

# EMERGENCY AND TRAUMA RADIOLOGY 2025

Oslo, Norway

June 2 - 5, 2025

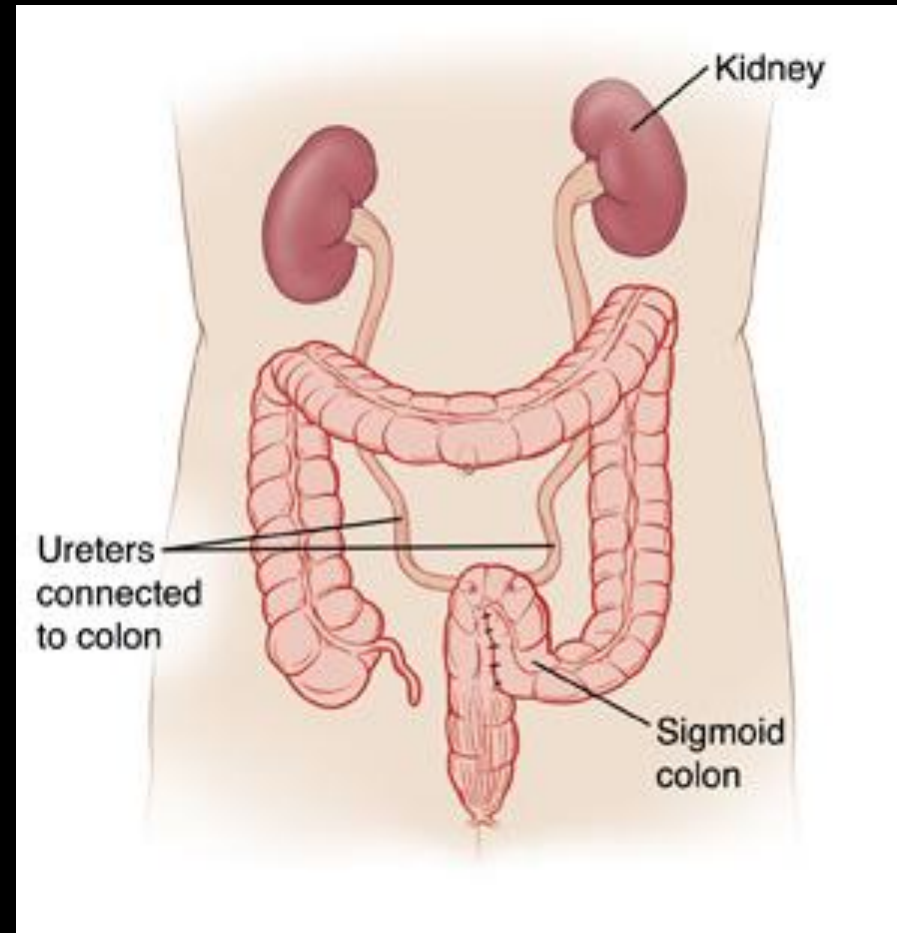
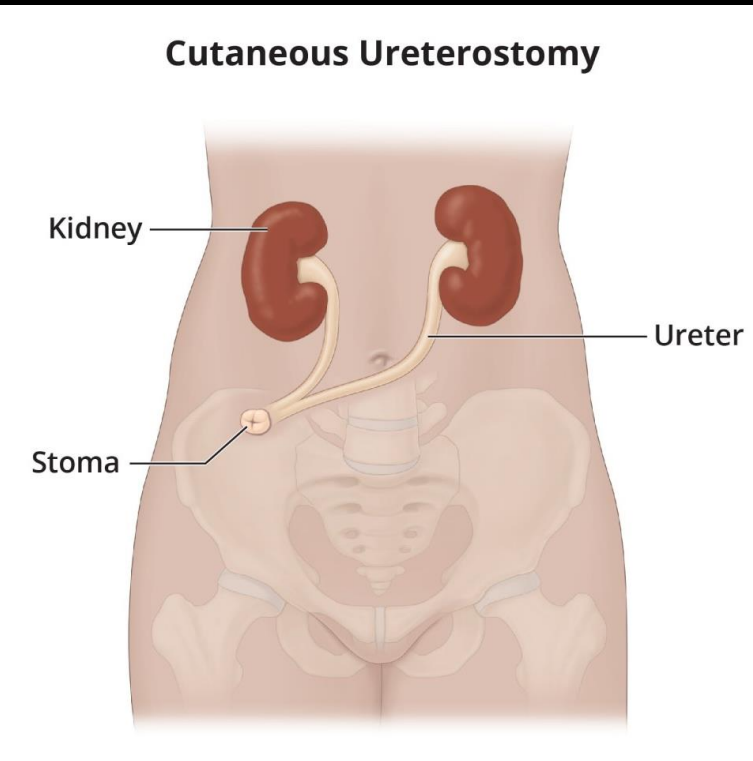
## Urinary Diversions: a Roadmap



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Associate Professor  
Director of Emergency Radiology

**TMC**  
a Unilabs company

# These are all Urinary Diversions:



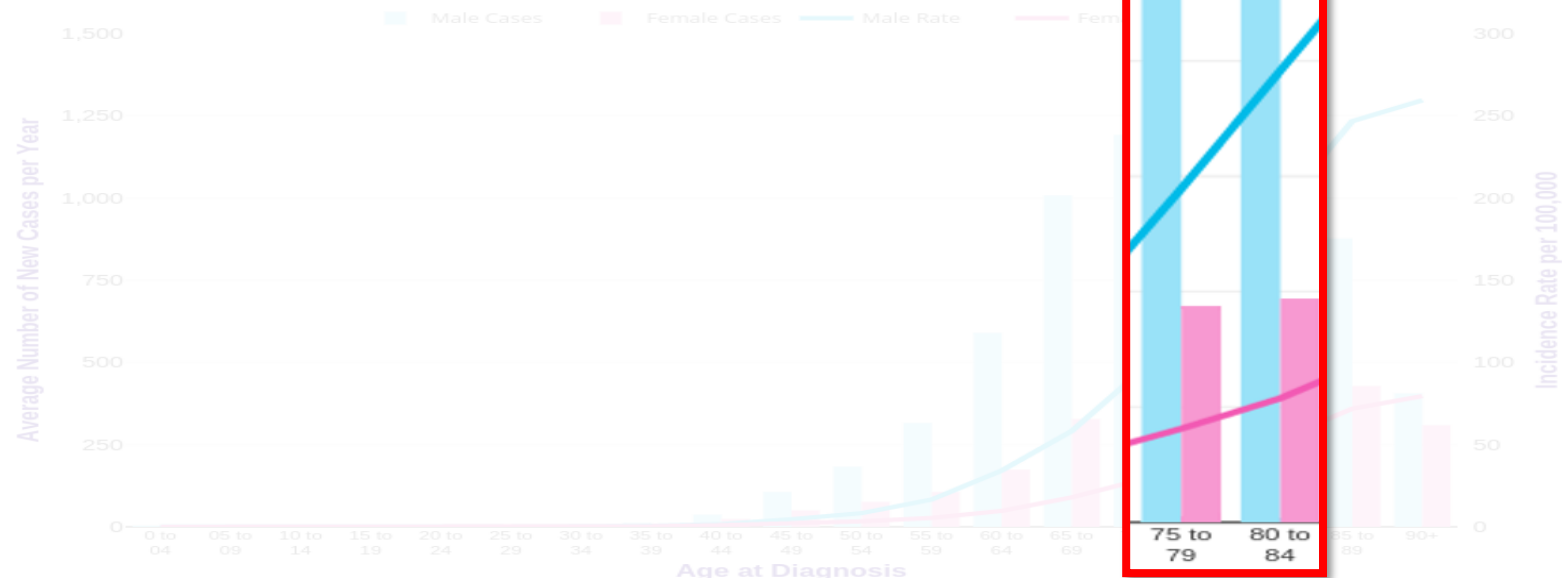
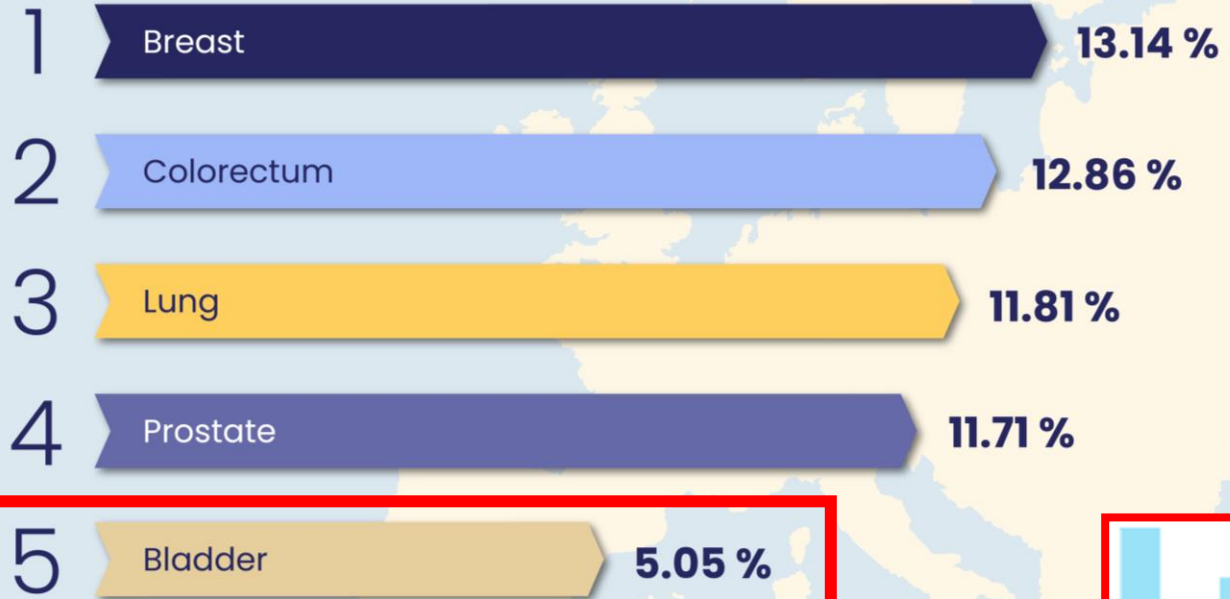
But today we will focus on long-term diversions after **cystectomy**

# The Problem:

- Muscle invasive bladder cancer
- Neurogenic bladder disease caused by:
  - Spinal cord injury
  - Multiple sclerosis
  - Meningomyelocele
- Bladder pain syndrome
- Radiation cystitis
- Urinary incontinence
- Vesicovaginal fistulae
- Failed reconstruction after congenital anomalies (such as extrophia vesicalis)

