Extravasation of fluid in neck secondary to perforation of vein by venous catheter

Sir,
Peripheral venous cut-down, once a mainstay in the care of critically ill patients has lost favor since the introduction of Seldinger technique of central venous line placement. However, this technique is often used when percutaneous vascular access is difficult, or there is an unacceptable time delay.[1] Although uncommon, complications reported are bleeding, thromboembolism, phlebitis, hematoma formation, and nerve injury.[1]

Thirty two years (45 kg, 150 cm) female patient presented to gynecology emergency in shock on postpartum day 1. Venous access was difficult, and only a 20G venflon could be secured. Patient was intubated in view of the poor respiratory effort. Blood pressure was not recordable. Peripheral venous cutdown was performed through a right cephalic vein using infant feeding tube (10F, Romsons Science and Surgical India Private Limited). Ringer lactate was given for resuscitation. As blood pressure continued to stay unrecordable at central venous pressure of 14 cm of H$_2$O, dopamine 10 $\mu$gm/kg/minute was started. Physical examination was negative for active bleeding. Patient was shifted to intensive care unit (ICU). 24 h after arrival into ICU, patient became febrile. Swelling appeared on the left side of the neck along with redness of the overlying skin. Computed tomography scan of the neck showed hypointense lesion with poor rim enhancement [Figure 1]. Diagnosis of submandibular abscess was made, and patient taken for excision and drainage of the abscess. Exploration of neck revealed perforation of the anterior jugular vein by the tip of infant feeding tube resulting in extravasation of fluid and accumulation of same in tissues of neck. Drainage of fluid was done, and infant feeding tube removed. Trachea was extubated 2 days later.

Positioning of the catheter tip in the right subclavian vein was confirmed in the initial chest X-ray. Later on semi-rigid catheter tip could have migrated, abutted the vessel wall and created mechanical irritation resulting in perforation. As infant feeding tube contains a thin radio opaque line, displacement of the catheter was probably missed on the subsequent chest X-ray taken in the ICU.

Central venous catheter malposition into the anterior jugular venous system (AJVS) usually occurs when the catheter enters the horizontal component of the AJVS that is, jugular venous arch by the external jugular vein, which is the most common origin of the horizontal aspect of AJVS.[2]

Use of infant feeding tubes made of polyvinyl chloride in lieu of relatively expensive polyurethane or silicon catheters is still practiced in developing nations. In contrast to the silicon catheters, the infant feeding tubes are stiffer, increasing the propensity of vessel erosion, as was seen in our case. In addition to perforation of the vessel wall, PVC is highly thrombogenic and promotes the growth of fungus.[3,4]

Therefore, to avoid such complications in future the use of infant feeding tubes for percutaneous central venous cannulations should be strongly discouraged and if used utmost care should be taken to confirm the proper placement and prompt intervention should be taken in case of malpositioning.

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Figure 1: CT scan of the neck showing hypointense lesion with poor rim enhancement
In response to unanticipated cannot intubate situation due to difficult mouth opening

Sir,

We read with the interest case report “Unanticipated cannot intubate situation due to difficult mouth opening” by Akasapu et al. [1] published in January-March 2015 issue 1 volume 31. We have some queries regarding the management of this case: The use of 100 mg of rocuronium in an ASA grade IV E patient can be confounding. Furthermore authors should have attempted bag mask ventilation (BMV) after their first attempt of BMV with Sellick’s maneuver failed.[2] Also it would have been prudent to consider cricothyroidotomy in a patient who is rapidly desaturating.

We also encountered a similar case of unanticipated cannot intubate situation in a 64-year-old and 50 kg, ASA I female, posted for right radical parotidectomy with posterior segmental mandibulectomy with free anterolateral thigh flap reconstruction. Her airway examination was normal with the mouth opening of 3 cm and mallampatti class I with a full range of neck movements. Airway plan was to secure the nasotracheal tube. Anesthesia was induced with propofol 120 mg and fentanyl 100 μg. Rocuronium of 50 mg was given for neuromuscular blockade after confirmation of BMV. After 3 min of BMV, an attempt to open the mouth for laryngoscopy was failed, teeth were firmly approximated. BMV was continued for another minute. Sevoflurane 2% with oxygen was used during BMV at the fresh gas flow of 2 l/min. Another attempt to open the mouth was also failed. Masseter muscles spasm and temporomandibular joint dislocation were ruled out by the surgeons. The surgeon tried to open the mouth with the help of mouth gag but failed again. We decided to intubate the trachea with the help of fiber optic bronchoscope (FOB) through nasal route and continued BMV till FOB arrived. We successfully managed this stressful situation with FOB.

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Conflicts of interest
There are no conflicts of interest.

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