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PERCUTANEOUS NEPHROLITHOTOMY

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PERCUTANEOUS NEPHROLITHOTOMY

- ***INTRODUCTION***
- ***INDICATIONS***
- ***TECHNIQUE***

INTRODUCTION

Minimally Invasive surgery.....why?

- ***TERMINOLOGY***
- ***PCNL,PNL,PCN,TUL,RIRS.....***

OPEN SURGERY



MIS



PCNL

TERMINOLOGY

<i>Procedure</i>	<i>Sheath outer diameter</i>
Standard PNL	>22F
Mini-PNL	≤22F
The minimally invasive PNL	18F
Ultra-mini PNL	11–13F
Mini-micro PNL	8F
Micro-PNL	<7F
Super mini-PNL	7F

INDICATIONS

- ⊙ *Staghorn calculi*
- ⊙ *Stone larger than 20 mm*
- ⊙ *Stone larger than 10mm in lower pole*
- ⊙ *Failed ESWL*
- ⊙ *Kidney anomalies*
 - ⊙ *caliceal diverticula*
 - ⊙ *Horseshoe kidney*

CONTRAINDICATIONS

- *Active UTI*
- *Uncorrected coagulopathy*
- *Pregnancy*
- *Inability to tolerate the operative position*

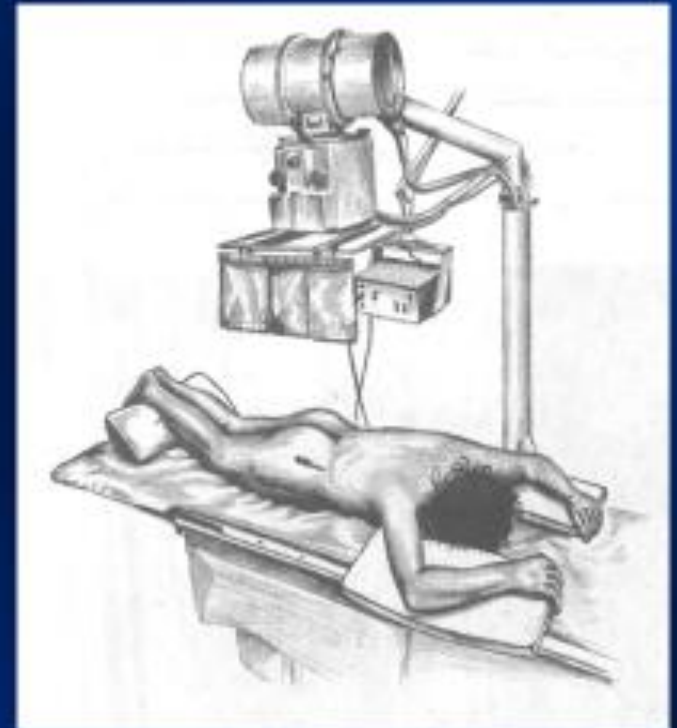
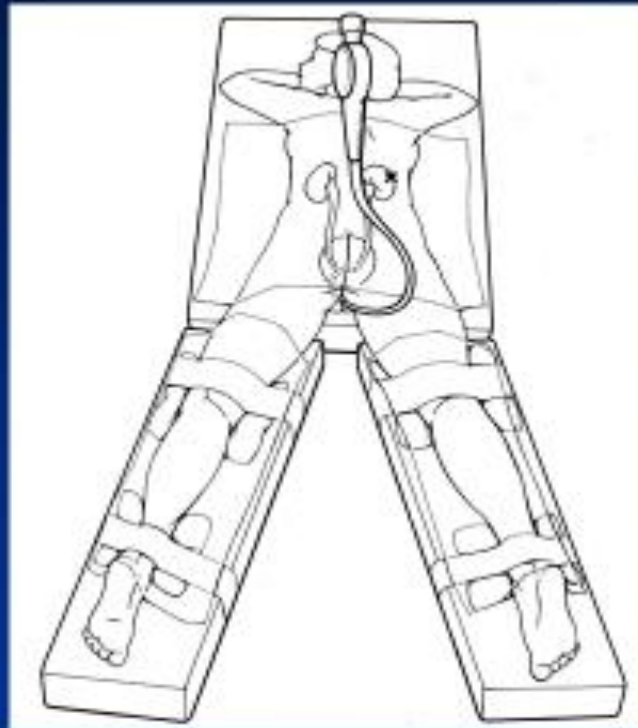
THECHNIQUE

