

This study aimed to investigate the clinical predictors of unfavorable prognosis in patients with venous catheter-related cerebral air embolism” Cheng et al (2015).

Reference:

Cheng, C.K., Chang, T.Y., Liu, C.H., Chang, C.H., Huang, K.L., Chin, S.C., Wu, H.C., Chang, Y.J. and Lee, T.H. (2015) Presence of Gyriform Air Predicts Unfavorable Outcome in Venous Catheter-Related Cerebral Air Embolism. Journal of Stroke and Cerebrovascular Diseases. July 25th. .

Abstract:

BACKGROUND: This study aimed to investigate the clinical predictors of unfavorable prognosis in patients with venous catheter-related cerebral air embolism.

METHODS: An extensive review of English literature was performed to obtain reports on cerebral air embolism published between January 1982 and July 2014 through PubMed, Journal at Ovid, and Web of Science using the Mesh terms and keywords “cerebral air embolism” and “cerebral gas embolism.” Reports not fulfilling the diagnosis of cerebral air embolism and iterant articles were excluded. Demographics, clinical manifestations, and imaging findings were recorded. The air distribution on initial brain computed tomography (CT) was recorded as gyriform air (GF), cavernous sinus bubble, venous sinus bubble, and parenchymal and subarachnoid bubble. The enrolled subjects were further divided into favorable and unfavorable outcome groups for analyses.

RESULTS: Of the 33 cases enrolled, 31 had documented follow-up outcomes, including 14 with favorable and 17 with unfavorable prognoses. Patients with unfavorable outcome had older onset age (67.5 ± 15.8 versus 46.7 ± 17.0 years, $P < .001$), higher frequency of GF on brain CT (58.8% versus 0%, $P < .01$), initial consciousness disturbance (100% versus 42.9%, $P < .001$), and hemiparesis (100% versus 42.9%, $P < .001$), but lower frequency of cardiopulmonary symptoms (5.9% versus 64.3%, $P < .01$). In patients with central venous catheter-related cerebral air embolism, the retrograde mechanism had a tendency for worse outcomes (43.8% versus 0%, $P = .023$).

CONCLUSIONS: In patients with venous catheter-related cerebral air embolism, the presence of GF on brain CT imaging, old age, initial conscious disturbance, and hemiparesis may predict unfavorable outcomes.

Thank you to our partners for supporting IVTEAM



What is the prognosis for patients with central catheter-related air embolism | 2