

## External jugular vein cannulation - A double-edged sword

Sir,

External jugular vein (EJV) cannulation is an indispensable armour in establishing quick venous access to the central compartment. In the current scenario of the coronavirus disease (COVID)-19 pandemic, its use is even more crucial as the insertion of central venous catheter (CVC) is difficult with personal protective equipment due to logistic issues (fogging and restriction of movement).<sup>[1]</sup> In addition to serving all the purposes of the CVC, EJV is easy to cannulate because of its constant anatomy. Hence, it is widely used in the intensive care unit, operation theatre and emergency department. The learning curve and time taken for EJV cannulation is less when compared to CVC and needs less expertise. Its superficial location away from major neurovascular bundles makes it safe for cannulation.<sup>[2]</sup> The role of a wide bore EJV cannula cannot be overemphasised for rapid resuscitation with no peripheral intravenous access. Peripheral veins collapse in hypovolemic patients in shock due to the shift of blood to the central compartment. EJV serves as a route for infusion of fluids, blood, hyperosmolar/vesicant drugs and inotropes/vasopressors. EJV is an alternative to the CVC in patients with coagulopathy with the unavailability of ultrasonography (USG). It

also has fewer chances of pneumothorax and arterial punctures. Moreover, it can be used as a channel for CVC insertion with USG confirmation.<sup>[3]</sup>

Although there are several advantages to securing EJV, it is not without its share of complications. To state a few are, EJV being continuous with the central compartment, its cannulation and removal can lead to air embolism.<sup>[4]</sup> In patients with a cervical spine injury, positioning the neck for EJV placement can lead to further neurological damage. It has been reported that idiopathic EJV thrombosis can follow in patients with cervical trauma, infection and neck malignancies.<sup>[5]</sup> In these cases, cannulation can lead to thrombus dislodgement and cannula migration leading to embolism.<sup>[6]</sup> In head-and-neck surgeries, extreme rotation of the neck (park bench, dead lateral or prone position with full neck flexion) may block EJV intraoperatively. The presence of tracheostomy or cervical collar hinders its placement and access.

Furthermore, a few nuances are to use a good quality catheter, and USG during the removal of this cannula and this may help to avoid catheter breakage, migration and easy detection.<sup>[7]</sup> It is a potential source for infection and should be cared as CVC care bundles. Attaching a three-way extension [Figure 1] would avoid contamination of cannula and air embolism. Early removal of the catheter, at around 3 days or when not needed, prevents infection.

Thus, EJV cannulation seems to be a minor procedure and gadget. In the current scenario of the COVID-19



**Figure 1:** Attachment of a three-way extension to external jugular vein cannula, which would avoid contamination of cannula and air embolism

pandemic, it is invaluable due to the technical difficulties in establishing central venous access. Careful use can surmount its complications. Adherence to strict asepsis and care bundle, along with the merits of EJV might thus outshine.

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