

3rd International Conference on Surgery and Anesthesia

November 17-19, 2014 Chicago, USA

Trendelenburg position does not increase cross-sectional area of the internal jugular vein of the obese patients

Ozkan Onal, Seza Apiliogullari, Alaaddin Nayman, Ali Saltali, Huseyin Yilmaz and Jale Bengi Celik
Selcuk University, Turkey

Background and Aim: Obesity is one of the health issues that recently increasing worldwide result increased health care. Venous access is one of the important issues for surgical obese patients. A central venous catheter may be necessary if there is difficulty of finding a viable peripheral venous access in the operative setting. Trendelenburg positioning is a common approach used during internal jugular vein (IJV) cannulation. No evidence indicates that Trendelenburg positioning significantly increases the cross-sectional area (CSA) of the IJV in obese patients. The primary aim of this study was to determine the effectiveness of Trendelenburg positioning on the CSA of the right internal jugular vein assessed by ultrasound measurement in obese patient.

Methods: Forty American Society of Anesthesiologists II patients with body mass index ≥ 30 kg/m² undergoing various elective surgeries under general endotracheal anesthesia were enrolled. Ultrasound images of the right IJV were obtained in a transverse orientation at the cricoid level. The right IJV was imaged after applying two different conditions in sealed envelope random order: State 0, table flat (no tilt), with the patients in the supine position, and State T, in which the operating table was tilted 20° to a Trendelenburg position. Measurements (diameters and CSA of IJV) were made after 2 min in each state. The data were tested for normality using the Kolmogorov–Smirnov test. The paired sample t-test was used to compare the diameters and CSA changes between the State 0 and the State T in all patients. A p-value <0.05 was considered statistically significant.

Results: Data were collected for 36 of 40 (25 female and 11 male) obese patients in the study. The change in CSA of the IJV from the supine to the Trendelenburg position (1.80 ± 1.3 cm² vs. 2.08 ± 1.5 cm²) was not significantly different. The CSA was paradoxically decreased in 10 of 36 patients when changed from State 0 to State T.

Conclusions: Trendelenburg positioning does not significantly increase the CSA of the right IJV in obese patients. In fact, in some patients, it reduces the CSA. Therefore, the use of the Trendelenburg position for IJV cannulation in obese patients can no longer be supported.

Biography

Ozkan Onal has completed his medical education at Gazi University Medical Faculty and he was specialized in anesthesiology in Hacettepe University Medical Faculty. He has more than 15 publications in reputed journals in the field of anesthesia.

drozkanonal@gmail.com