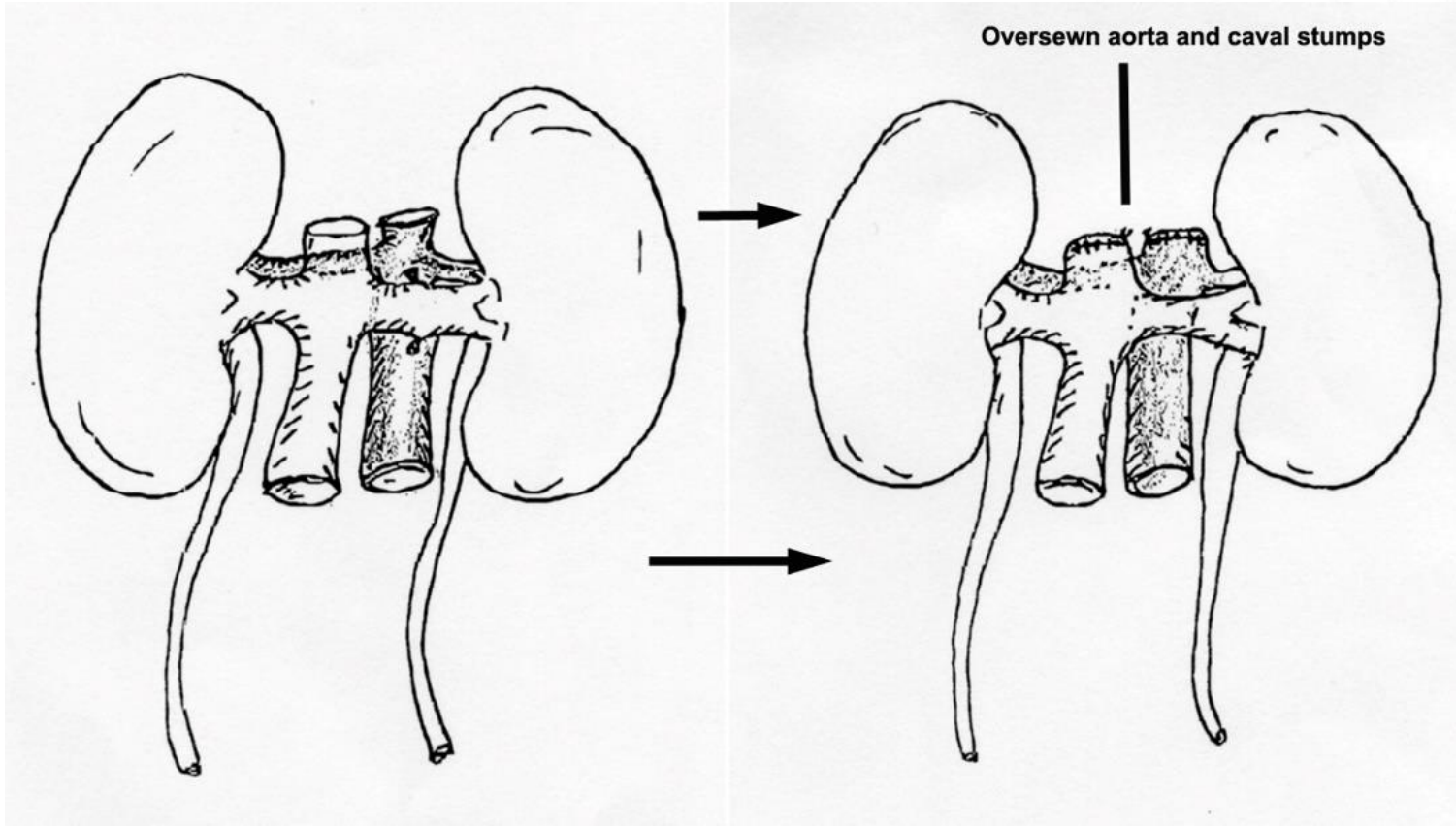




+/- Stent

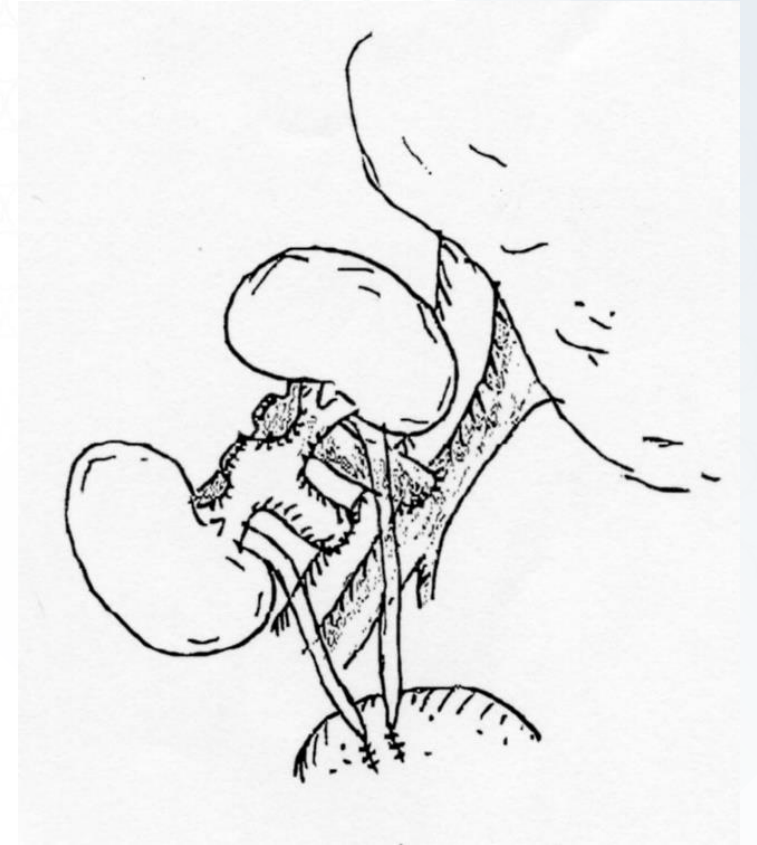
Re-creation of anti-reflux mechanism

