

## Percutaneous Renal Displacement Using the Needle Technique

**Introduction and objective:** Due to the increased risk of intrathoracic complications, many authors have cautioned against a percutaneous approach above the 12<sup>th</sup> rib, and even discouraged it above the 11<sup>th</sup> rib. We present a video of our experience of percutaneous renal upper pole access using a percutaneous renal displacement technique, to render the superior calyx reachable below the 11<sup>th</sup> rib. We describe a renal displacement technique using an 18-gauge needle, and its use in different situations.

**Material and Methods:** We present our technique of upper pole renal puncture, using percutaneous needle renal displacement technique, in high-located kidneys with various degree of difficulty. The needle renal displacement technique is performed under fluoroscopic guidance, with the X-ray beam perpendicular to the tract. Initially, a lower or middle calyx is punctured with an 18-gauge diamond-tipped needle. Then, a stiff shaft hydrophilic guidewire is inserted to protect urothelium from the needle-tip. The needle's proximal-end is progressively pushed in the cephalic direction, under continuous fluoroscopic monitoring. Consequently, the kidney is displaced caudally, by the lever manoeuvre. Secondly, the upper pole calyx is punctured, and tract formation is performed.

**Results:** A caudal renal displacement, of many millimetres to few centimetres, is gained. There is also a slight inversion of the normal axis of the kidney. The renal upper pole becomes more accessible to puncture below the 11<sup>th</sup> rib or even the 12<sup>th</sup> rib, so decrease of intra-thoracic morbidity. Sometimes, if one displacement technique is not sufficient, 2 or even 3 displacements are performed. The displacement has always been possible in kidneys with no surgical history. However, it failed when the kidney had been fixed by post-surgical adhesions. This technique has also been used to immobilize mobile kidneys or to reorient complex and malrotated kidneys.

**Conclusion:** Percutaneous needle renal displacement technique may render the superior calyx more available while avoiding or decreasing intra-thoracic complications, but are effective only when the kidney is mobile. This technique can be used to perform some calyx reorientation and to fix very mobile kidneys.

**\*To view this video, please [click here](#)\***