



In this retrospective, multicenter observational study on 10 949 central venous catheter insertions, mechanical complications were rare. Preprocedural coagulopathy, number of needle passes, and arterial puncture were associated with grade 2-4 bleeding” Björkander et al (2018).

Abstract:

BACKGROUND: Incidence and risk factors for complications after insertion of central venous catheters have previously been reported for smaller cohorts. The aim of this observational multicenter study was to study risk factors for mechanical complications in a large, recently collected cohort of patients.

METHODS: Records of central venous catheter insertions from 8 hospitals in southern Sweden from 2013 to 2016 were collected from the regional chart system. Data on blood coagulation tests, use of ultrasonography, central venous catheter location, bore size, number of needle passes, arterial puncture, the chronological order of the central venous catheter insertion, and mechanical complications were extracted. Only one insertion/patient was included using worst-case selection criteria. Predefined primary outcome was mechanical complications defined as bleeding, pneumothorax, nerve injury, or malignant arrhythmia. Severe mechanical complications were defined as bleeding requiring intervention or transfusion, pneumothorax, persistent nerve injury, or non-self-limiting arrhythmias.

RESULTS: We included 10 949 insertions and identified 118 (1.1%) incidents of mechanical complication, of which 85 (0.8%) were bleedings, 21 (0.2%) were pneumothoraces, 7 (0.06%) were transient nerve injuries, and 5 (0.05%) were self-limiting arrhythmias. Severe mechanical complications occurred in 23 (0.2%) cases.

CONCLUSIONS: In this retrospective, multicenter observational study on 10 949 central venous catheter insertions, mechanical complications were rare. Preprocedural coagulopathy, number of needle passes, and arterial puncture were associated with grade 2-4 bleeding. Subclavian vein insertions, arterial puncture, and chronological order of the central venous catheter insertion were associated with pneumothorax.

Reference:

Björkander, M., Bentzer, P., Schött, U., Broman, M.E. and Kander, T. (2018) Mechanical complications of central venous catheter insertions: A retrospective multicenter study of incidence and risks. *Acta Anaesthesiologica Scandinavica*. July 11th. .

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