- 1) *Access*
- 2) *Dilatation*
- 3) *Amplatz sheath insertion*
- 4) *Lithotripsy and removal of stone fragments*

ACCESS

- 1) *Patient positioning*
- 2) *Fluoroscopy guided*
- 3) *Ultrasonography guided*

FLUOROSCOPY GUIDED



FLUOROSCOPY GUIDED

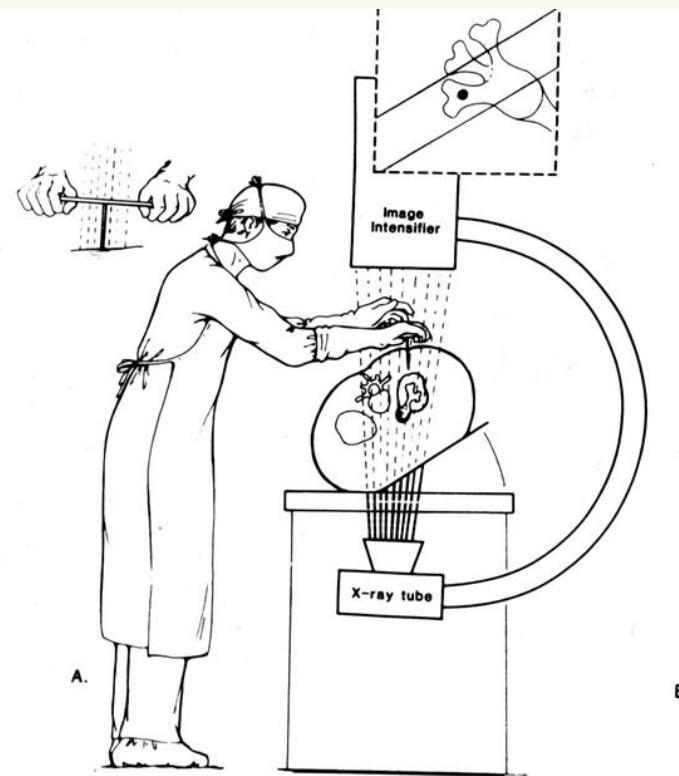
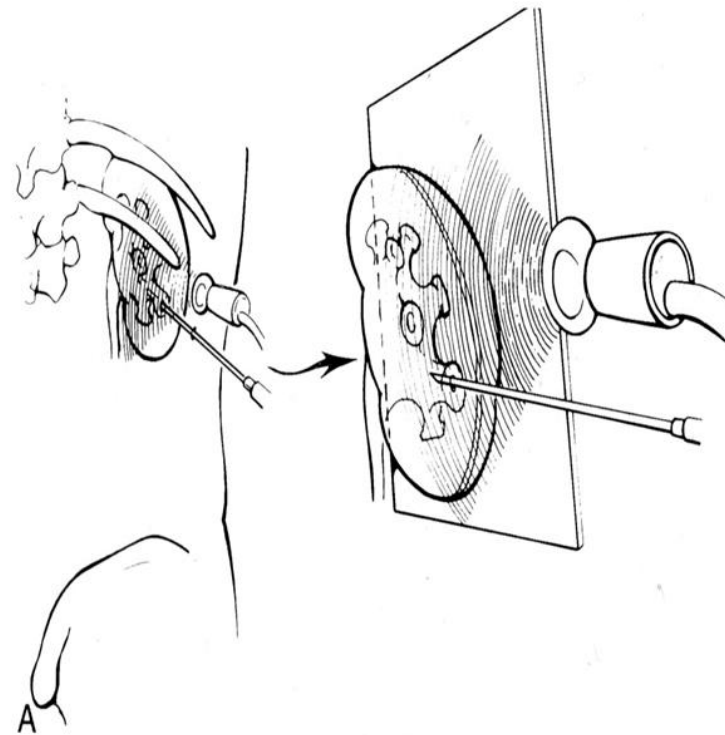
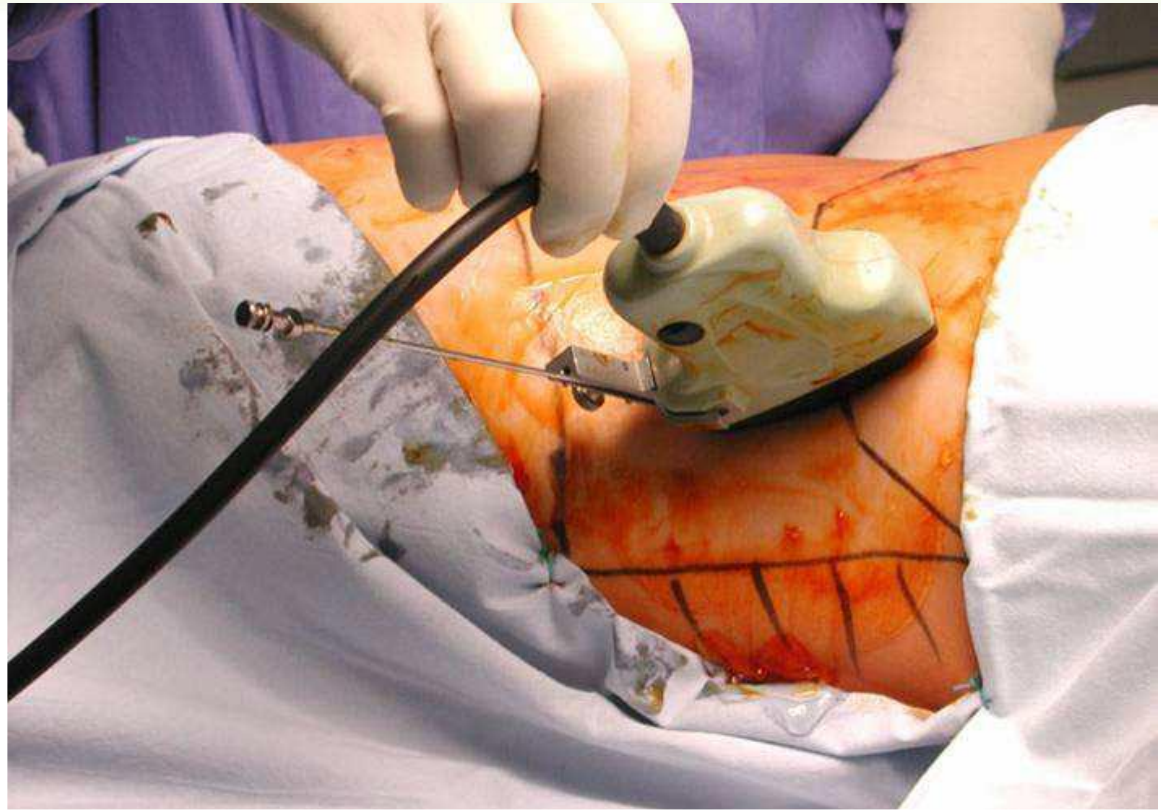