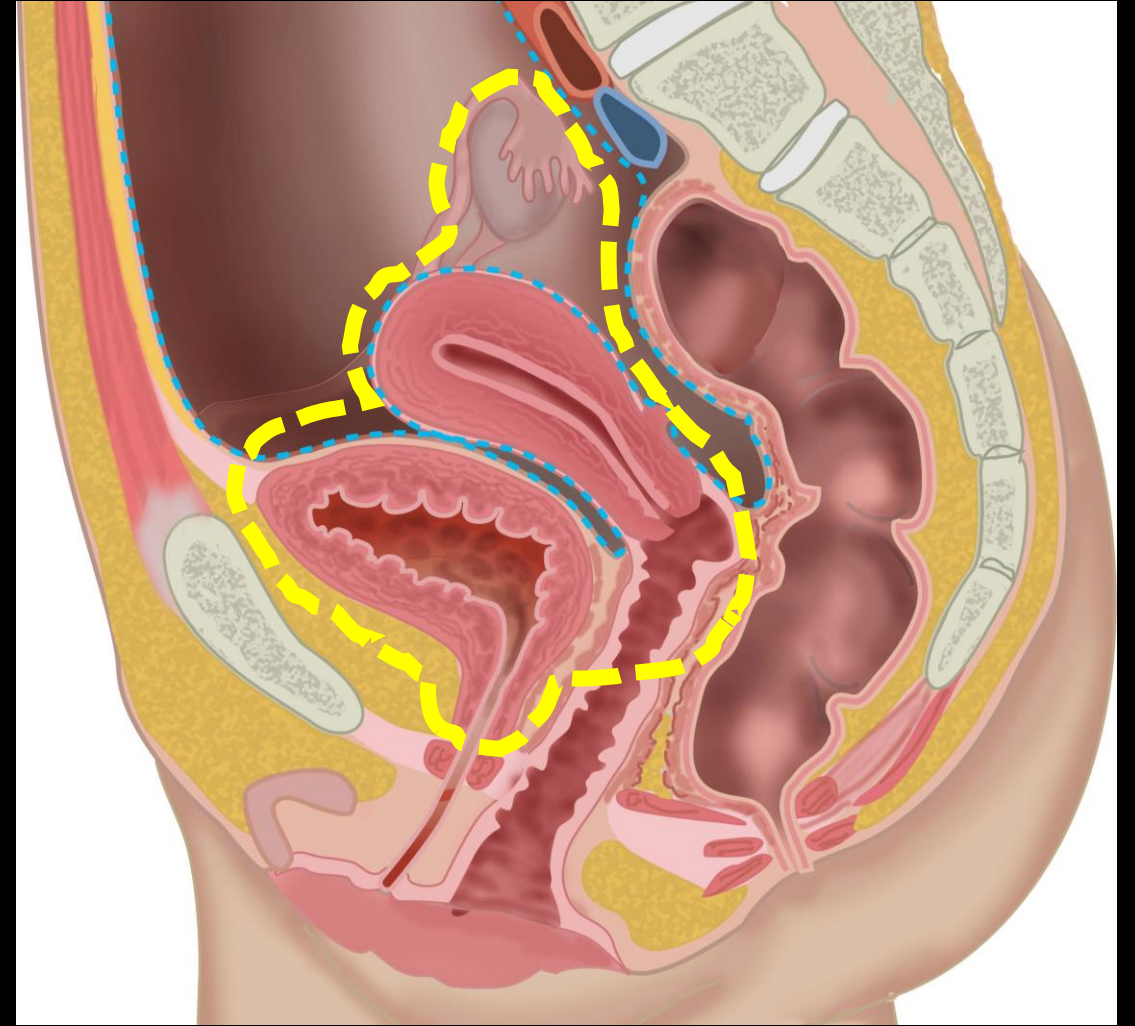
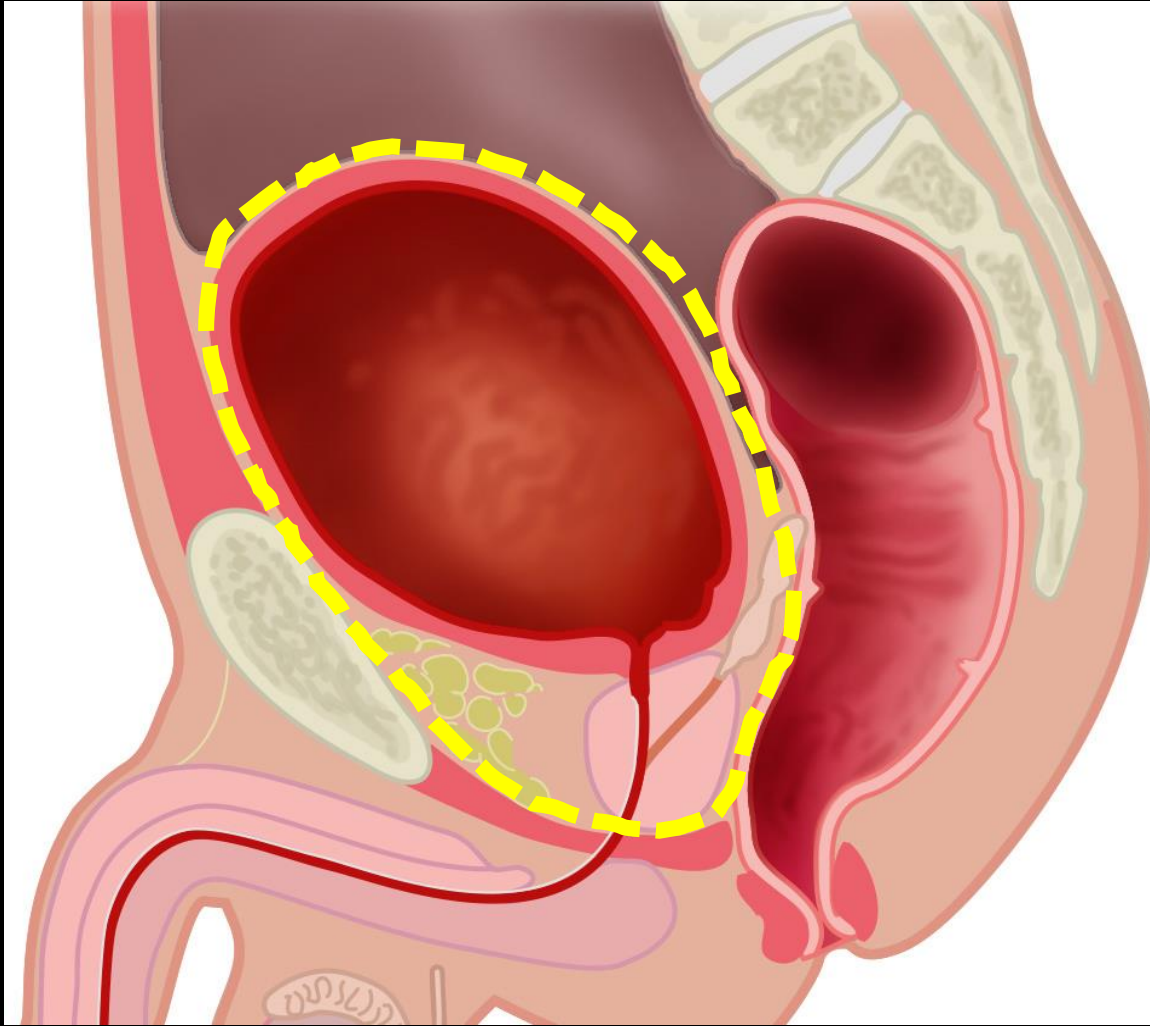
## Most Common Types of Cancers in Europe

Standardised rate per 100.000





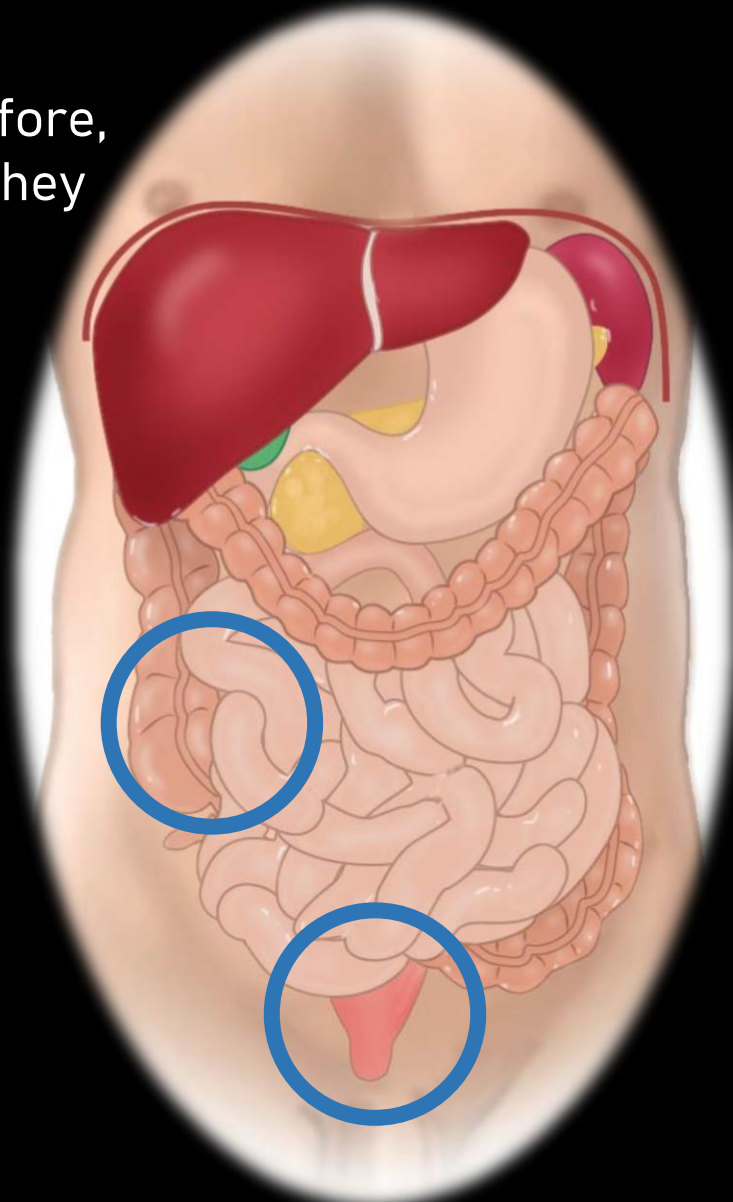
# The Solution: Radical Cystectomy



# Diversions with conduits

## Heterotopic:

- Elsewhere in the abdomen, therefore, also called "cutaneous" because they open through a stoma
- Can be **continent** (rare) or **non-continent** (common)



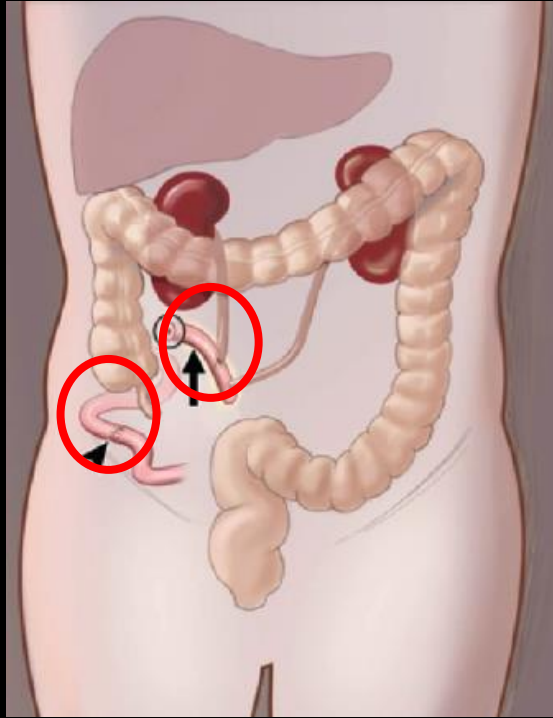
## Orthotopic:

