

Comparison of Surgical Approaches in Neurosurgical Patients Experiencing Venous Air Embolism in the Sitting Position

The Editor,

Sir,

Neurosurgery in the sitting position offers advantages for certain posterior fossa operations. However, these approaches are associated with potential complications, particularly venous air embolism (VAE), cerebral and myocardial ischaemia secondary to hypotension, and complications of the positioning itself (1). There is no study comparing the paramedian and median approaches for the risk of VAE. We aimed to find out the incidence of VAE according to the type of the surgical approach as paramedian and median incision.

Records of 73 patients who underwent neurosurgical procedures in the sitting position were reviewed in order to classify the morbidity and mortality related to surgical procedure as well as the clinical appearance of VAE. Patients were assigned into two groups according to the type of the surgical approach as paramedian (Group I, n = 37) and median incision (Group II, n = 36). Before the induction of anaesthesia, routine monitoring was started. End-tidal carbon dioxide (ETCO₂) tension was monitored to diagnose VAE. A sudden and sustained decrease in ETCO₂ of more than 5 mmHg in the absence of sudden hypovolaemia was presumed to be the result of VAE. The incidence of VAE was found to be 37.8% (14 patients) in Group I (paramedian) and 13.9% (five patients) in Group II [median] ($p < 0.05$).

Venous air embolism in neurosurgical procedures done in the sitting position is not rare. It depends on the type of surgery and the mode of ventilation. Also, the degree of tilt, intrathoracic and intracardiac pressures (right auricle) and the gas mixtures administered (nitrous oxide increases their size owing to its poor blood solubility) are other components that affect the risk of VAE (2). Venous air embolism, which is one of the perioperative complications in neurosurgery, is not only related to the sitting position but also may be related to the surgical approach. Paramedian surgical approach in the sitting position has a higher risk of VAE episodes which significantly increased the perioperative morbidity. The use of the sitting position should be limited in the neurosurgeon's choice because of the disadvantage of VAE.

Keywords: Air embolism, median incision, neurosurgery, paramedian incision

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Multiple Rib Stress Fractures Associated with Chronic Coughing Caused by Untreated Bronchial Asthma in a Premenopausal Woman

The Editor,

Sir,

Muscular forces of severe coughing may cause stress fracture of the rib. Since rib stress fractures usually occur on a single rib, stress fractures of multiple ribs are extremely rare. We describe herein a case of cough-induced multiple (15 ribs) rib stress fractures in a premenopausal woman with untreated bronchial asthma.

A 46-year old Japanese woman showed multiple nodular lesions on screening chest radiography during medical screening examinations at her office. Although she had a one-year history of chronic cough attended by sudden intense pain in the back, she had not sought medical attention. On examination, wheezing was noted on exhalation. Plain chest radiography revealed multiple peripheral nodular lesions on the ribs. Chest computed tomography (CT) showed multiple rib fractures, right 2nd to 9th ribs and left 2nd to 8th ribs, with hyperostoses at the posterior axillary line (Figure). These