En-bloc pediatric kidneys

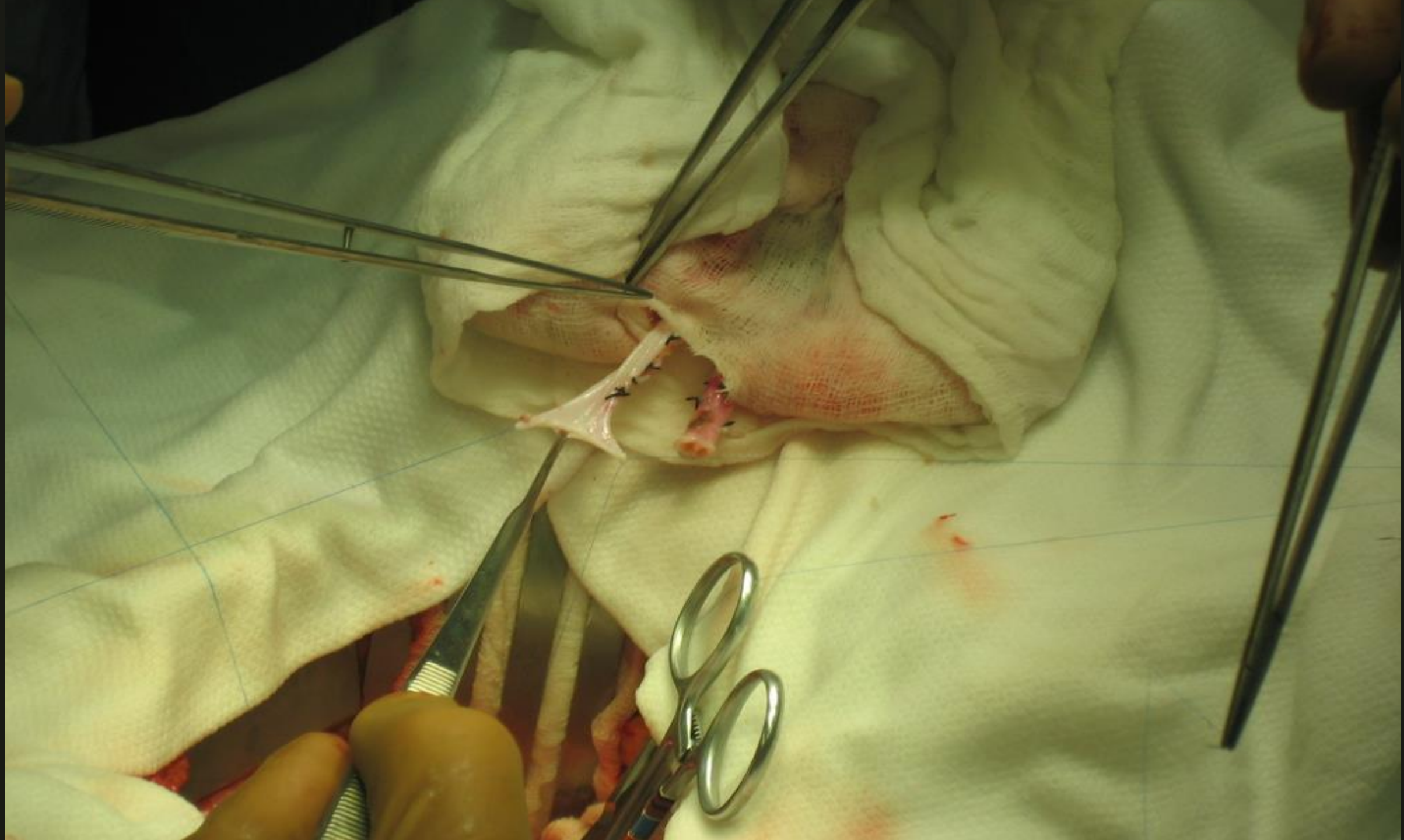


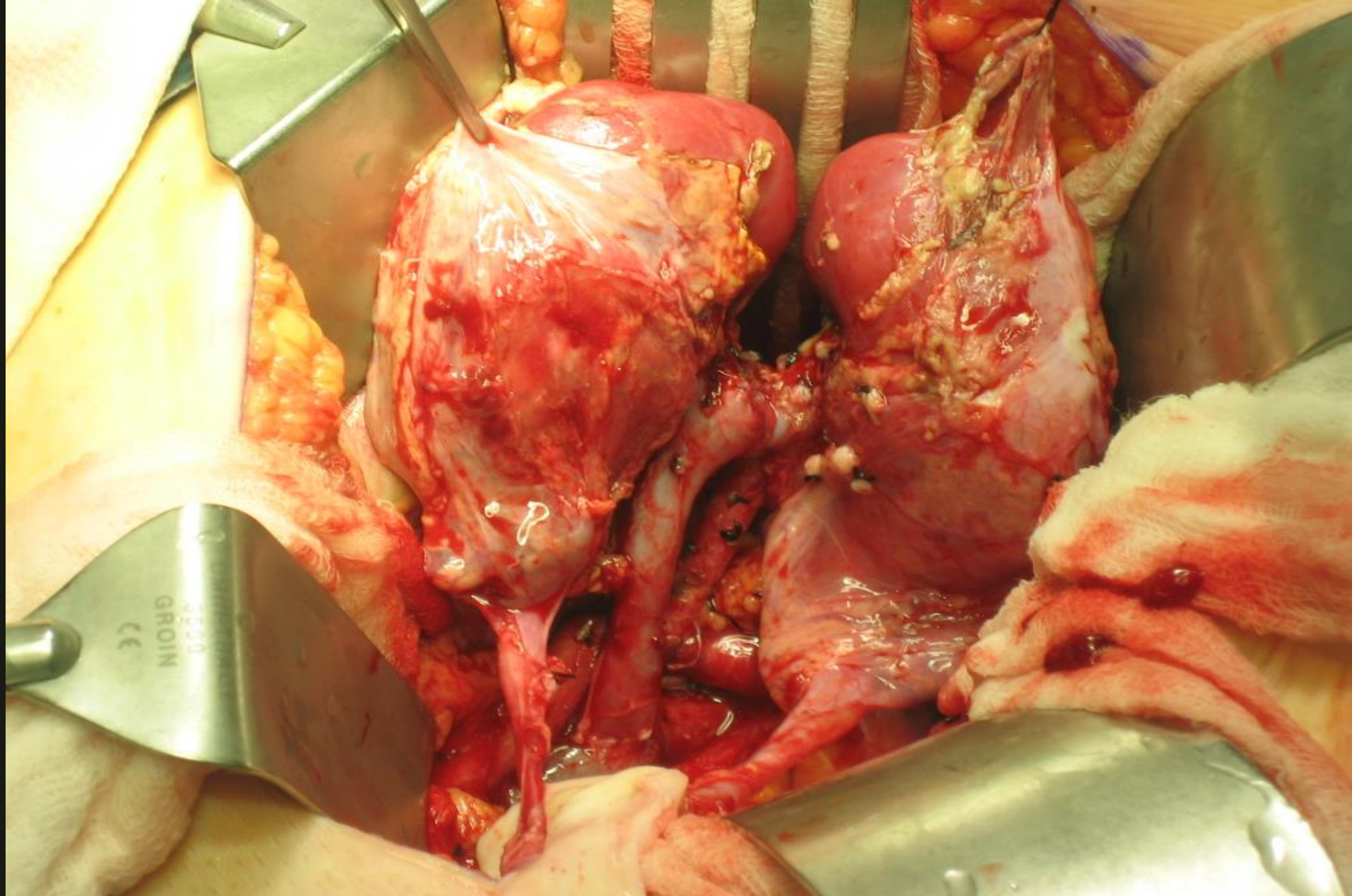
Procurement

Benching

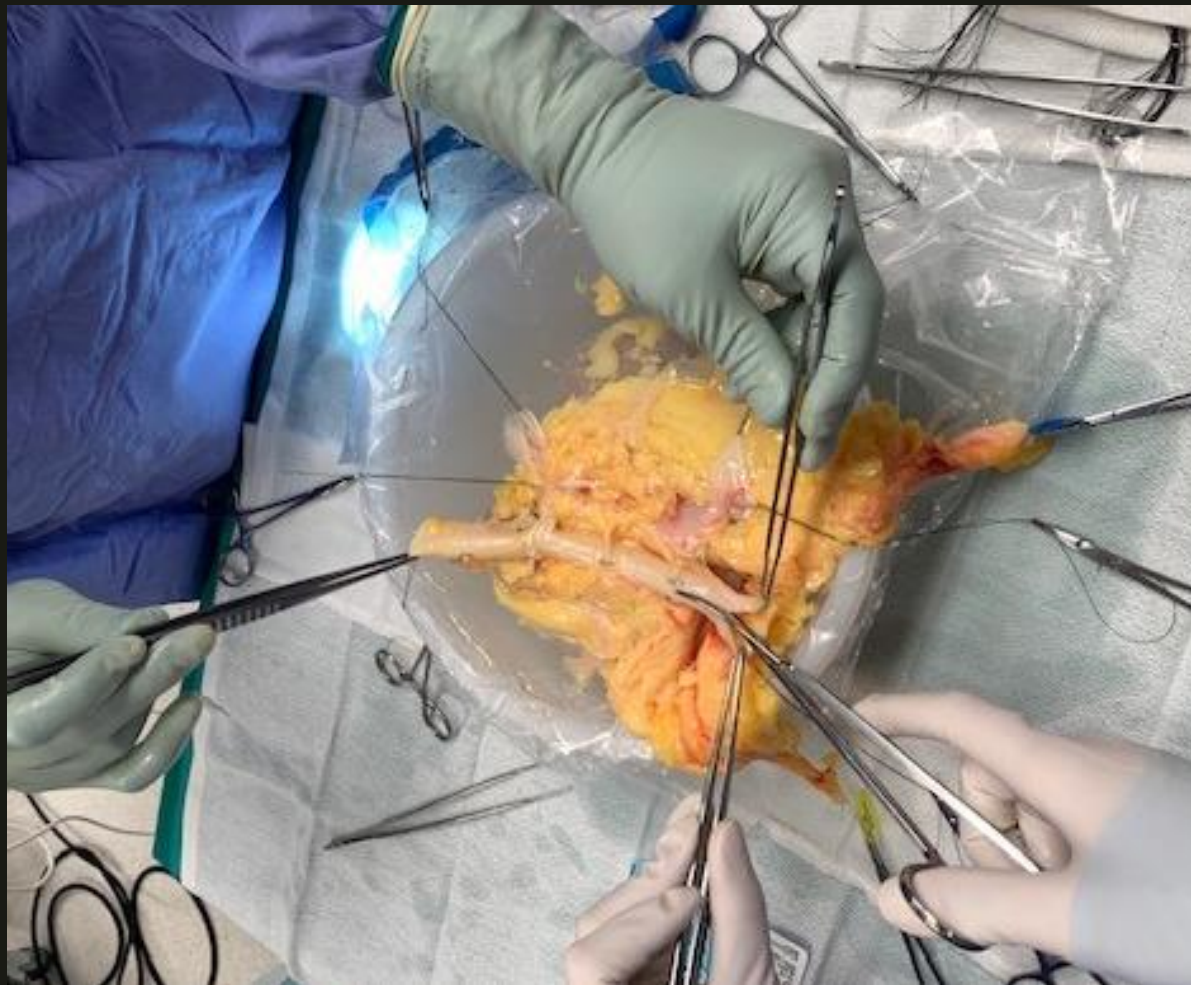


