

Airway management in a patient with a traumatic retropharyngeal hematoma causing airway compromise

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Received: 18 January 2022 / Revised: 24 January 2022 / Accepted: 26 January 2022
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Keywords retropharyngeal hematoma · trauma · airway obstruction · airway management

To the Editor,

Retropharyngeal hematoma (RPH) is a rare cause of acute life-threatening airway obstruction.¹ It has been reported after minor and major trauma to the head and neck^{1, 2} but can also manifest spontaneously in patients who are anticoagulated³ or have a bleeding diathesis.⁴ Emergent airway management is often required to prevent complete loss of the airway.² We present a case of RPH after a low-energy mechanical fall in a patient on warfarin.

Patient consent was obtained for this case report. A 74-yr-old male with a history of paroxysmal atrial fibrillation and mechanical aortic valve replacement on warfarin presented to the emergency department (ED) with worsening stridor and dysphonia after a fall while gardening and sustaining trauma to his head and face. Vital signs on arrival were blood pressure, 156/89 mmHg; heart rate, 132 min⁻¹; respiratory rate, 32 min⁻¹, and blood oxygen saturation on a nonrebreather face mask, 96%. Computed tomography scan revealed a large RPH extending from the C1 vertebra into the mediastinum with active extravasation at the C5/6 level, adjacent to a

prominent anterior osteophyte. The larynx was displaced anteriorly with severe tracheal narrowing at the thoracic inlet (Figure). No cervical spine fractures were identified. Warfarin was stopped and an international normalized ratio of 2.1 was reversed with prothrombin complex concentrate.

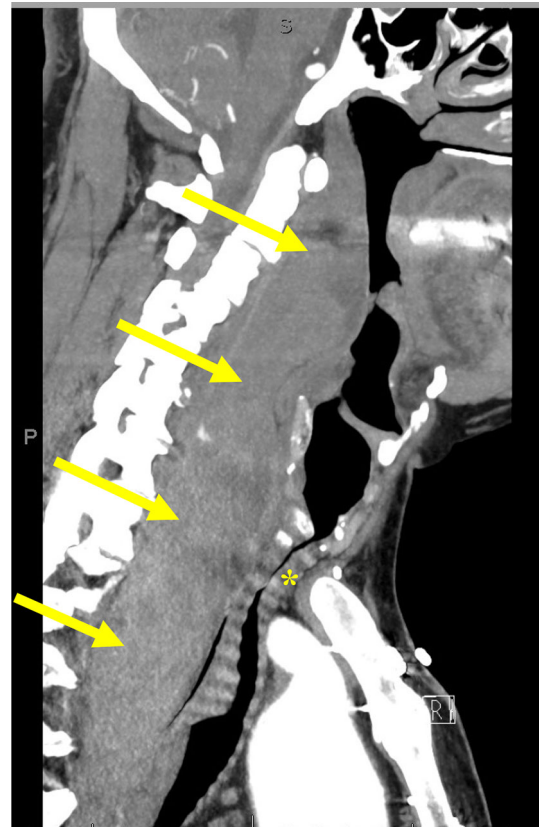


Figure Large retropharyngeal hematoma (arrows) extending from C1 into the mediastinum causing significant compression of the airway (*) and severe narrowing at the thoracic inlet.

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The on-call anesthesiologist was emergently asked to assist with airway management in the ED. The patient had marked inspiratory stridor and tachypnea. He consented to an awake flexible endoscopic tracheal intubation with the emergency physician on standby for front-of-neck access. Otolaryngology was consulted prior to airway management but was unable to immediately attend. The patient was preoxygenated with high-flow nasal cannula (HFNC), and his airway was topicalized with 6 mL of 4% lidocaine using a mucosal atomization device. Sedation was avoided to reduce the risk of apnea or further airway obstruction. The larynx was easily visualized using the endoscope but the tracheal mucosa was extremely swollen with no passageway. While encountering moderate resistance, the anesthesiologist was able to navigate the scope through the narrowed portion of the trachea and visualize the carina. A 7.0-mm internal diameter Parker Flex-Tip™ (Parker Hannifin Corp, Cleveland, OH, USA) endotracheal tube (ETT) was easily advanced over the scope beyond the level of obstruction. Once placement of the ETT was confirmed, the patient was sedated with propofol. The procedure was well tolerated, and the patient's oxygen saturation was maintained > 96% throughout on HFNC.

The patient was then admitted to the intensive care unit (ICU). Subsequent coil embolization of an inferior branch of the right dorsal cervical artery was successfully completed in the interventional neuroangiography suite. Three days later, he was taken to the operating room for evacuation of the RPH and tracheostomy. The tracheostomy was eventually decannulated and he was discharged home in a stable condition on postoperative day 11. His hospital course was otherwise uneventful.

In conclusion, we present a case of successful emergency airway management in a patient with acute airway compromise secondary to a large traumatic RPH. This case report highlights the potential for a RPH to develop after seemingly low-energy trauma, potentially leading to life-threatening airway obstruction. The presumed mechanism of injury was laceration of a

branch of the dorsal cervical artery by an adjacent osteophyte. In this case, the tracheal edema and associated posterior RPH compression were malleable, allowing passage of an ETT with minimal resistance. With a large RPH that extends below the thoracic inlet, there is concern that rescue front-of-neck surgical access may be particularly challenging. A cricothyrotomy or tracheostomy may not bypass the level of the obstruction and may be complicated by airway hemorrhage if the hematoma is breached. Lastly, management should consist of a multidisciplinary approach with anesthesiology, otolaryngology, radiology, and ICU services.

Conflict of interest None.

Funding None.

Editorial responsibility This submission was handled by Dr. Philip M. Jones, Deputy Editor-in-Chief, *Canadian Journal of Anesthesia/Journal canadien d'anesthésie*.

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