Figure 94-9. A. To facilitate a perpendicular entry into a posterior calyx, the

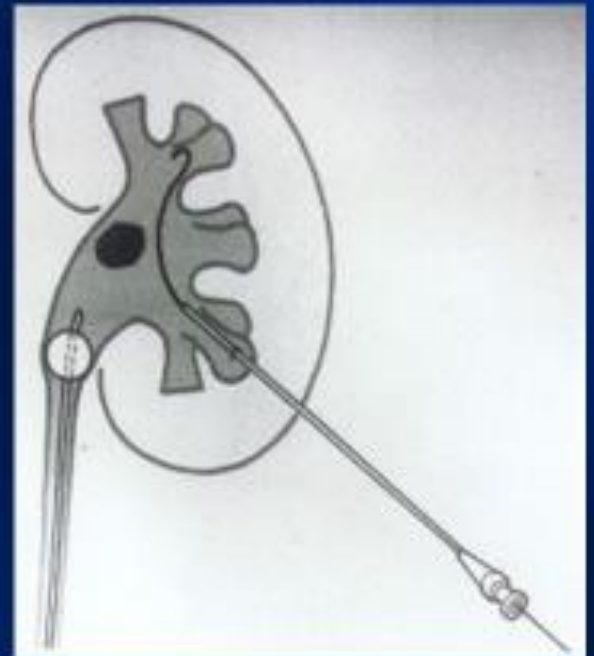
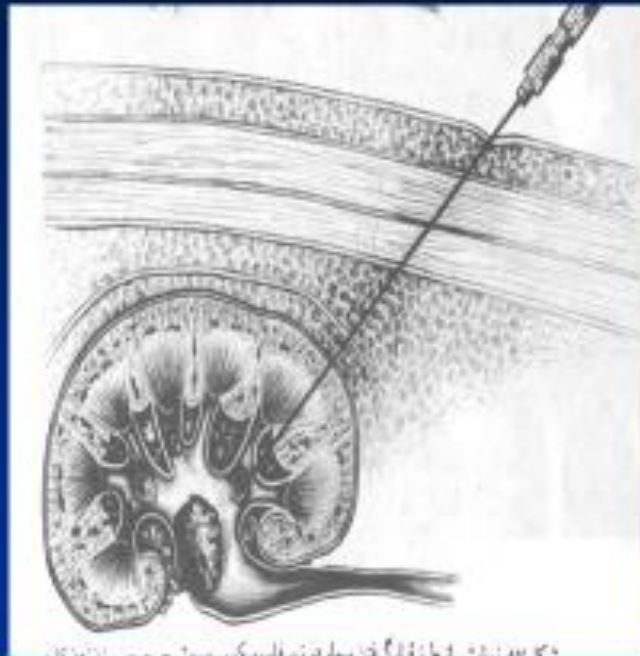
Ultrasonography guided



