Urol Res (2011) 39:521–522
DOI 10.1007/s00240-011-0384-8

LETTER TO THE EDITOR

# Emergency percutaneous nephrostomy in supine-oblique position without cushion

**Miguel Angel Arrabal-Polo · Miguel Arrabal-Martin · Tomas Saz · Pilar Paiz**

Received: 4 March 2011 / Accepted: 26 April 2011 / Published online: 13 May 2011


**Abstract** The most frequent cause of obstructive uropathy with sepsis is ureteral lithiasis. Normally, two positions are used for placement of percutaneous nephrostomy: prone position and supine position. We describe a supine-oblique position without cushion consists of placing the patient in lateral position while we lean him until his back is in a 45° angle with the operating table to perform the percutaneous nephrostomy. Our experience since 2005 with 42 procedures is good, with 100% of success and without important complications.

## Letter

Normally, two positions are used for placement of percutaneous nephrostomy: prone position and supine position [1]. Prone position causes compression of both aorta and cava with venous derivation through the azygos vein, basically with little effect on the cardiac frequency, the central venous pressure, and pulmonary wedge pressure, but the cardiac index and the stroke volume decrease, and the peripheral vascular resistances and the pulmonary venous resistances increase. At respiratory level, this position causes decrease in pulmonary compliance and in functional residual capacity, and the diaphragm raises. Also makes the action of the anesthetist more difficult in urgent cases with septic patients with severe acute renal failure with hyperkalemia or patients with moderate and severe cardiorespiratory failure.

On the other hand, supine-oblique position keeps arterial pressure and pulmonary perfusion stable and the patient presents spontaneous ventilation consciously without any problems thanks to the action of the diaphragm and intercostals muscles. Although it is true, this position causes a better open lung ventilation and perfusion of the compressed lung by the position, but without hemodynamic repercussion. This position facilitates the action of the anesthetist in cases with severe patients, if necessary, and the replacement of the patient to a supine position in a few seconds [2].

Supine-oblique position without cushion consists of placing the patient in lateral position while we lean him until his back is in a 45° angle with the operating table. We do not place the cushion on the side but we put two 25 cm-length rolls of sheets, one at hip level, the other one at scapula level so the patient can lean on them. After that, we fix the patient at trochanter and thorax level with surgical tape and, if necessary, we give a slight angulation to the table to facilitate the approach (Fig. 1). Then, we make the approach according to conventional technique performing an ultrasound-guided percutaneous puncture behind the posterior axillar line.

From 2005 to today, we have performed 42 emergency procedures using this position without complications and with a good approach through the lower calyx. We have infiltrated local anesthetic in the puncture area and complemented with the sedation of the patient with spontaneous ventilation. This position has allowed the anesthetist to perform the orotracheal intubation of the patient in

M. A. Arrabal-Polo (✉) · M. Arrabal-Martin
Department of Urology, San Cecilio University Hospital, Camino de Ronda Street, 143.4°F, 18003 Granada, Spain
e-mail: arrabalp@ono.com

T. Saz · P. Paiz
Department of Anesthesiology, San Cecilio University Hospital, Granada, Spain

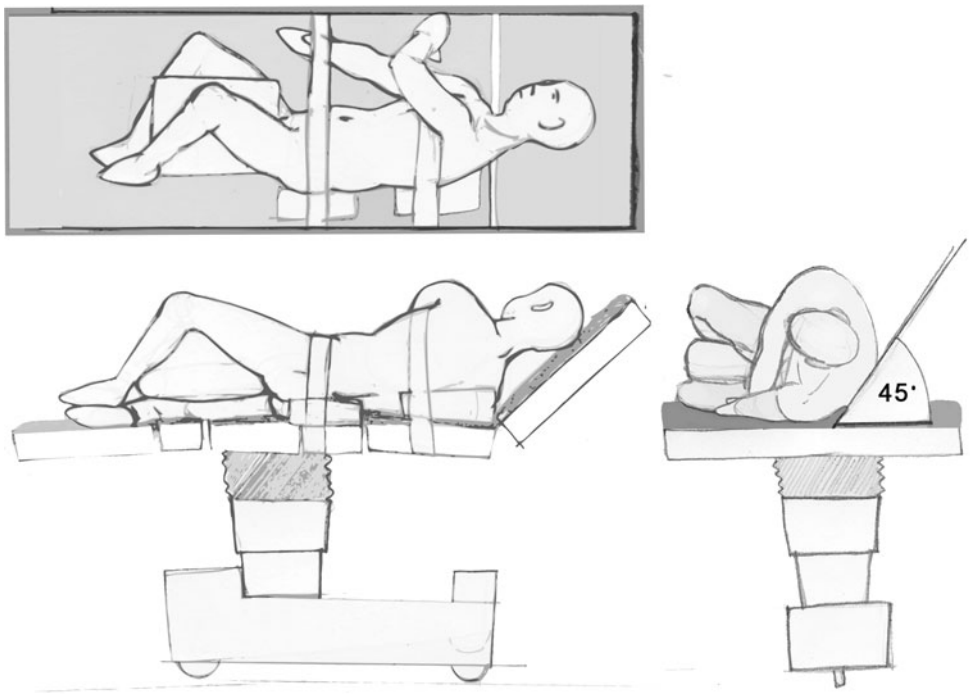


**Fig. 1** Picture from 3 perspectives of the oblique supine position to 45° designed by Dr. Arrabal-Martin. This position allows easy use of ultrasound in percutaneous renal puncture

necessary cases, as well as a better control of the respiratory dynamics.

Currently, we consider supine-oblique position without cushion on the side as a right choice in the placement of percutaneous nephrostomy in serious patient with spontaneous ventilation requiring urgent urinary diversion. We also use this position to perform percutaneous nephrolithotomy 3 years ago.

**Acknowledgments** Rafael Baena-Carmona.

## References

1. Valdivia JG, Valle J, Lopez JA, Villaroya S, Ambroj C, Ramirez M, Rodriguez JM, Sanchez MA (1998) Technique and complications of percutaneous nephroscopy: experience with 557 patients in the supine position. J Urol 160:1975–1978
2. Deleuze M, Molliex S, Ripart J (2009) Complicaciones de las posiciones quirÃ°rgicas. Anestesia-Reanimacion. doi:10.1016/S1280-4703(09)55545-4