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Clinical Image

Unexpected internal jugular vein (IJV) valve encountered during Central Venous Pressure (CVP) Catheter insertion: clinical snapshot

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A 42 years old male patient was posted for emergency resection and anastomosis in view of intestinal obstruction for adenocarcinoma of ascending colon. During preanesthetic checkup, there was no associated comorbidity and biochemical investigations were within normal limits. In Operation Room, after attaching all standard monitors right IJV cannulation was planned in view of anticipated intraoperative haemodynamic instability and massive fluid shift. After optimal patient positioning and aseptic precautions right IJV was visualized using linear ultrasound USG probe. On scanning a hyper resonant mobile structure was visualized in right IJV 18 mm above the clavicle, which was identified to be an IJV valve (Figure 1). To confirm a longitudinal view of IJV was also seen, which confirmed presence of a bicuspid valve. We punctured the IJV distal to the valve with an introducer needle with a separate guidewire port and after aspiration of venous blood guide wire was introduced and catheter was fixed at 12 cm.

Although, there is a very high incidence of IJV valve as reported by Furukawa et al. The author has reported incidence 96.7% of the bilateral IJV valves, out of which 53.4% were located posterior to the clavicle and 72% of the valves were bicuspid.[1] Its most common location is distal portion of the IJV, just proximal to the jugular bulb in the retroclavicular space.[2] In present case, valve was identified at the level of 18 mm above the clavicle in the mid neck which is an unusual location of IJV valve.

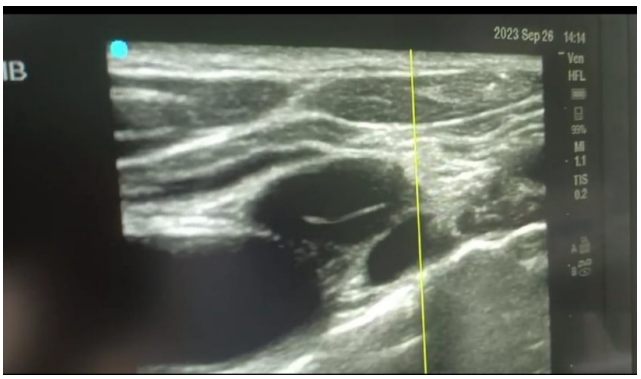

Figure 1: Atypical IJV valve in the right internal jugular vein 18 mm above the clavicle

In usual case scenarios venipuncture is done at the cricoid level which is higher than the usual location of IJV valve thus reducing risk of valve piercing by catheter causing valve incompetence.[3] However, in our case IJV valve was visualized at mid neck level which is the usual site of venipuncture. Thus, a decision of IJV venipuncture was taken distal to valve to avoid any valve injury. The figure here shows presence of IJV valve at 18mm above clavicle.

IJV valves are very common but often neglected during any procedure. Function of IJV valve is to prevent an abrupt rise in intra thoracic pressure during coughing or positive

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pressure breathing and shielding of the brain from an acute increase in intrathoracic pressure.[3]

Use of ultrasound for real time scanning of IJV prevented any untoward IJV valve related complication. IJV valve injury due to repeated or forceful cannulation attempts can cause its malfunctioning resulting in cough headaches and even increasing the risk of cerebrovascular accidents.[3] It can even cause retrograde coiling of catheter because of reversal of the venous blood flow.[3]

Thus, IJV cannulation should be performed using USG for identification of any such unusual valve location subsequently preventing its injury.

1. Conflict of Interest

None.

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