Transplant





Horseshoe Kidney Transplant

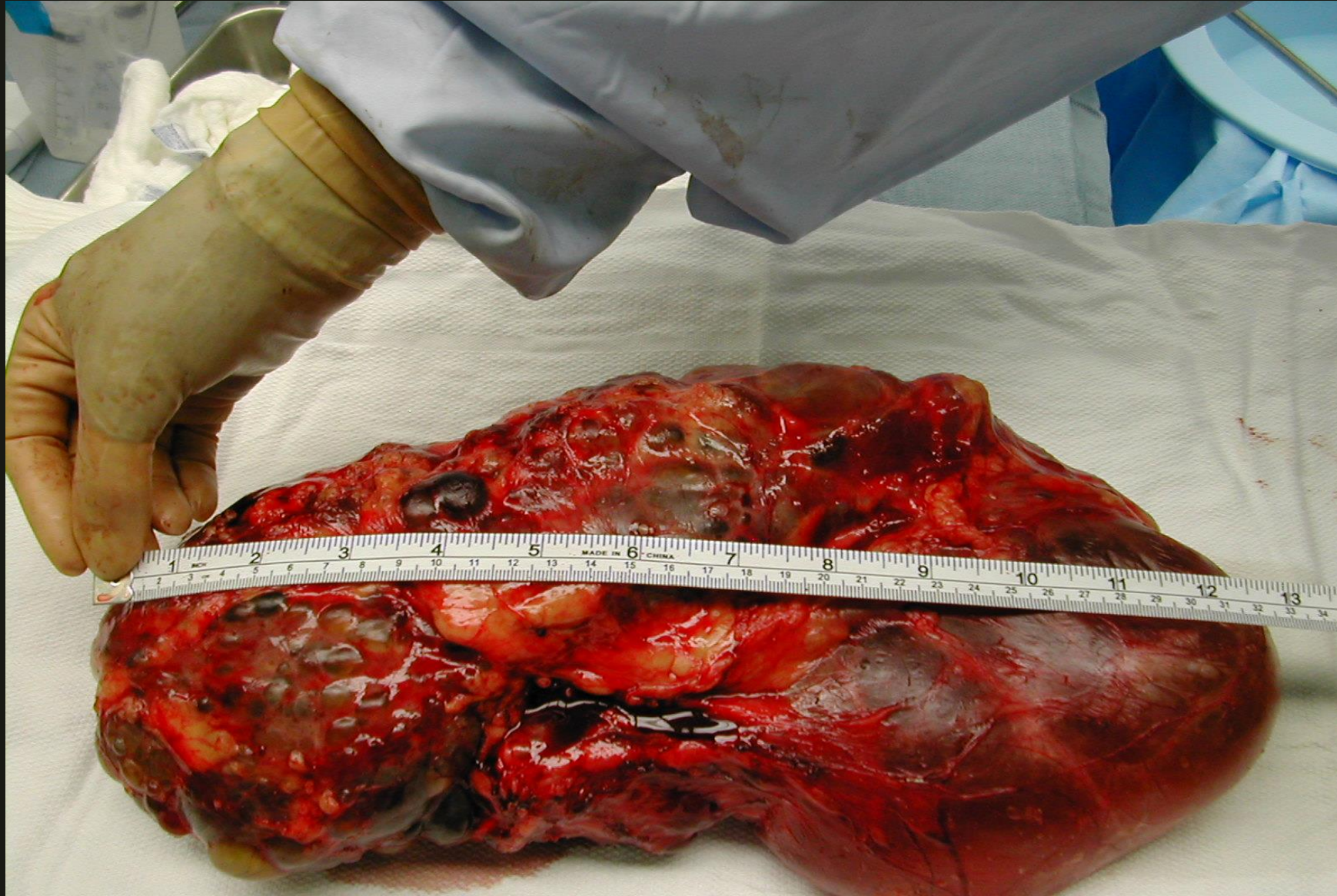




Dual Transplant



Polycystic kidneys





