Obtaining external jugular venous access in the prone-positioned patient

Sir,

The anesthesiologist is more than occasionally confronted with having to obtain or “augment” intravenous (IV) access. This frequently occurs with changes in patient positioning. Moreover, “tucking” or adduction of the arms may create “resistance” and additionally interfere with the appropriate flow of IV fluids. Existing IV access may also “clot off” or infiltrate; despite previously working successfully.

Once in the prone position, the ability to obtain additional IV access can be challenging. The authors have utilized the external jugular vein (EJV) under these circumstances with relative ease [Figure 1]. On two occasions, EJV cannulation was achieved quickly. Furthermore, enough “backflow” was available to allow for venous blood gas assessment. Use of ultrasound guidance (USG) may also be beneficial to locate the vessel. In each of the two instances, the patients’ arms were covered with padding and adducted. In addition, extensive hospitalization, obesity, and IV drug abuse made localization for peripheral venous access unobtainable; despite untucking of the patients’ arms and employing USG and infrared-based optical devices.

It should be noted that EJV pressures, in supine-positioned patients, have been utilized for volume status measurement and have been documented to correlate with internal jugular venous pressures. However, central venous pressure, measured from the internal jugular vein in the prone position, does not appear to correlate with measurements obtained using transesophageal echo. Other devices, such as the esophageal Doppler monitor, have been reported for volume assessment and management in prone-positioned patients. The anesthesiologist should be aware of the availability of the EJV should the need arise to obtain IV access in those patients who are in the prone position.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

Glen Atlas, Mina Mosaad, Faraz Chaudhry, Yuriy Gubenko
Department of Anesthesiology, Rutgers New Jersey Medical School
Newark, NJ, USA
Intra-operative mechanical ventilation in amebic liver abscess surgery: Another paradigm

Sir,

We wish to highlight a hitherto unreported intra-operative complication in a 42-year-old male patient of ruptured amebic liver abscess while undergoing surgery for the chronic empyema. A broncho-hepatic fistula was created probably by the institution of the positive pressure ventilation. Timely lung isolation using the in-situ double lumen tube (DL T) prevented the potentially life-threatening respiratory morbidity. The patient presented with complaints of fever for 1 month, pain in right upper abdomen and chest for 10 days. He had mild hepatomegaly associated with tenderness and guarding over right hypochondrium and decreased breath sounds in the right lower zone of the lung. All blood investigations were within normal limits except high leukocyte count (23,000/mm$^3$) and deranged coagulation (INR to 1.84). The ultrasound of abdomen and subsequent contrast enhanced computed tomography (CECT) showed a large hypoechoic collection measuring 11 cm x 17 cm in the right lobe of the liver, communicating with the right pleural cavity through a 1.3 cm long rent in the diaphragm along with minimal ascites. Ultrasound-guided aspiration from the collection tested positive for Entamoeba histolytica [Figure 1]. The patient was initially managed conservatively with antibiotics.

The patient continued to have a cough and on and off fever in spite of antibiotic, hence was scheduled for thoracotomy for nonresolving chronic empyema and ruptured amebic liver abscess. After induction of anesthesia, a left-sided 37 F DLT was inserted in view of the planned thoracotomy for the empyema, and successful lung isolation confirmed by auscultation while the patient was ventilated manually. Mechanical ventilation was initiated at a tidal volume of 8 ml/kg without positive end-expiratory pressure, and the patient positioned in left lateral position with the diseased right lung up.

As soon as the patient was positioned, bilious colored secretions started pouring out from the tracheal lumen. Immediately the bronchial cuff was inflated to avoid the spillage into the healthy lung.

References

1. Abdullah MH, Soliman Hel D, Morad WS. External jugular venous pressure as an alternative to conventional central venous pressure in right lobe donor hepatectomies. Exp Clin Transplant 2011;9:393-8.
2. Soliman DE, Maslow AD, Bokesch PM, Strafford M, Karlin L, Rhodes J, et al. Transoesophageal echocardiography during scoliosis repair: Comparison with CVP monitoring. Can J Anaesth 1998;45:925-32.
3. Wang D, Atlas G. Use of the esophageal Doppler monitor in prone-positioned patients. Abstract and poster presented at the New York State Society of Anesthesiologists Annual PGA. New York; 2009. Available from: http://www.glenatlasmd.com/download/EDM-prone.pdf. [Last accessed on 2016 Jul 26].
4. Yang SY, Shim JK, Song Y, Seo SJ, Kwak YL. Validation of pulse pressure variation and corrected flow time as predictors of fluid responsiveness in patients in the prone position. Br J Anaesth 2013;110:713-20.