- Where the urinary bladder was, opening through the urethra, therefore also called "neobladder"
- **Continent**

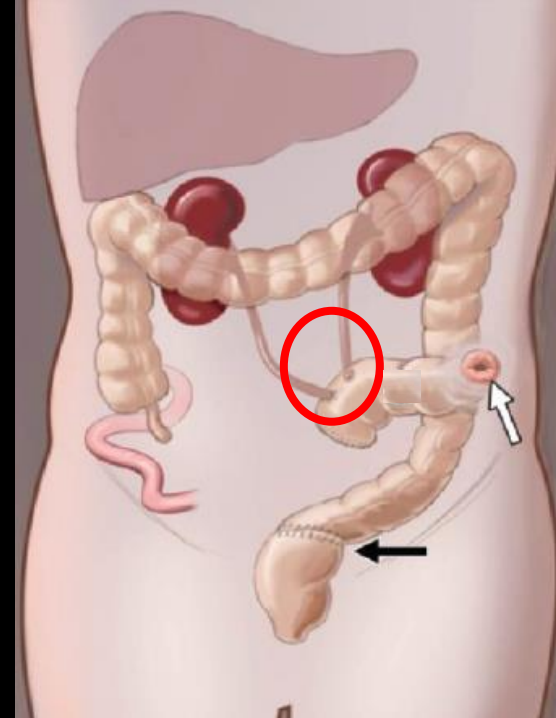
# Diversions with conduits

## Heterotopic

## non-continent



Ileal Conduit



Sigmoid Conduit

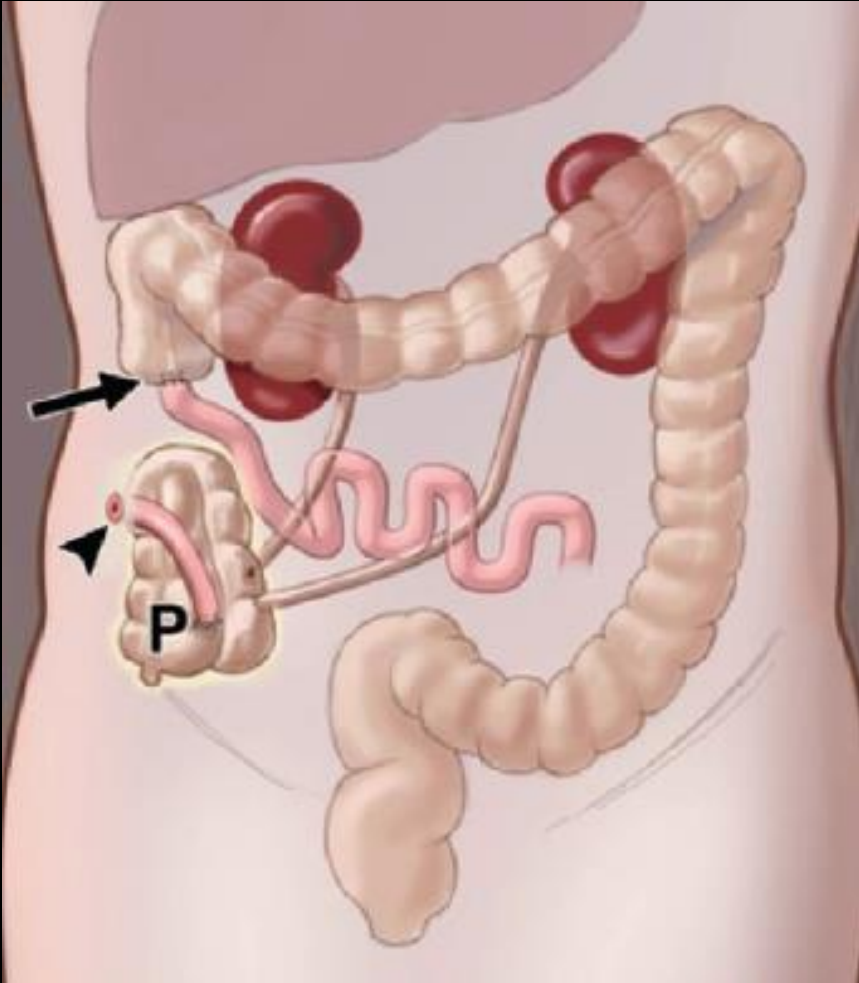




# Diversions with conduits

## Heterotopic

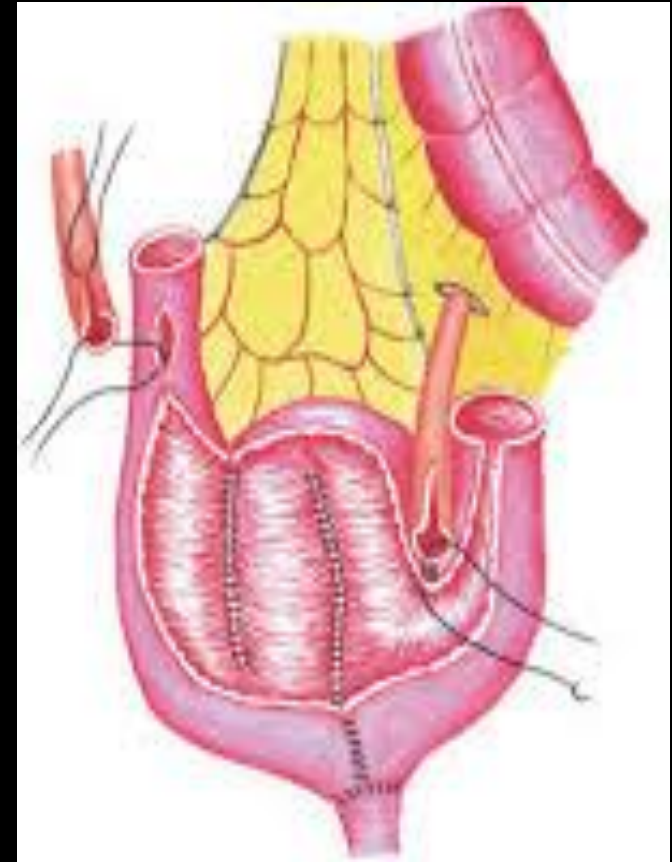
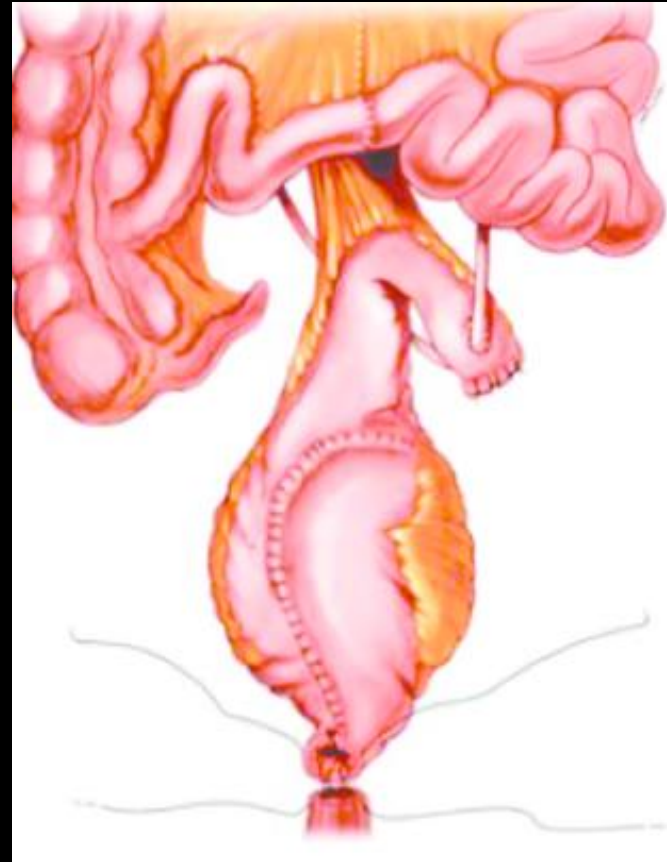
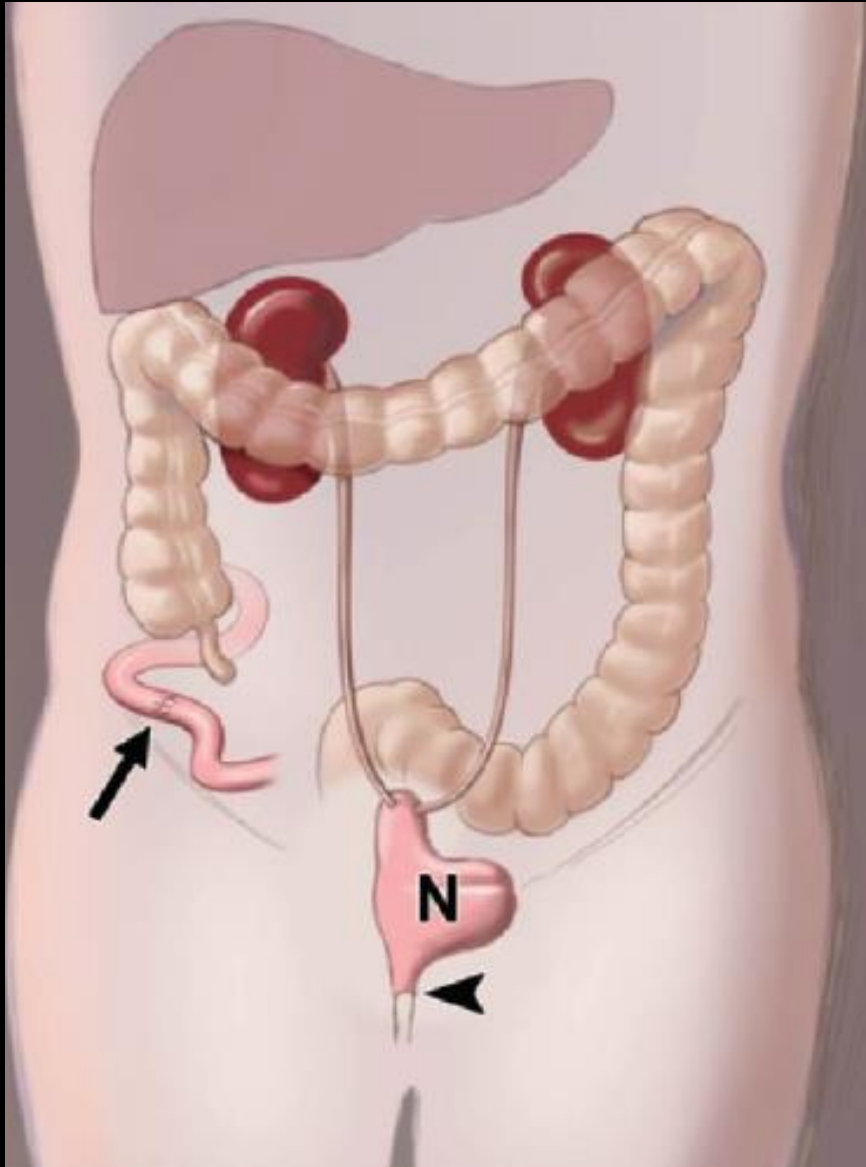
## continent