Living Donor Outcomes

Adults - aged 18 years or older

[View Pediatric Outcomes](#)

	FROM ALL DONORS	FROM LIVING DONORS
TRANSPLANTS EVALUATED OVER A 25-YEAR PERIOD	494	182
ESTIMATED PERCENTAGE ALIVE WITH A FUNCTIONING TRANSPLANT AT 1 YEAR	96.5%	100.0%
1-YEAR KIDNEY SURVIVAL		

Figure C5L. Adult (18+) 1-year living donor graft failure HR estimate

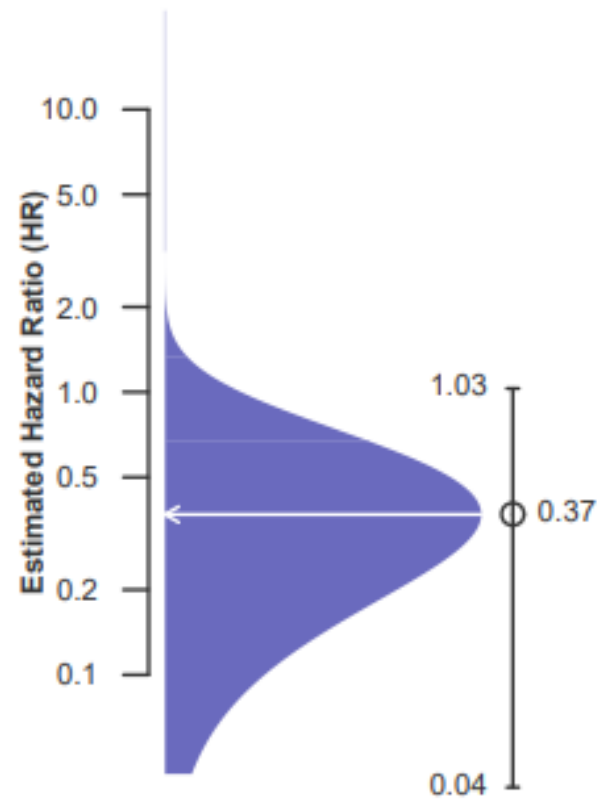
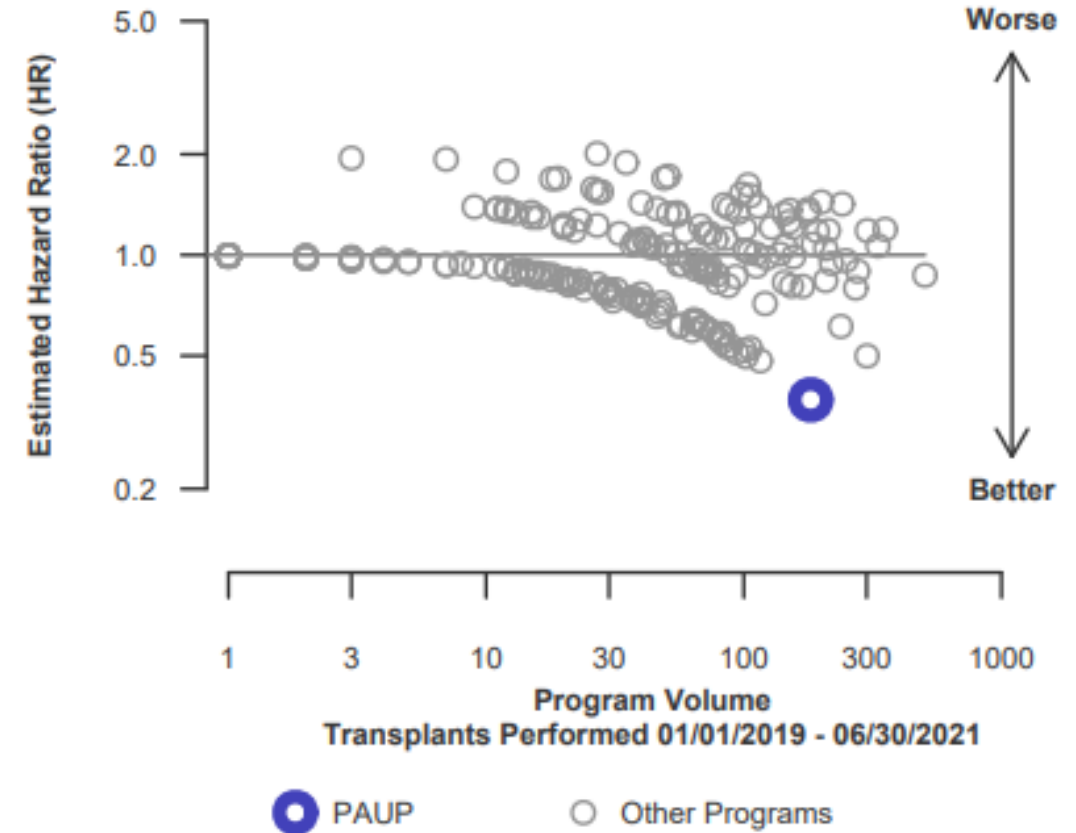


