Cystoscopy-guided insertion of Amplatz sheath in percutaneous cystolithotomy for large burden bladder stone

A. Al-Naimi, T. Gul, A.A. Majzoub
Department of Urology, Hamad Medical Corporation, Doha, Qatar

Introduction: Bladder stones account for approximately 5% of urinary calculi.1 Currently, surgical treatment options include open or percutaneous cystolithotomy (PCCL) and transurethral cystolitholapexy.2,3,4,5 The transurethral approach can be traumatic to the urethra resulting in stricture formation, especially if instruments larger than 25F are used.6 PCCL spares the urethra thereby eliminating iatrogenic injury.7,8

Objective: The aim of this video is to describe PCCL for large bladder stones under cystoscopic guidance.

Materials and Methods: The procedure was done under general anesthesis with the patient in dorsal lithotomy position. A preoperative dose of intravenous antibiotics was given. Cystoscopy was done using a 22F sheath, 30-degree angle lens (Karl Storz™, Tuttlingen, Germany) and served as a guide during all the steps of the percutaneous puncture. After bladder filling, a midline stab incision was made over the anterior abdominal wall about 2 cm above the symphysis pubis. A Trocar needle (Cook Medical™, USA) was advanced, which helped in inserting a 0.038in guide wire into the bladder. The track was then dilated with balloon catheter to accommodate the 30F Amplatz sheath (NephroMax kit, Boston Scientific™, Miami, USA). A 25F nephroscope (Karl Storz™, Tuttlingen, Germany) could be introduced into the bladder through the Amplatz sheath. The stone was fragmented by ultrasonic lithotriptor (Swiss Lithoclast™, EMS, Dallas, USA) and all the fragments removed by stone forceps. During all the steps of the procedure, no fluoroscopy was used.

Results: The patient was 25 years old and had a 4cm bladder stone. The operative time was 45 minutes. Postoperative bladder drainage was achieved via a suprapubic 14F Nelaton catheter and a 16F Foley catheter. No peri-operative complications were noted. The patient stayed in the hospital for a total of 3 days. The suprapubic catheter was removed on second day and foley catheter on third day.

Conclusions: Cystoscope-guided PCCL is a safe, effective4, and minimally invasive procedure for large bladder stones.

References:

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