# Diversions with conduits

## Orthotopic (aka "neobladder")

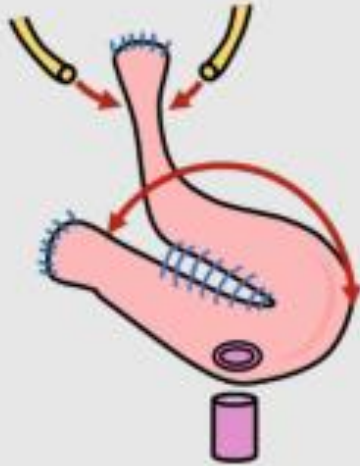
### continent



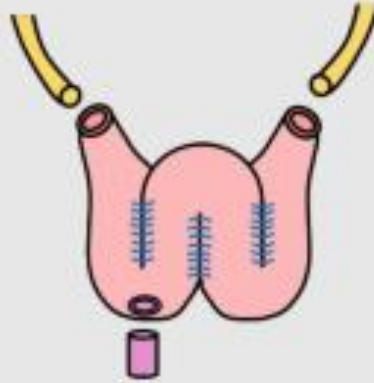


# Ileum

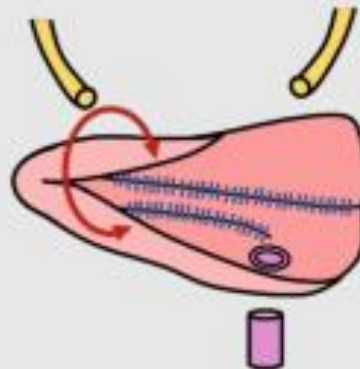
Studer



Hautmann

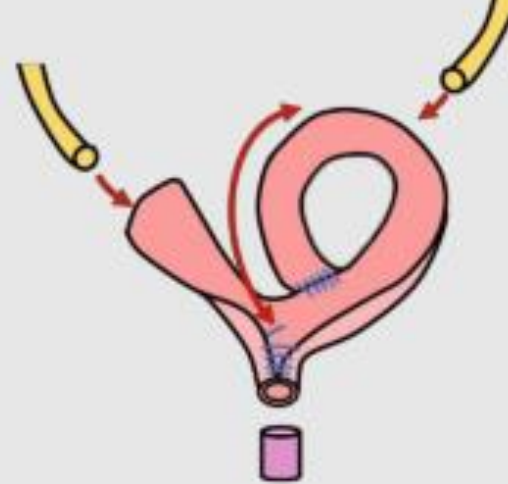


Camey II

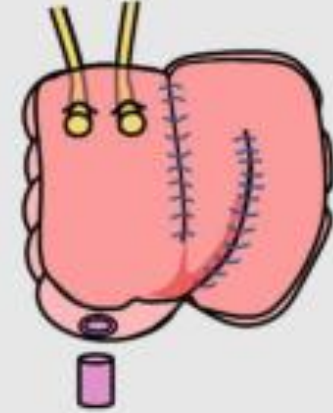


# Colon

Padua



Mainz

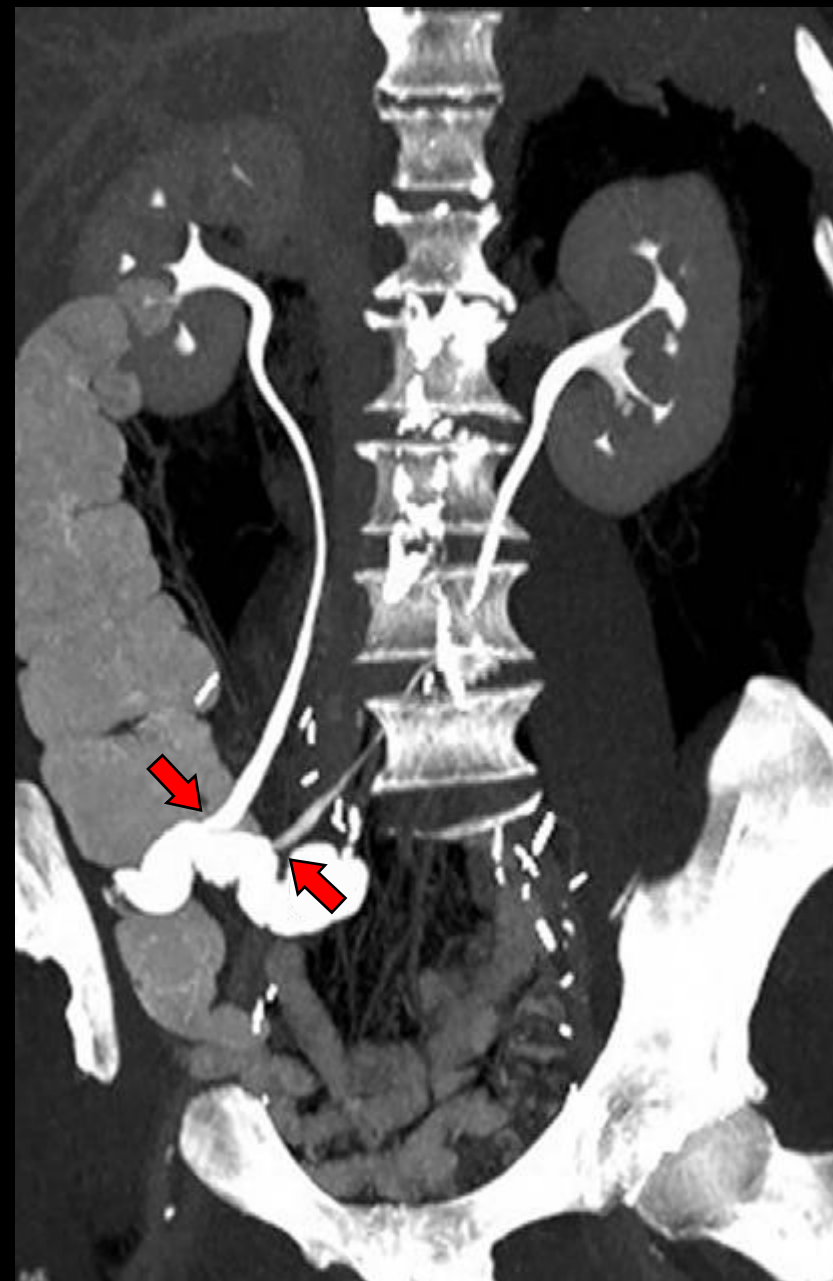
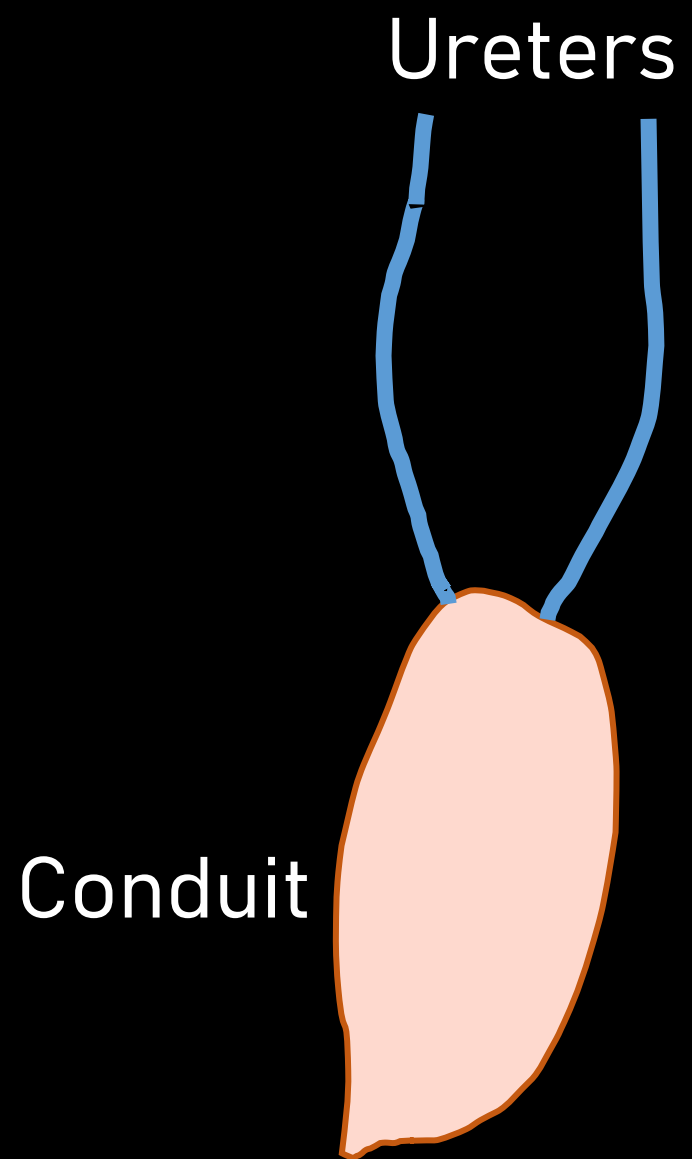