ULTRASONOGRAPHY GUIDED



PUNCTURE



TRACT DILATATION

- 1) *Coaxial metal dilator*
- 2) *Facial dilator*
- 3) *Balloon dilator*

COAXIAL METAL DILATOR



COAXIAL METAL DILATOR



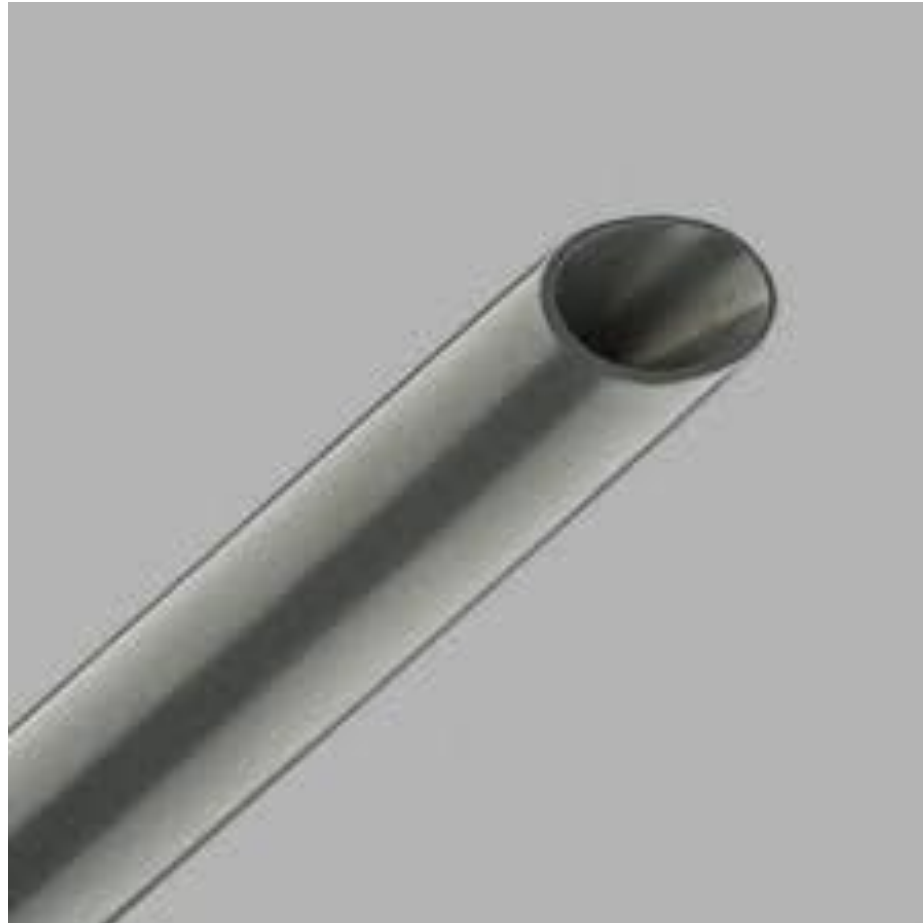
FACIAL DILATOR



AMPLATZ SHEATH

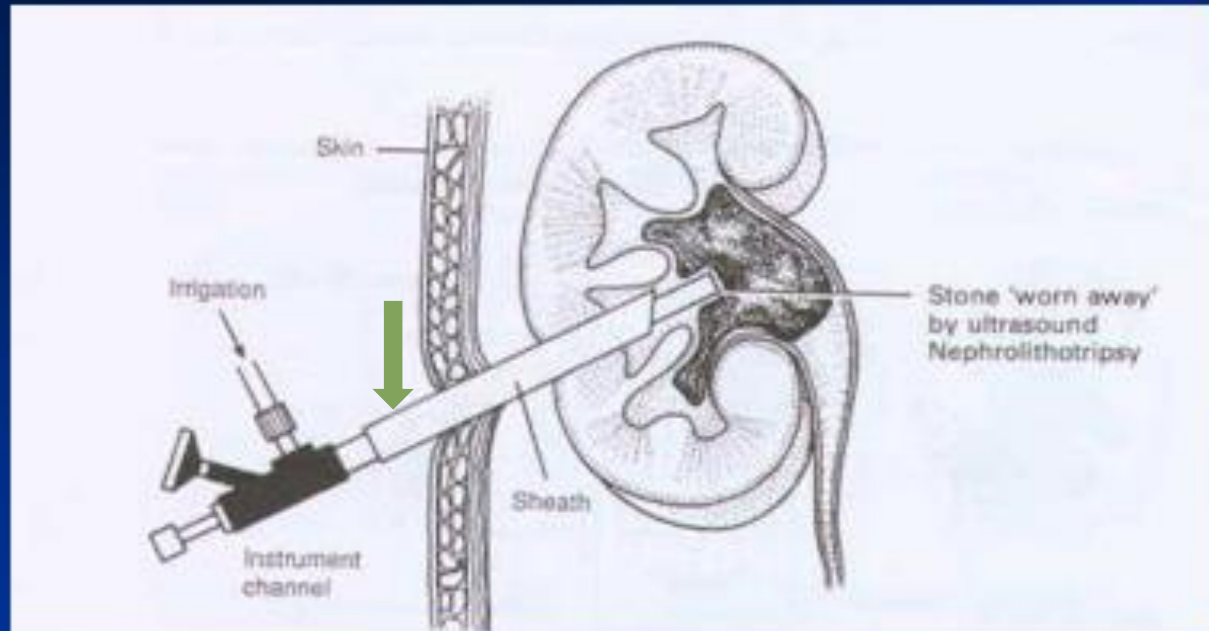


AMPLATZ SHEATH



AMPLATZ SHEATH

Percutaneous Nephrolithotomy (PCNL)

