Complete Supine Tubeless Percutaneous Nephrolithotomy

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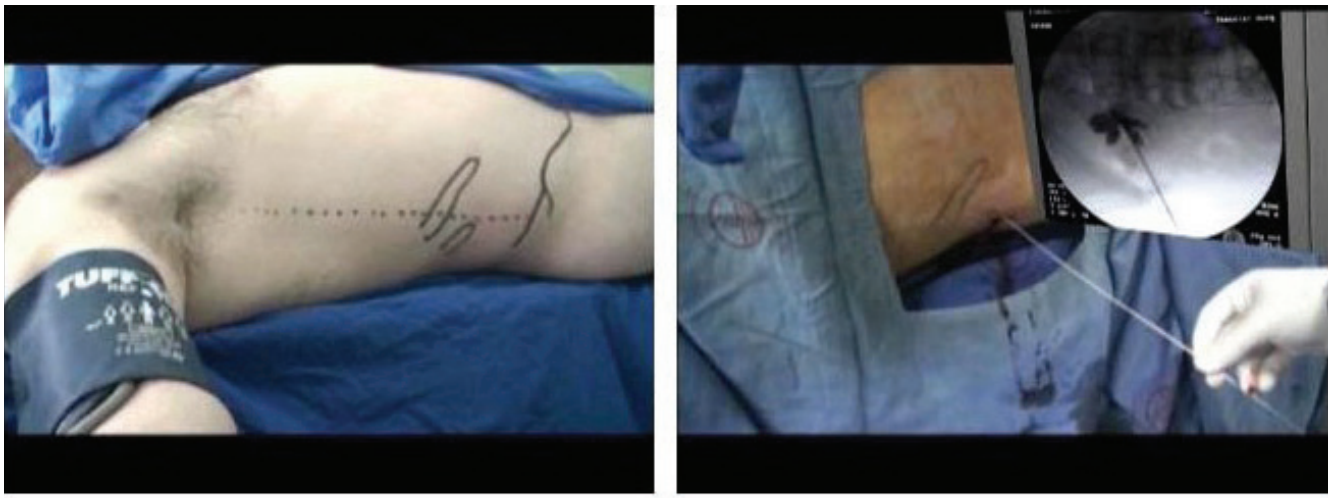
INTRODUCTION

Although, percutaneous nephrolithotomy (PCNL) has been usually performed in the prone position but recently other positions like supine and complete supine have been recommended by some endourologists.[1-8] The prone position has numerous disadvantages but a lot of published data have denoted some advantages of the supine PCNL, including less patient handling, easier access to the urethra, position changing in spinal or regional anesthesia is easier, better access to the airway of the patients, easier access to the upper calyces, evacuation of stone fragment, feasibility of simultaneous ureteroscopy, puncture site is far from the fluoroscopy tube, shorter operative time, more comfort for the patient, less risk of colon injury and higher tolerance for pulmonary or cardiovascular disease.[1,7-8] We aimed to share our experience of the complete supine percutaneous nephrolithotomy (csPCNL) with others by a video presentation with the details of the technique.

Keywords: nephrostomy; percutaneous; methods; humans; kidney calculi; surgery.



A B

Figure . (A) Shows mid auxiliary line, the 11th and the 12th ribs and the iliac crest. The puncture site in complete supine percutaneous nephrolithotomy is usually placed in an area between mid-auxiliary line and posterior auxiliary line under the 12th rib, (B) demonstrates the puncture site.

SURGICAL TECHNIQUE

This movie presents complete supine PCNL in a 52-year old man with multiple stones in his right kidney. After ureteral catheterization, the patient is drawn toward the edge of the bed. It is not necessary to draw the patient more, because the metal density of the bed might interfere during the access. Flank elevation or changing the position of leg isn't needed in complete supine position.

The puncture sites are selected between mid and posterior auxiliary line under the 12th rib (Figure)

The subcostal upper pole access is feasible in csPCNL with some technical maneuvers.[7] During the deep inspiration, the kidney moves to in a lower position and the upper calyx achievement by subcostal approach is feasible.[7] In complete supine position the fluoroscopy tube is far from the surgery field and the surgeon gets a wide space for working. The kidney movement is the marker that the needle is on the posterior surface of the kidney. Then, the surgeon chooses the best angle for achieving the calyx. Because the fluid may drench the surgeon's lower limbs due to the sitting position in complete supine, waterproof cover is used by the surgeon.

One of the most important differences between the complete supine position and the prone position for PCNL is evacuation of stone fragments. We have frequently seen the evacuation of stone fragments during the surgery.[1] Our option for all patients is tubeless PCNL unless the presence of significant residual stone or severe hemorrhage or significant extravasation.[2] The anesthesia time in the supine position is significantly shorter than the prone position.

CONFLICT OF INTEREST

None declared.

CONCLUSION

As we have shown in the movie that csPCNL is feasible and the surgeon can decide whether a nephrostomy tube should be inserted or not?

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