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Original Research Paper

Anaesthesiology

FAILED SURFACE LANDMARK GUIDED IJV CANNULATION METHOD IN PATIENT WITH INCIDENTAL THYROID CYST DISPLACING LEFT INTERNAL JUGULAR VEIN

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ABSTRACT As per anatomy, Internal Jugular Vein most commonly located antero-lateral to the carotid artery. Correct placement of IJV catheter may become a technically challenging procedure because of anatomical variations. As part of residency, we should know both methods of IJV cannulation i.e. Surface landmark technique and Ultrasound Guided technique. We had come across such a case where surface landmark technique failed because of rare anatomical variation. 66yrs old diabetic patient was posted for nephrectomy. Left IJV cannulation was planned in preoperative period after induction. We attempted Left IJV puncture via surface landmark method, but failed in it so we scanned Left IJV with USG and there was a huge thyroid cyst displacing carotid artery laterally and IJV medially This incidental finding of left thyroid cyst caused difficulty in surface landmark technique IJV cannulation. After failed attempt with surface landmark technique, USG screening was helped to make it successful in this variation.

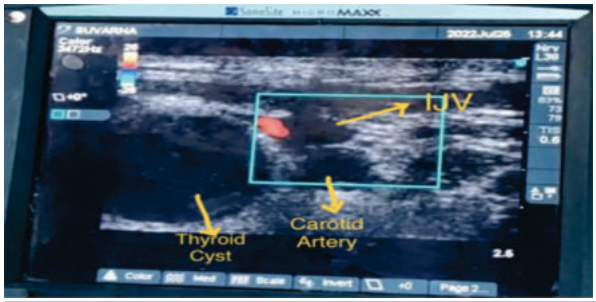
KEYWORDS : Difficult Internal Jugular Vein Cannulation, Internal Jugular Vein anatomical variation, Incidental thyroid cyst, Anaesthetic concerns

INTRODUCTION

Internal jugular vein catheterisation is indicated for central venous access in patients undergoing supramajor surgeries, in suspected major fluid shift surgery, for hemodynamic monitoring, long term administration of fluid, antibiotics, total parenteral nutrition. IJV cannulation is usually done with surface landmark technique and USG guided technique. In remote places the availability of USG is rare so anaesthe siologist should learn both the techniques. Being an anaesthesiologist we should also learn limitations of surface landmark technique. We had come across such a case where surface landmark technique failed because of rare anatomical variation.

Case Report

66 year old male patient known case of Diabetes Mellitus since 20 year and Hypertension since 6 years on medication with diagnosis of Emphysematous Pyelonephritis posted for Right Open Nephrectomy. This patient required General Anaesthesia for open nephrectomy surgery. Pre-operatively all investigations were within normal limit. With high risk consent General Anaesthesia with endotracheal tube intubation done for the patient. As there was history of recent right IJV cannulation few days back so we have decided to cannulate left IJV. Unde all aseptic precautions painting and draping done and left sided IJV cannulation was attempted by the junior resident under supervision of senior anaesthe siologist with surface Landmark technique. After two attempts of puncture we couldn't get aspiration so we decided to scan the left IJV under USG guidance. We scanned the the Left Internal jugular vein using USG and there was a huge thyroid cyst which displaced the left carotid artery laterally and left IJV medially. This incidental finding of Thyroid cyst caused difficulty in surface landmark technique IJV cannulation.



Above picture showing thyroid cyst displacing left IJV laterally and carotid artery medially

Correct placement of IJV catheter with surface Landmark technique may become a technically challenging procedure because of following anatomic variations.

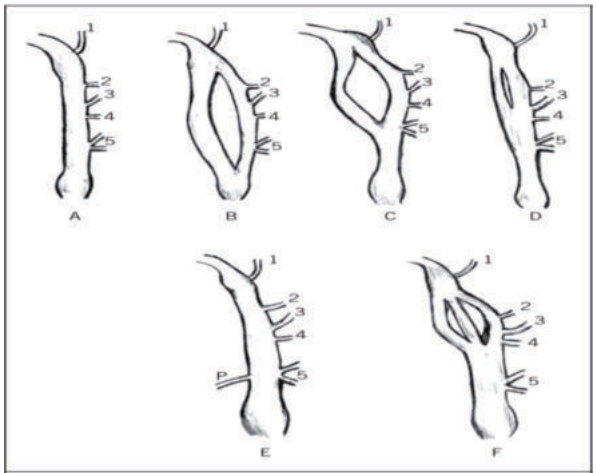


Figure 3 Anatomical variations of the internal jugular vein. A) Normal. B) Duplication. C) Bifurcation. D) Fenestration. E) Posterior tributary. F) Trifurcation. (1. inferior petrosal sinus; 2. pharyngeal vein; 3. common facial vein; 4. lingual vein; 5. thyroid veins; 6. posterior tributary).

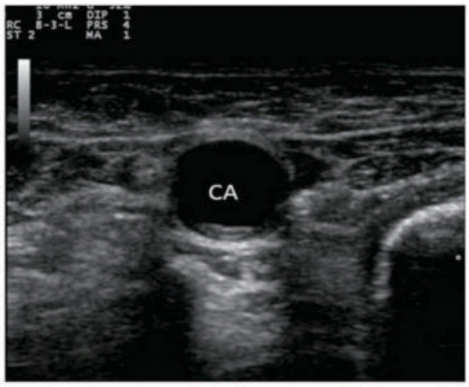


Figure 1: Ultrasound image of the right side of the neck showing absence of internal jugular vein. CA: Carotid artery

CONCLUSION

These findings suggest that anatomical variation may account for inability to cannulate the internal jugular vein. In such cases ultrasound establishes the easy and rapid access.

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