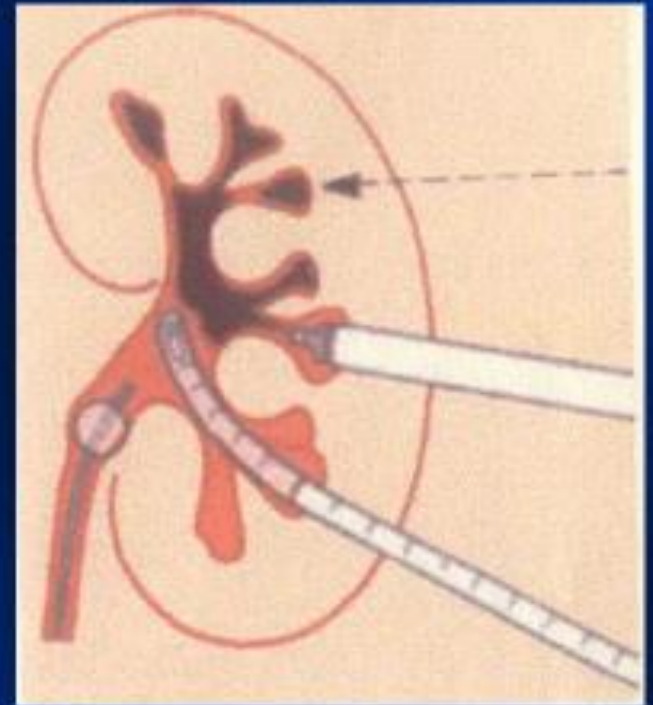
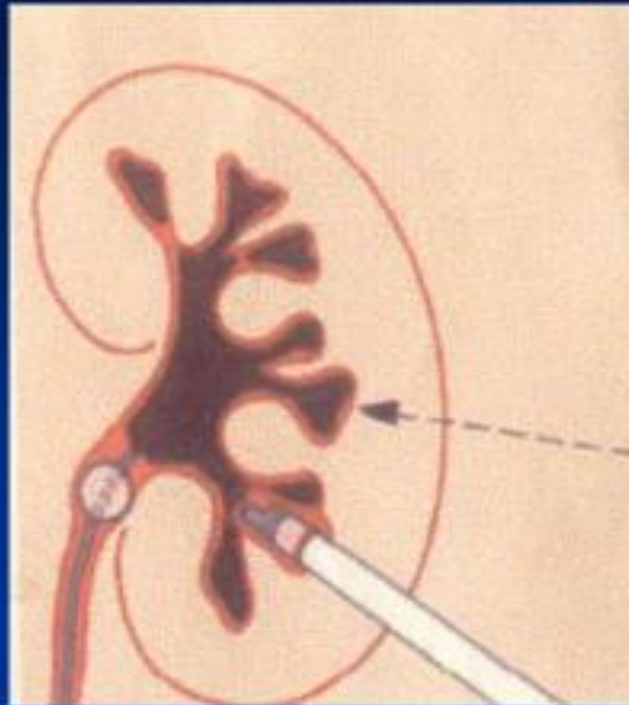