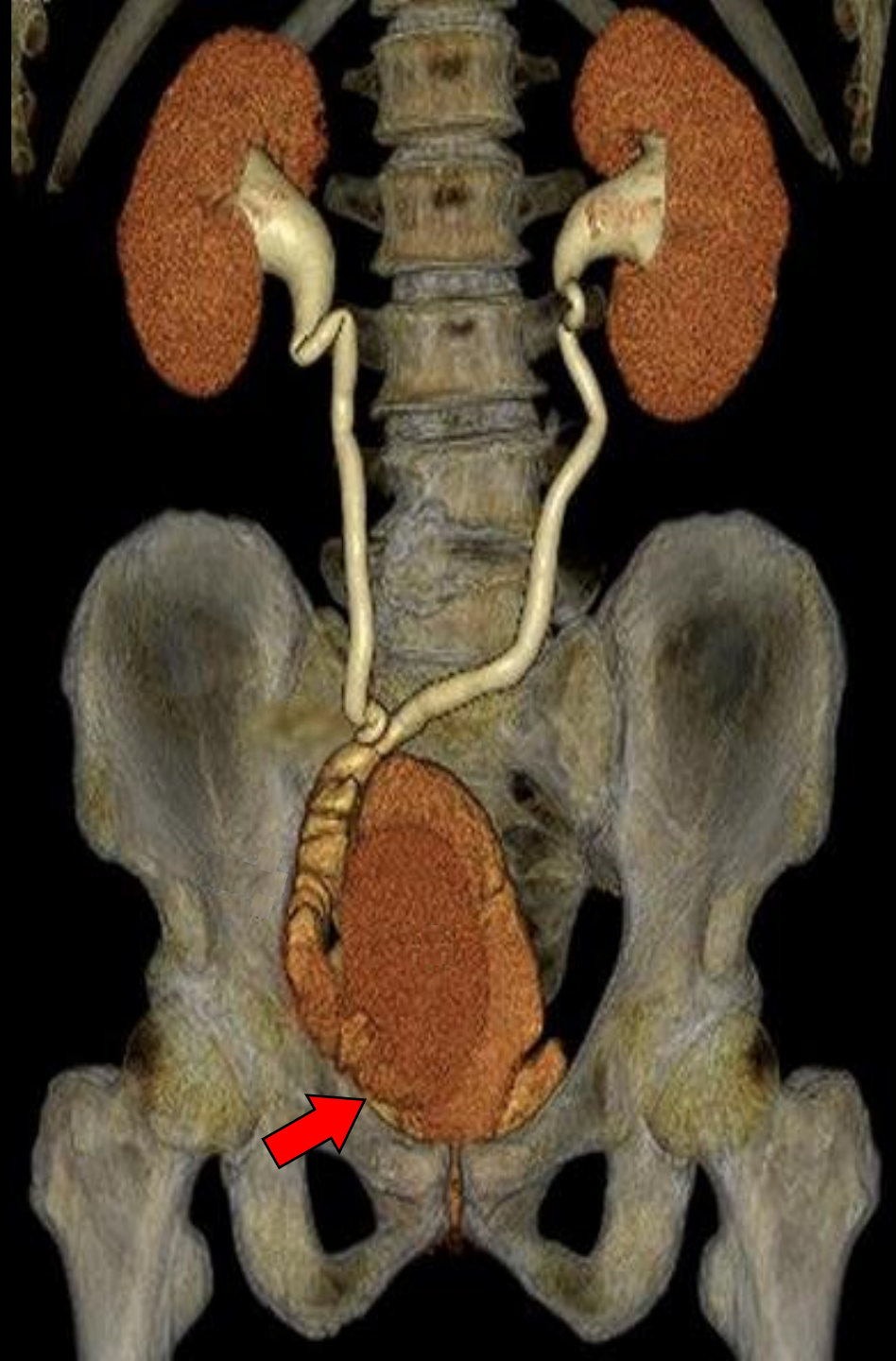
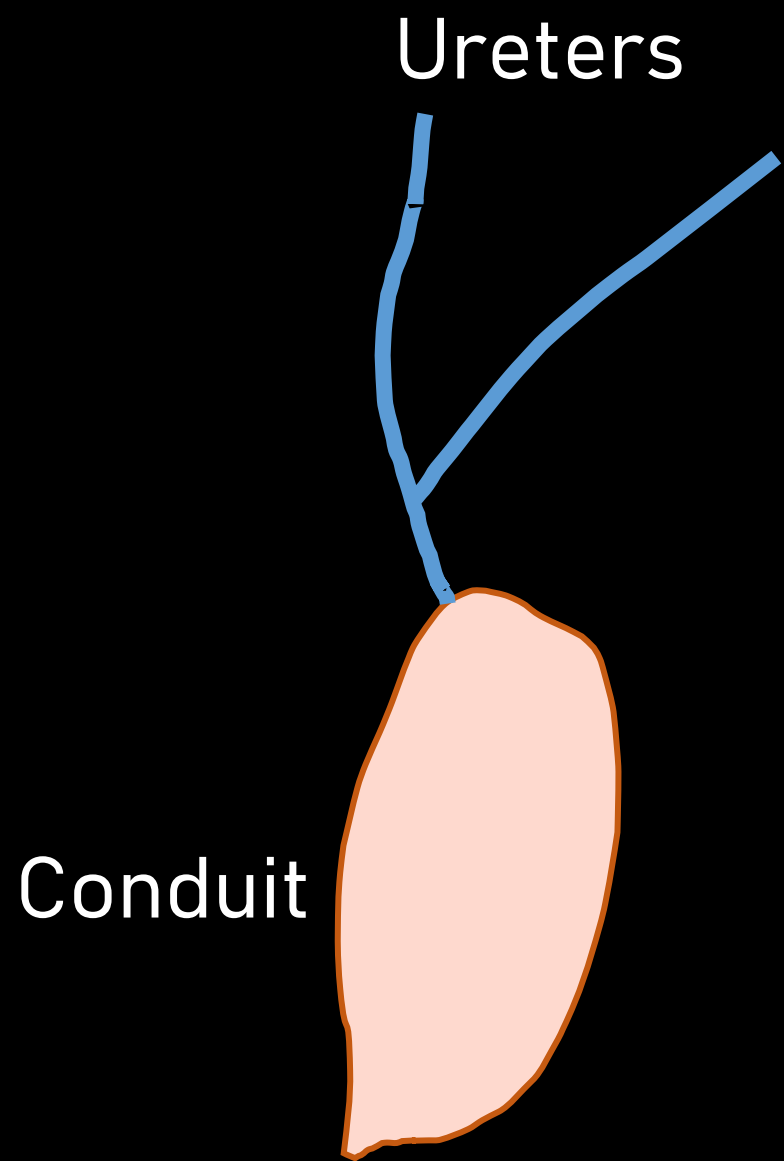
Reddy