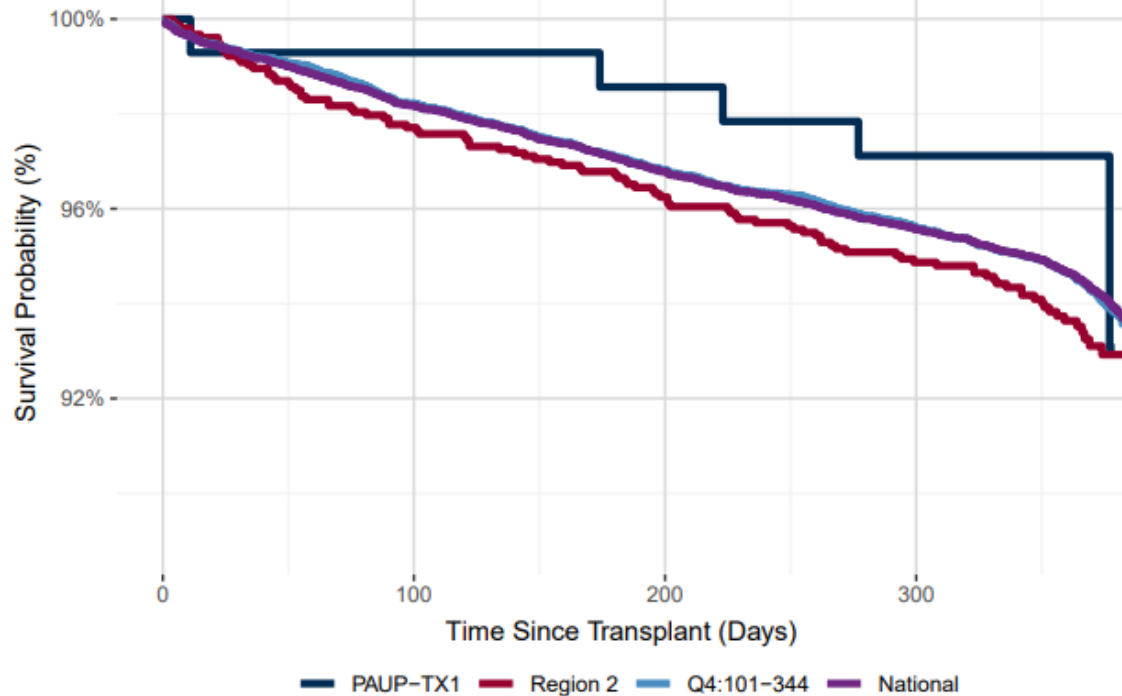
Figure C6L. Adult (18+) 1-year living donor graft failure HR program comparison