NEPHROSCOPY

Extra Long Instruments



NEPHROSCOPY



LITHOTRIPSY

- 1) **Ultrasonic**
- 2) **Pneumatic**
- 3) **Laser(Ho:Yag)**

STONE FRAGMENTS



CASE 1



CASE 2



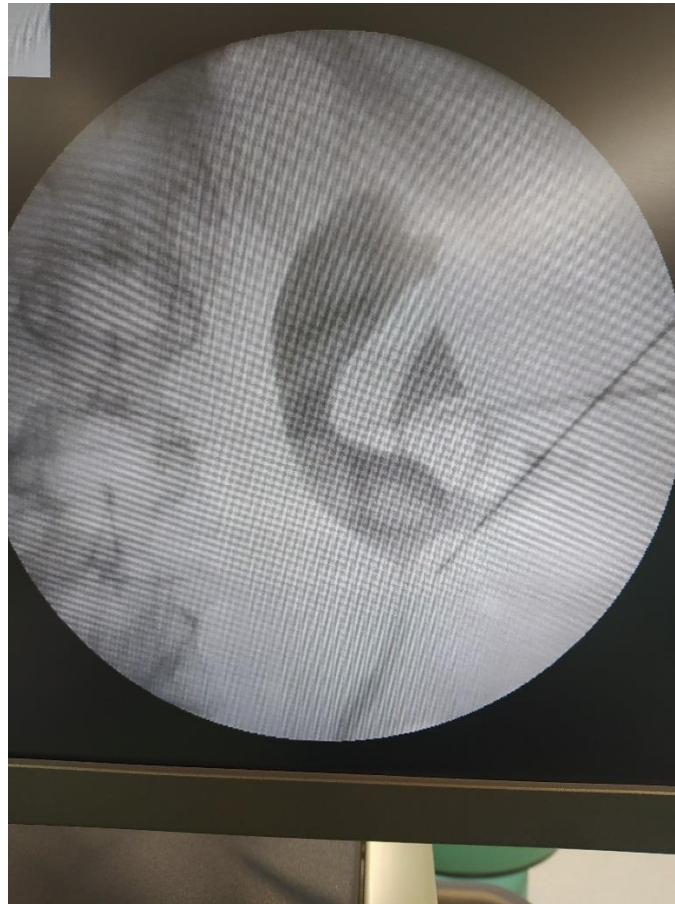
CASE 3



CASE 4



CASE 5

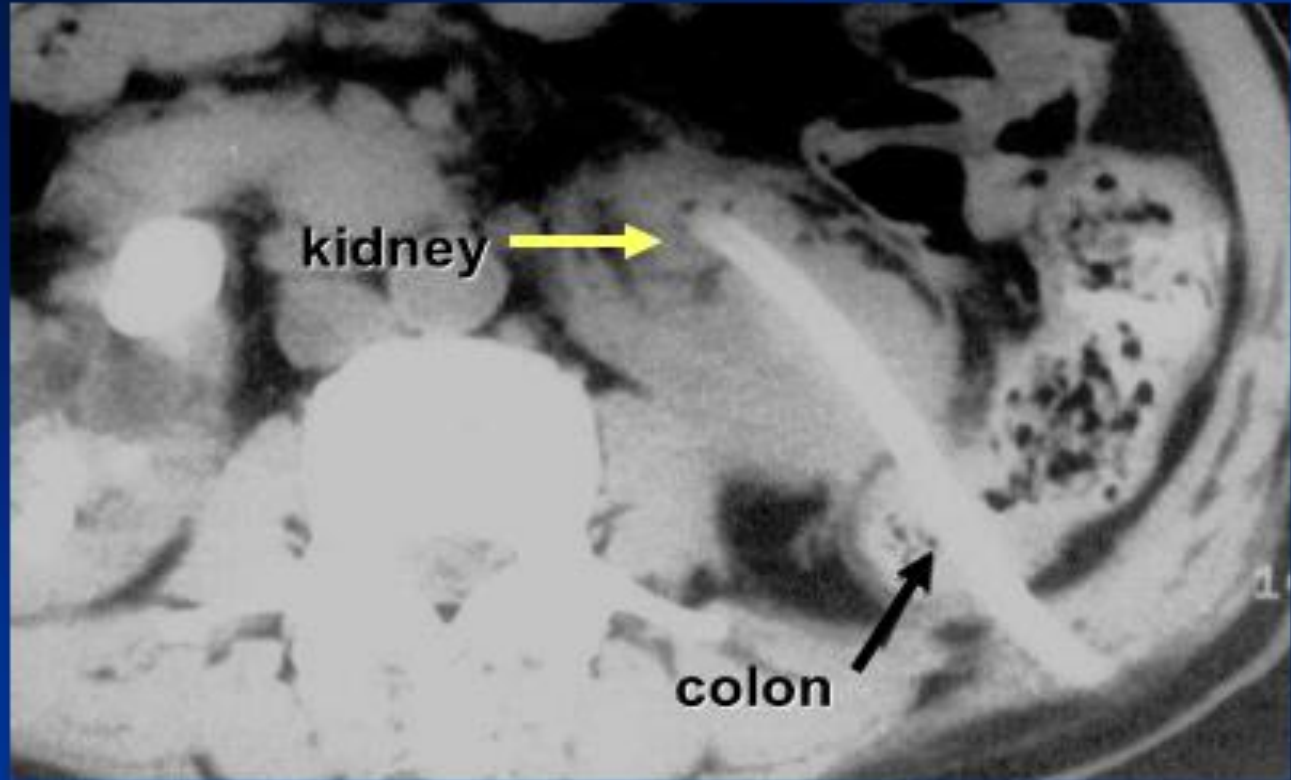


COMPLICATIONS

- Hemorrhage
- Perforation of renal pelvis
- Gram-negative sepsis
- Fluid overload
- Colon perforation
- Splenic or hepatic injury
- Uro-cutaneous fistula

COMPLICATIONS

Colon Perforation



COMPLICATIONS

Splenic Injury



COMPLICATIONS

Embolization



QUESTIONS....ZZZZ??





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