Le-Bag

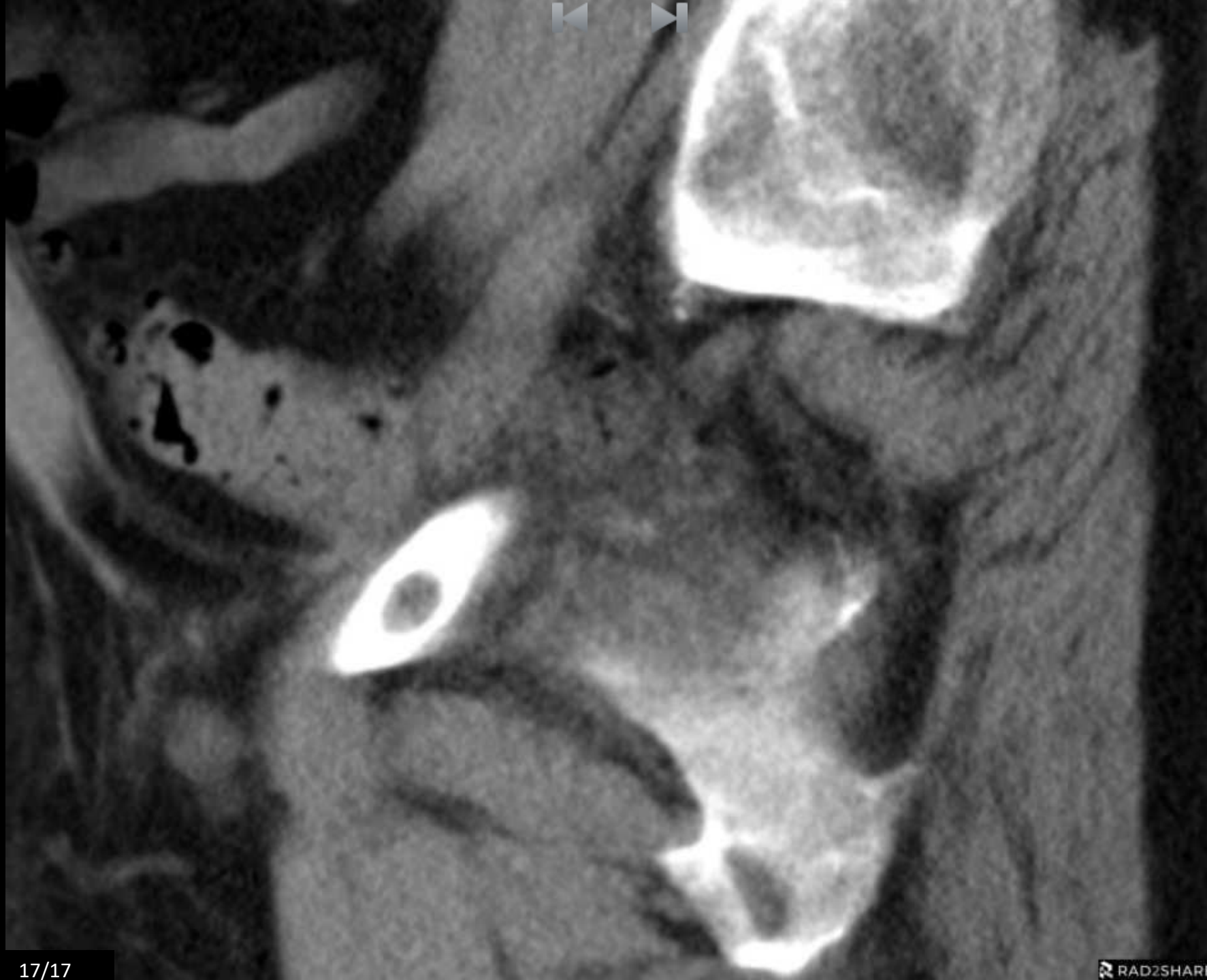








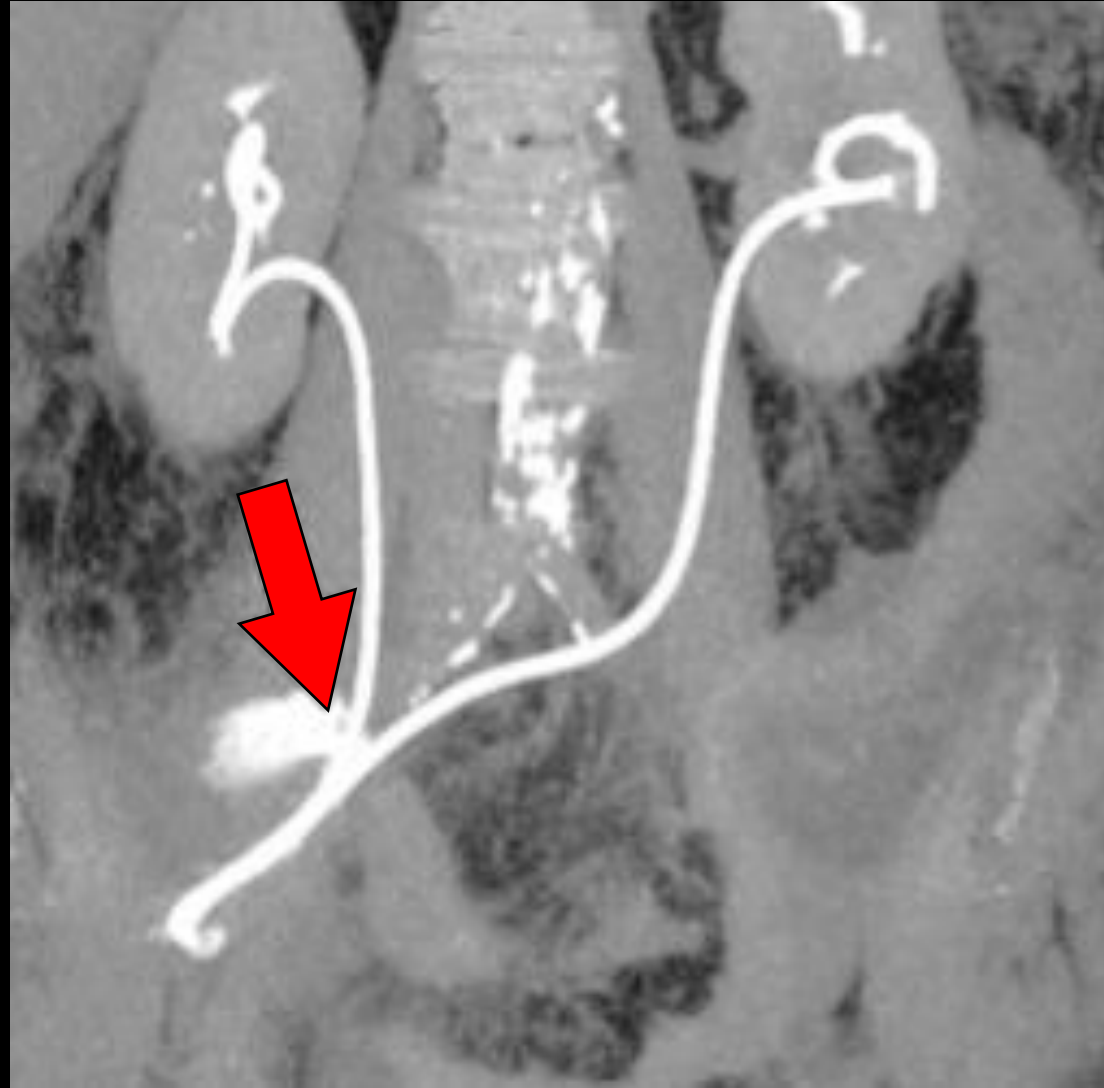




# Early Complications

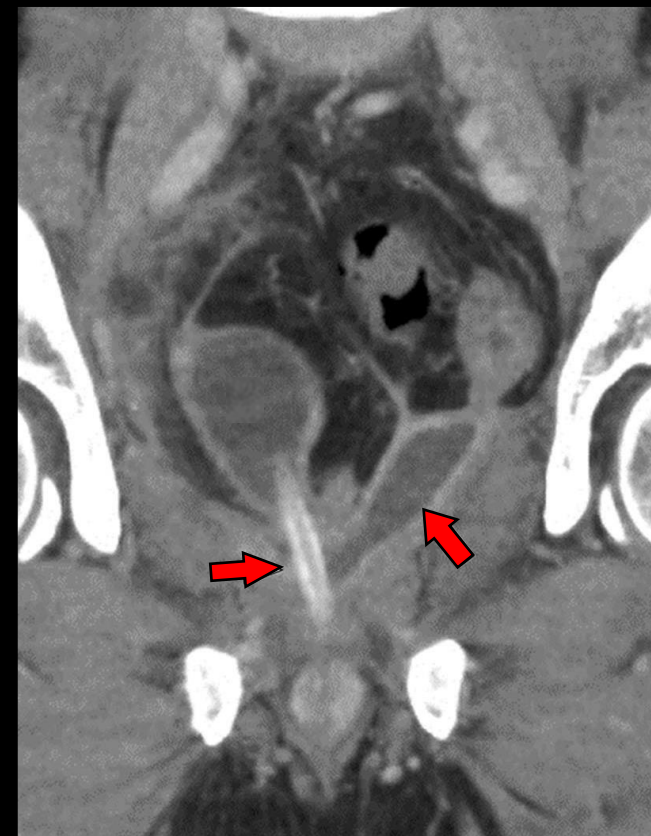
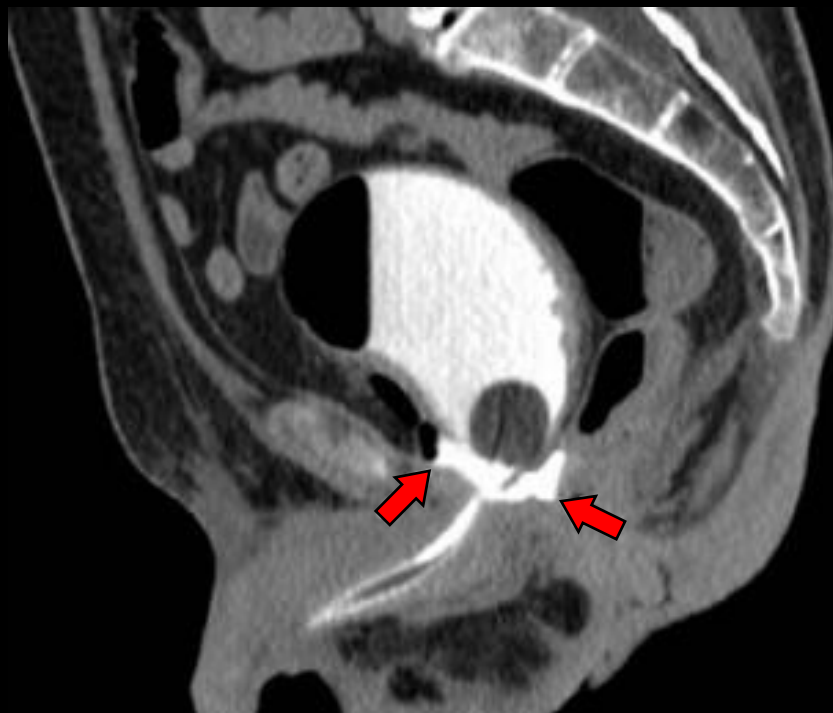
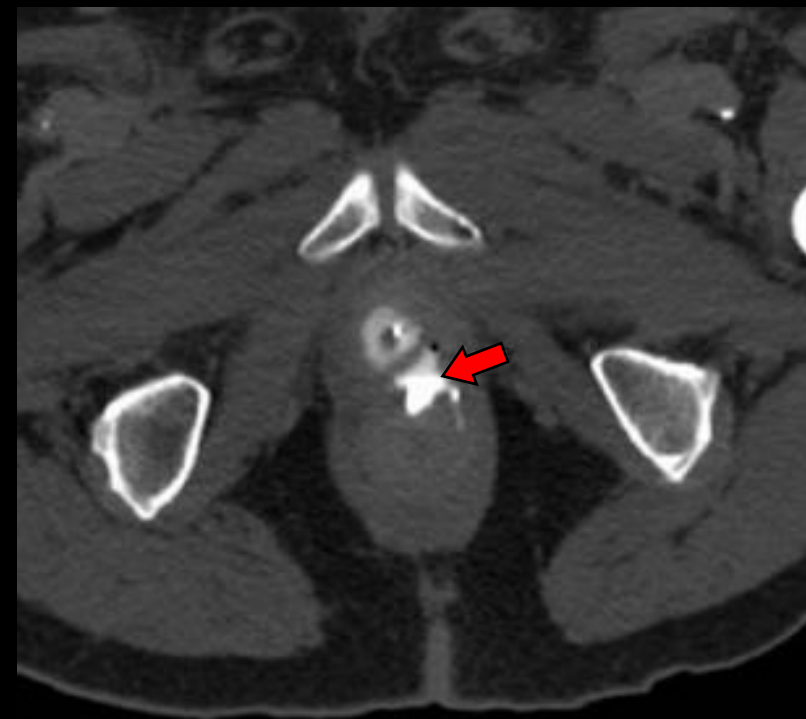


Leakage of urin

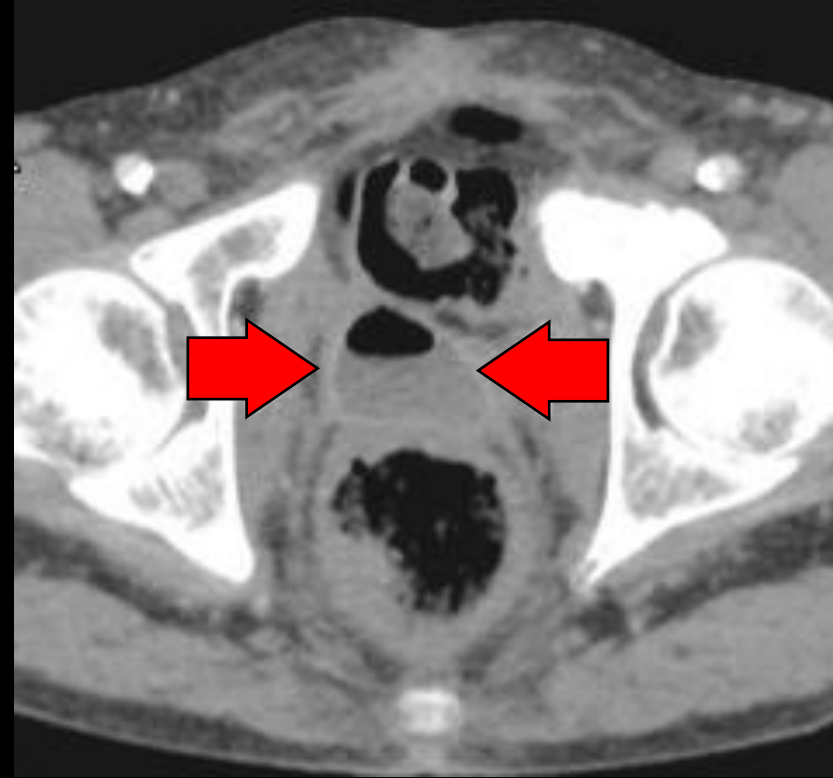
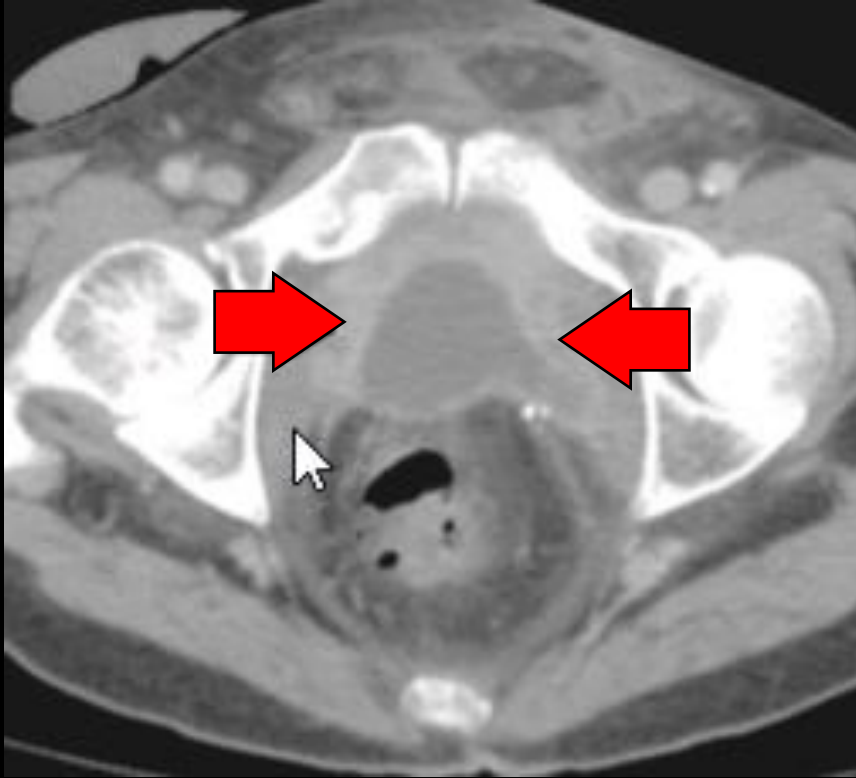


