

For subcutaneously implanted central venous ports, some complications due to prolonged placement have been reported. We investigated the appropriate puncture points and port placement sites to prevent catheter fracture in right internal jugular port placement” Matsunari et al (2019).

Abstract:

**BACKGROUND:** For subcutaneously implanted central venous ports, some complications due to prolonged placement have been reported. We investigated the appropriate puncture points and port placement sites to prevent catheter fracture in right internal jugular port placement.

**METHODS:** This retrospective study included 709 patients who underwent right internal jugular vein puncture and port implantation in the right precordium between 1 May 2012 and 31 March 2018. The cases were divided into undamaged catheter group and damaged catheter group comprising normal and fracture cases, respectively. The catheter angle, distance from the clavicle, tip position, and curvature radius were measured from fluoroscopic images obtained at the time of implantation. The t-test was used in statistical analysis.

**RESULTS:** Median angles were  $91.6^{\circ}$  in the undamaged catheter group and  $58.0^{\circ}$  in the damaged catheter group. Median distances were 26.0 mm in the undamaged catheter group and 36.6 mm in the damaged catheter group. Median tip positions were 51.6 mm in the undamaged catheter group and 37.5 mm in the damaged catheter group. Median curvature radii were 9.2 R in the undamaged catheter group and 7.1 R in the damaged catheter group. Significant differences were found in the angle, height, and curvature radius between the two groups.

**CONCLUSION:** Our results indicate that a venipuncture as close to the clavicle as possible (less than 3 cm) and a gentle catheter curve (close to  $90^{\circ}$  angle) are associated with a lower risk of catheter fracture.

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### Reference:

Matsunari, K., Watanabe, K., Hishizume, N. and Fujisawa, H. (2019) Influence of venipuncture point and port chamber site on the risk of catheter fracture in right internal jugular port placements. *The Journal of Vascular Access*. April 11th. . doi: 10.1177/1129729819839614.