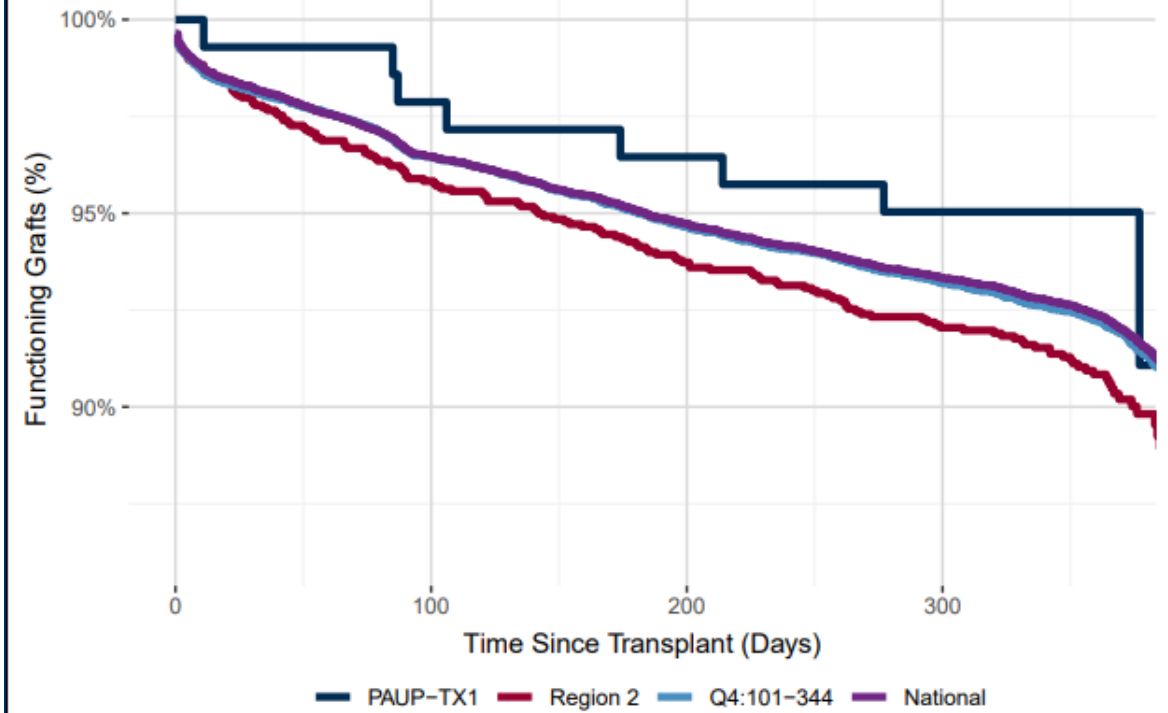
Deceased Donor Outcomes

Figure 1. 1-Year Deceased Donor Patient Survival as of July 8, 2022



*Survival estimates from groups having fewer than 10 recipients at risk are suppressed; curves may appear truncated

Figure 2. 1-Year Deceased Donor Kidney Graft Survival as of July 8, 2022



*Survival estimates from groups having fewer than 10 recipients at risk are suppressed; curves may appear truncated

What can go wrong?

- ✓ Clotting
- ✓ Non-function
- ✓ Delayed function
- ✓ Recurrent Disease
- ✓ Bleeding
- ✓ Urine Leak
- ✓ Hematoma
 - Perinephric
 - Subcapsular
- ✓ Lymphocele
- ✓ Seroma
- ✓ Cardiovascular
- ✓ Infection
- ✓ Rejection
- ✓ Hernia
- ✓ Cancer
- ✓ Non-adherence



Kidney Transplantation

- ✓ Improves quality of life
- ✓ Prevents complications of dialysis
- ✓ Is cheaper than dialysis
- ✓ New Allocation system helps diabetic patients achieve transplant
- ✓ Improves survival

Penn offers innovative access to kidney transplantation

Discover the Penn Difference