Ureteral Anastomosis

# Leakage of urin

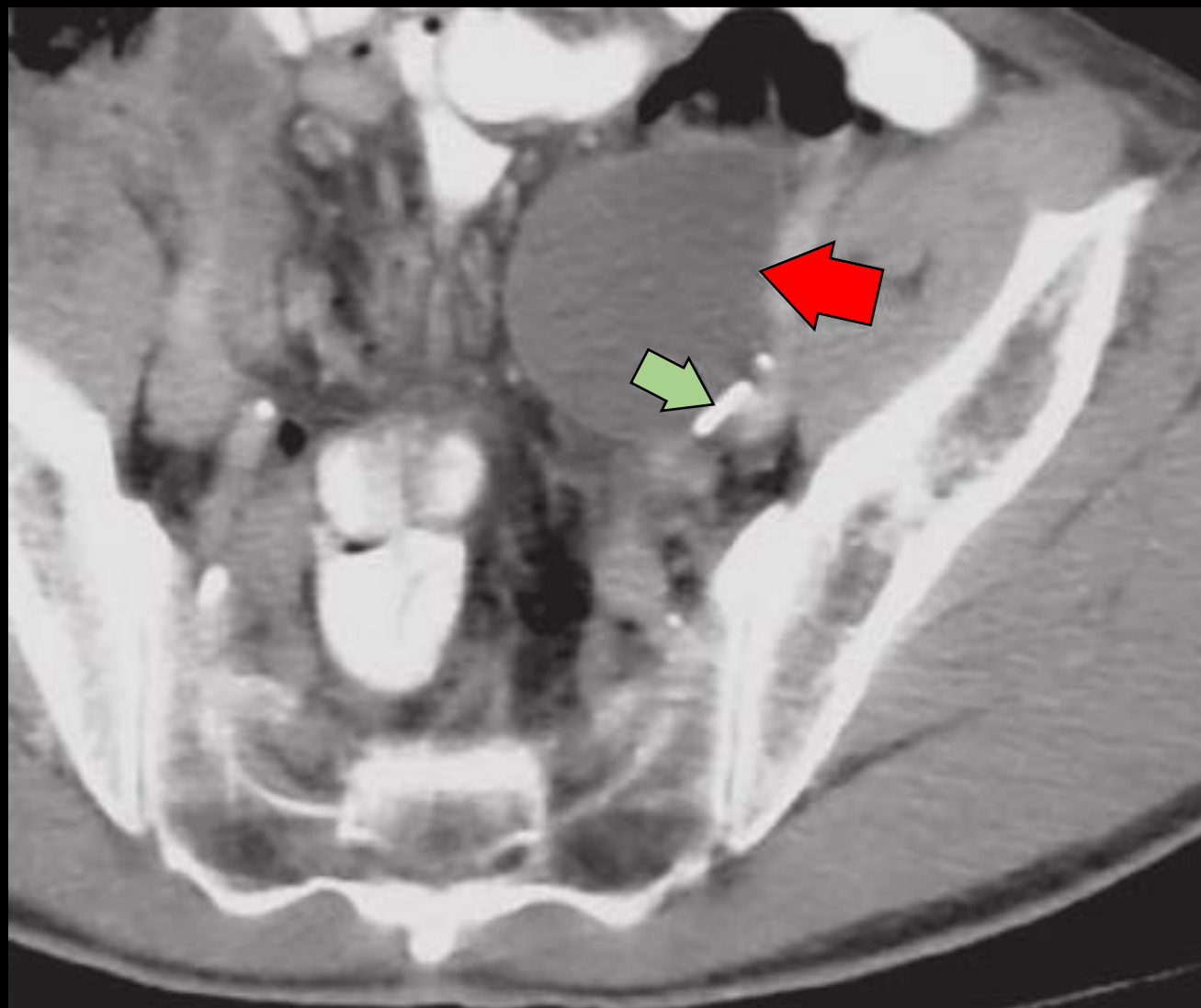


# Urethral Anastomosis



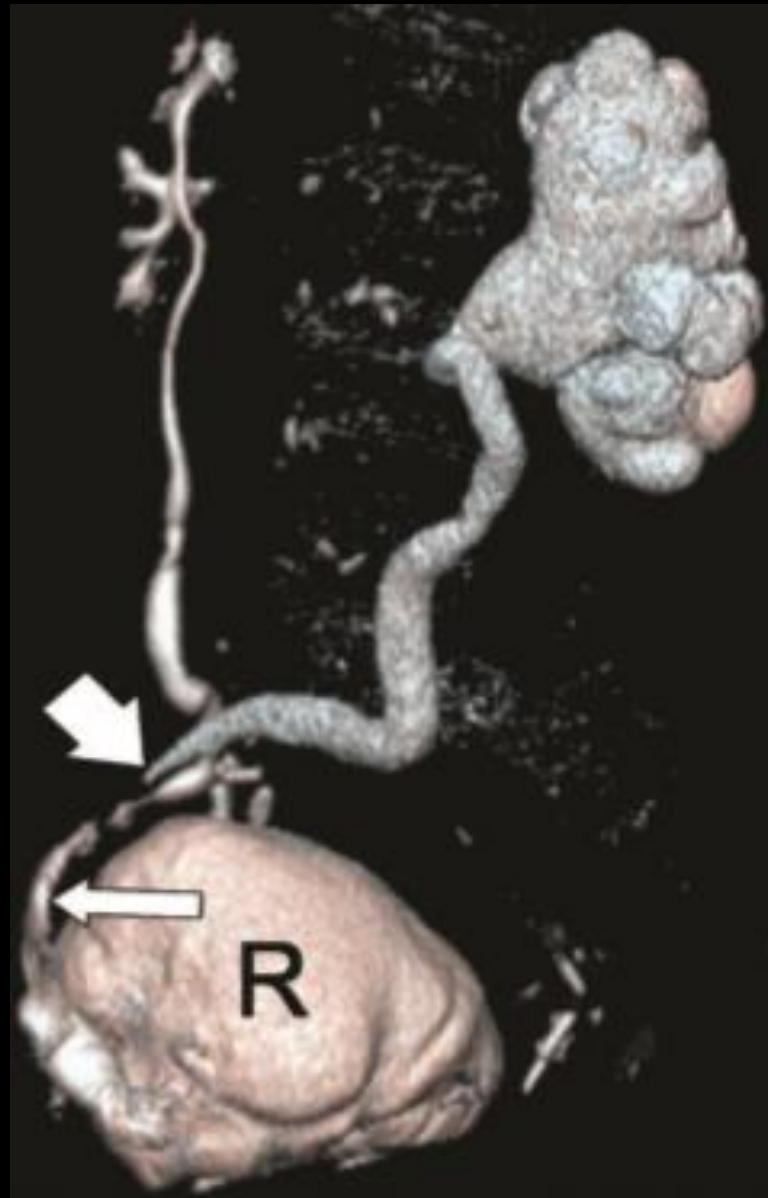
Collections (haematoma and abscess) at cystectomy site



