A primary open strategy by cut-down of the cephalic vein, if necessary enhanced by a modified Seldinger technique, reduces the frequency of pneumothorax or haemothorax after central venous port implantation significantly compared with a closed strategy by primary puncture of the subclavian vein without routine sonographic guidance” Hüttner et al (2019).

Abstract:

OBJECTIVES: PORTAS-3 was designed to compare the frequency of pneumothorax or haemothorax in a primary open versus closed strategy for port implantation.

BACKGROUND DATA: The implantation strategy for totally implantable venous access ports with the optimal benefit/risk ratio remains unclear.

METHODS: PORTAS-3 was a multicentre, randomized, controlled, parallel-group superiority trial. Adult patients with oncological disease scheduled for elective port implantation were randomized to a primary open or closed strategy. Primary endpoint was the rate of pneumothorax or haemothorax. Assuming a difference of 2.5% between the 2 groups, a sample size of 1154 patients was needed to prove superiority of the open group. A logistic regression model after the intention-to-treat principle was applied for analysis of the primary endpoint.
RESULTS: Between November 9, 2014 and September 5, 2016, 1205 patients were randomized. Of these, 1159 (open n = 583; closed n = 576) were finally analyzed. The rate of pneumothorax or haemothorax was significantly reduced with the open strategy. Operation time was shorter for the closed strategy. Primary success rates, tolerability, morbidity, dose rate of radiation, and 30-day mortality did not differ significantly between the groups.

CONCLUSION: A primary open strategy by cut-down of the cephalic vein, if necessary enhanced by a modified Seldinger technique, reduces the frequency of pneumothorax or haemothorax after central venous port implantation significantly compared with a closed strategy by primary puncture of the subclavian vein without routine sonographic guidance. Therefore, open surgical cut-down should be the reference standard for port implantation in comparable cohorts.

TRIAL REGISTRATION: German Clinical Trials Register DRKS 00004900.

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