Pediatric PCNL

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Technical consideration

• Peripheral calyceal puncture.
• Minimal angulation.
• Reduce the tract size.
• Complete stone clearance.
6 year-old boy, 2 cm Rt renal pelvic stone undergoing Mini PCNL

Retrograde Ureteric Catheter Placement

• 5 Fr open end ureteric catheter.
• Preferably pass it over a sensor guide wire (chance of submucosal passage will be less)
• Don’t force it across an obstructing stone.
• If passage is easy, place the tip up in the upper calyx.
Set Of Instruments

Position
OR Orientation

Dose Reduction Strategy
Patient positioning

• Patient is positioned as close as possible to image intensifier

• X-ray tube is as far away as possible from patient’s table in order to avoid excessive skin dose
**Dose Reduction Strategy**

- Pulsed fluoroscopy, as low as 3 frames/sec.
- Use of last image hold Technique.
- Well trained & Designated fluoroscopy technician is invaluable.
- Fluoroscopy timing alerts during procedure.

**Principal of Puncture**

- Fluoroscopic guidance
- Use 2 planes
- Bull’s eye technique
- AP for direction and distance
- Oblique for depth
Puncture

Planning the Puncture
Placing the Amplatz Sheath

Stone Fragmentation

Holmium Laser

Pneumatic
Confirmation of Stone Clearance
Fluroscopically and Endoscopically

Nephrostomy tube placement
Take Home Messages

- Plan the calyx of entry well.
- Mini PCNL.
- Complete calculus clearance; Essential.
- Minimize radiation exposure.
- Irrigation fluid (saline) at body temperature to avoid hyothermia.

Thank you!