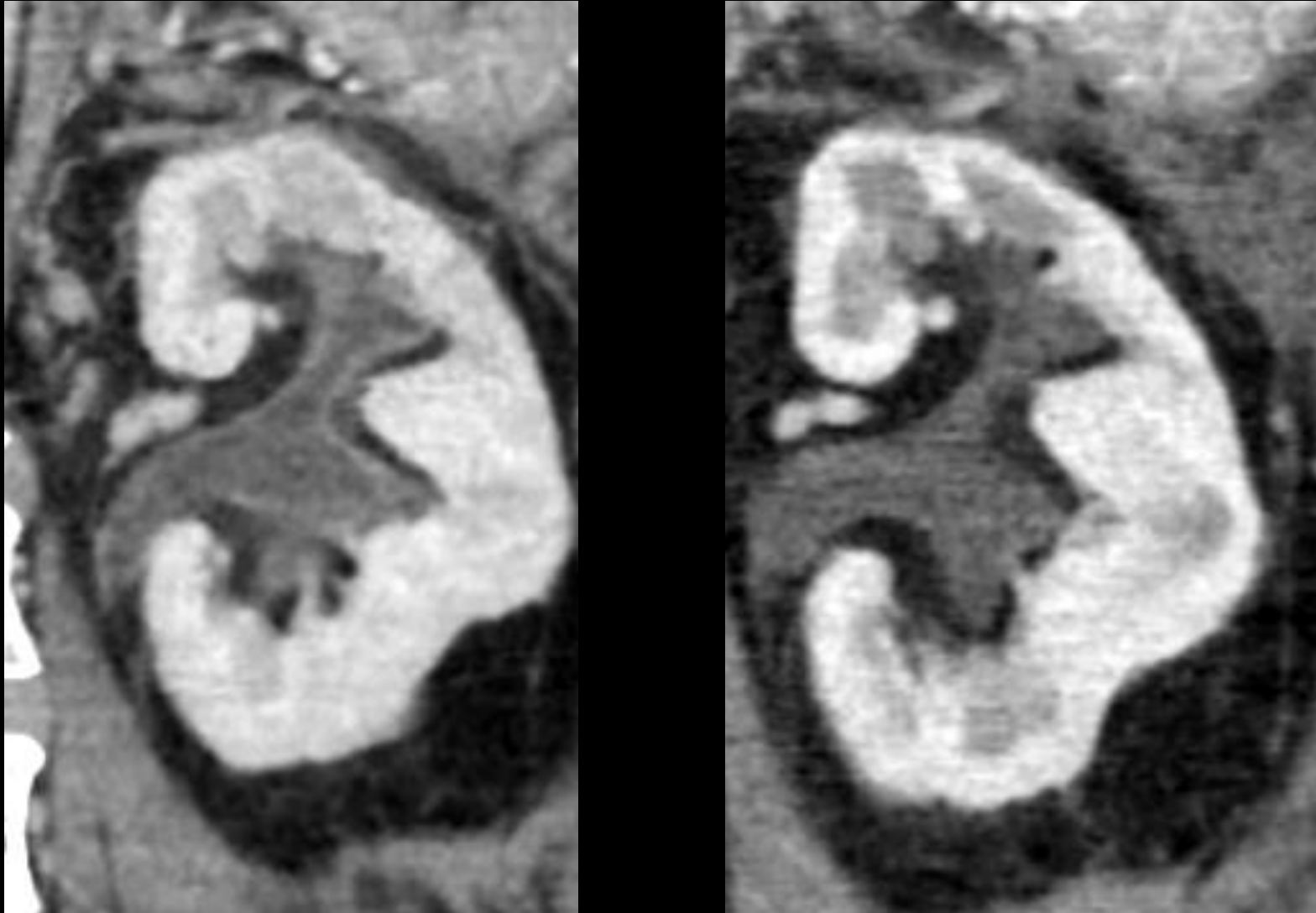


Lymphocele

# Early – Late Complications

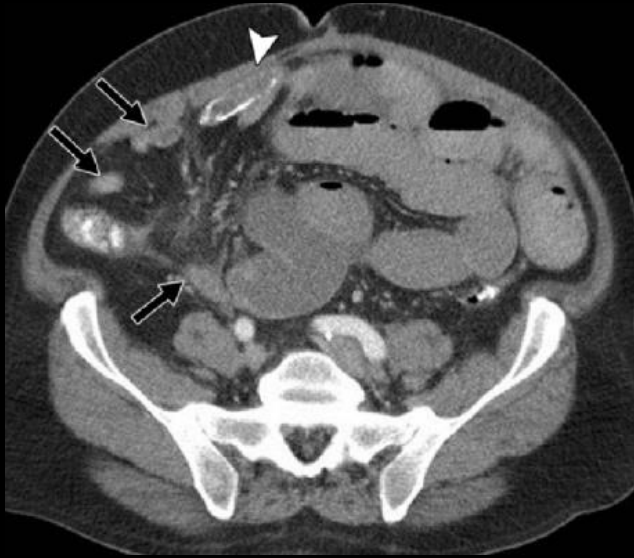






Pyelonephritis

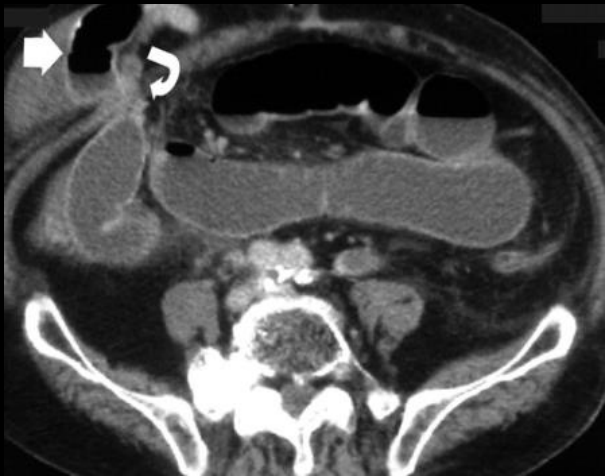
# Late Complications



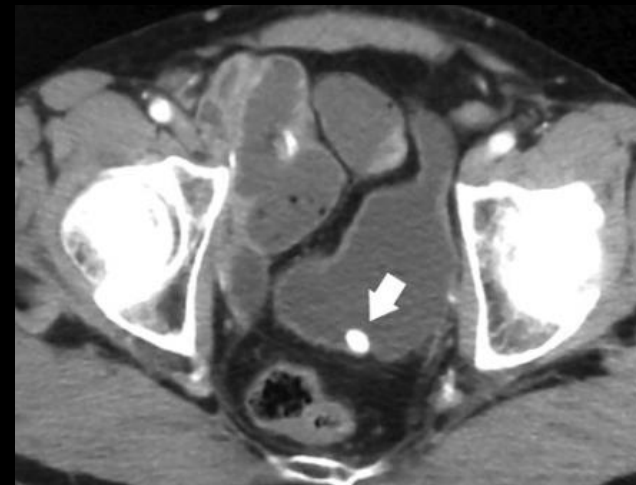
Adhesions



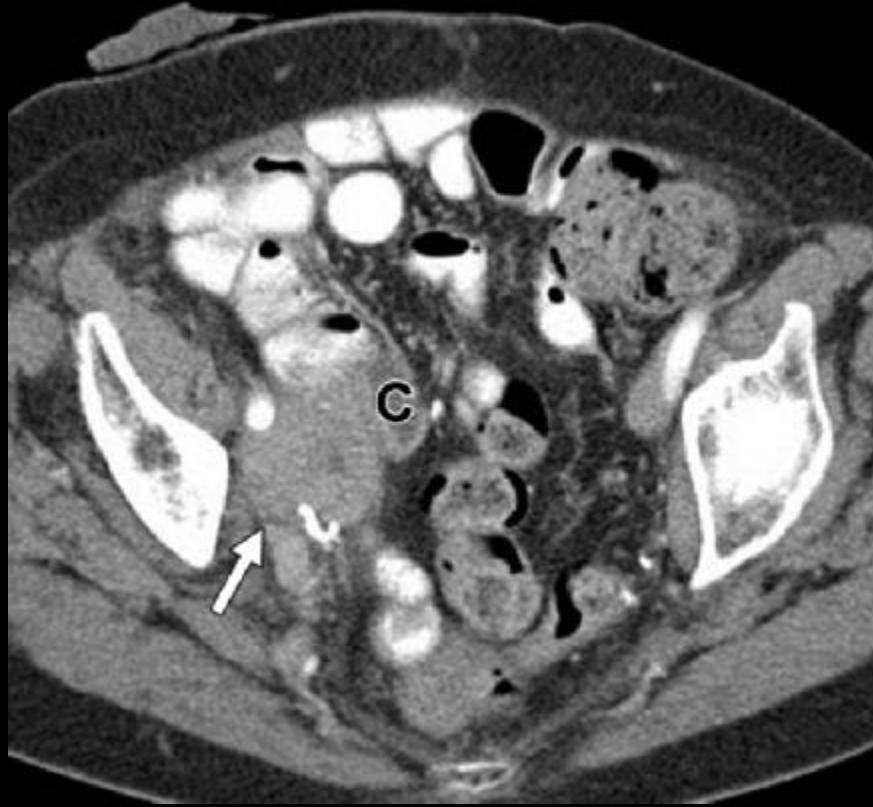
Hernia



Hernia with strangulation



Stones



Metastasis – Local recurrence



# **Imaging Strategies in Emergency**

The **first** rule is

Try to obtain as much information as possible to plan the scan

1) What surgery was performed?

2) How long ago?

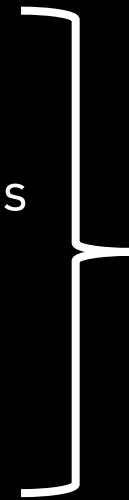
3) What is suspected?

- Haemorrhage?
- Infection?
- Renal failure?
- Intestinal obstruction?

# Scenario #1

Immediate postop, abdominal pain

- Rule out bowel obstruction / paralysis
- Rule out haematoma
- Rule out urinary leakage



- Unenhanced scan
- Arterial phase scan
- Venous phase scan
- Excretory phase scan



VNE

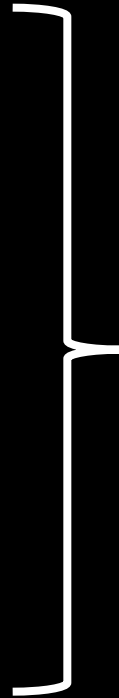
Split bolus

Decision after  
reviewing the  
images

## Scenario #2

Few days postop, abdominal pain

- Rule out bowel obstruction
- Intestinal anastomosis complications
- Rule out collection
  - Haematoma
  - Abscess
  - Lymphocele
  - Urinoma



- Venous phase scan
- Excretory phase scan



Decision after  
reviewing the  
images



## Scenario #3

Late postop (life-long risk), abdominal pain and/or renal failure

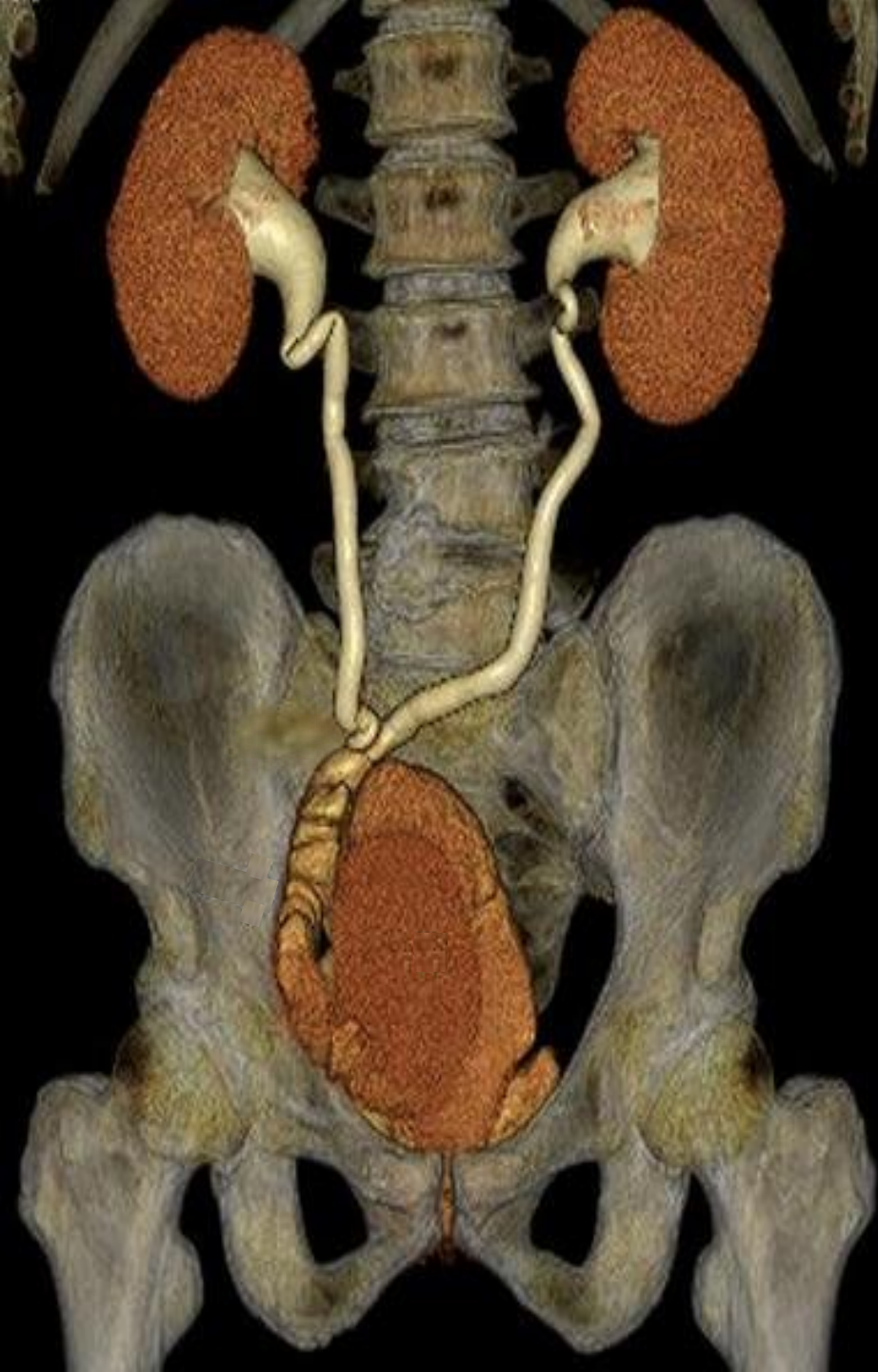
- Rule out bowel obstruction
- Rule out ureteral anastomotic stricture
- Rule out late complications
  - Metastases
  - Recurrence
  - Stones



Venous phase scan

# Conclusions

- 1) Familiarise yourselves with the postoperative anatomy
- 2) Plan your scan wisely
- 3) Think early vs late complications
- 4) If you see hydronephrosis... most of the time you can't be sure: reflux or stricture?



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## Urinary Diversions: a Roadmap *Thanks!*



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