



## Neck hematoma complicating endotracheal extubation

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A 73-yr-old male with atrial fibrillation presented for pulmonary vein mapping and isolation. Following uneventful tracheal intubation, femoral vein catheters and a 7-Fr right internal jugular vein (IJV) catheter were placed with ultrasound guidance. After the seven-hour procedure, a large right neck hematoma was apparent. Ultrasound examination showed no compromise of the IJV or carotid artery. Axial (*Panel A*) and coronal (*Panel B*) contrast-enhanced computerized tomography demonstrated the right IJV catheter (white arrow), an intact internal carotid artery (red arrow), and an extensive intramuscular and perimuscular hematoma (green line) involving the right neck and extending from the inferior right parotid gland into the superior mediastinum with associated mass effect on the right IJV (blue arrow) and airway (yellow arrow). There was no evidence of active extravasation. Several hours following removal of the IJV catheter in the intensive care unit, no hematoma enlargement was observed. Awake endotracheal

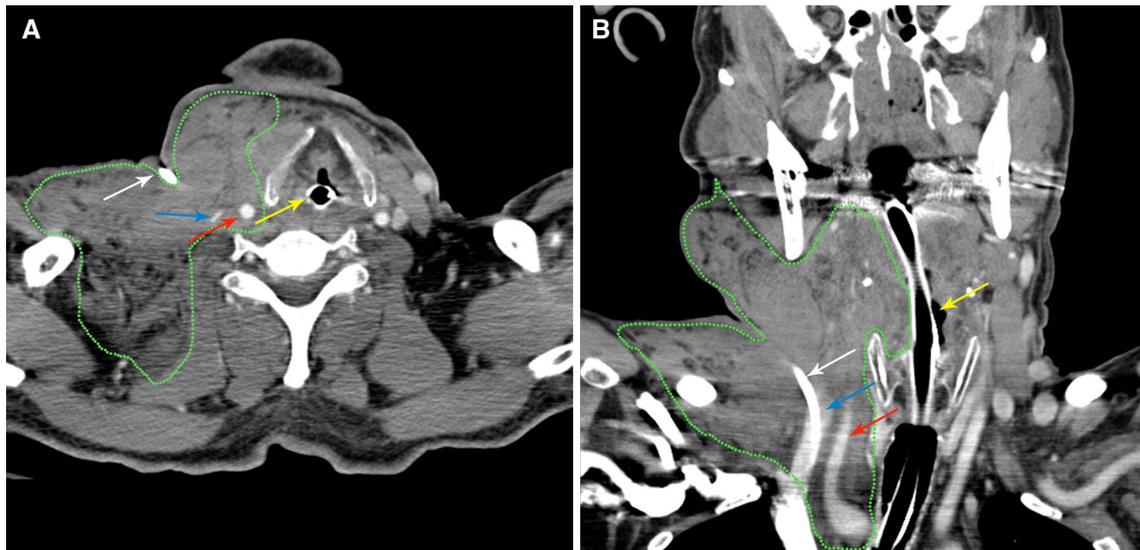
extubation was performed utilizing a 19-Fr airway exchange catheter to facilitate reintubation if required. After several minutes without airway compromise, the airway exchange catheter was uneventfully removed.

Although reduced complications have been associated with ultrasound-guided IJV cannulation, vascular injury may still occur. Hematoma following central vein cannulation is a known complication, occurring in 1% of cases. Vascular injury requiring surgical intervention (e.g., carotid artery cannulation, dissection, etc.) should be excluded with imaging. Even in the absence of initial airway difficulty, neck hematoma should alert clinicians to the potential for airway compromise and difficult reintubation. Current airway guidelines recommend consideration of an awake extubation and use of a device such as an airway exchange catheter to facilitate oxygenation and reintubation in the event of a failed extubation.

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**Figure** Axial (*Panel A*) and coronal (*Panel B*) contrast-enhanced computerized tomography demonstrating right internal jugular vein (IJV) catheter (white arrow), intact internal carotid artery (red arrow), and extensive intramuscular and perimuscular hematoma (green line)

involving the right neck and extending from the inferior right parotid gland into the superior mediastinum with associated mass effect on the right IJV (blue arrow) and airway (yellow arrow)

**Conflicts of interests** None declared.