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Case Report

Dilemma in management of spontaneous neck hematoma

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ABSTRACT

Spontaneous neck hematoma is a rare but potentially life-threatening condition due to its risk of rapid airway compromise. It is most commonly associated with aneurysm, infection, thyroid or parathyroid tumors, or underlying coagulopathy, and may also occur in patients receiving anticoagulation or thrombolytic therapy. We report the case of an 87-year-old male with massive pulmonary embolism and deep vein thrombosis who developed a spontaneous cervical hematoma following catheter-directed thrombolysis with alteplase and systemic heparin. The patient presented with progressive neck swelling, ecchymosis, and airway deviation confirmed by contrast-enhanced computed tomography (CT) and flexible fiberoptic laryngoscopy. Airway protection was achieved with endotracheal intubation, and anticoagulation was withheld. He was managed conservatively with intravenous steroids and antibiotics. Extubation was carefully planned using cuff-leak testing, which was successful without the need for surgical intervention. The hematoma resolved gradually, and the patient recovered fully. This case underscores the importance of early recognition, multidisciplinary decision-making, and individualized airway management strategies in optimizing outcomes for spontaneous neck hematoma, especially in anticoagulated patients.

Keywords: Spontaneous Neck hematoma, Difficult extubation, Airway compromise

INTRODUCTION

Spontaneous neck hematoma is a rare but life-threatening condition. It usually originates from capillary leakage and venous or arterial bleeding caused by trauma, surgery or tumours.[1] Once suspected, it presents as an anticipated difficulty airway due to distorted airway anatomy and an impending upper airway obstruction. The common causes of spontaneous hematoma are aneurysm, infection, rupture and bleeding of thyroid and parathyroid tumours and an underlying coagulopathy.[2,3]

Capp's et al first reported the triad of symptoms, esophageal and tracheal compression, tracheal displacement and successive emergence of subcutaneous ecchymosis.[4] Other clinical presentation include - tongue falling back and upper airway compromise, dysphagia, hoarseness and neck pain.[2,3]

Rapid identification and decision making are essential to mitigate severe patient outcomes including cerebral hypoxia, cardiopulmonary compromise and death.[5]

CASE REPORT

An 87 years male presented to emergency department with sudden onset of breathlessness. The patient underwent right total knee replacement 1 year back and revision right total knee replacement 3 months back. Since then, the patient was immobile, developed swelling of both lower limbs.

On examination at arrival, pulse rate (PR) -94 bpm, regular, blood pressure (BP) -90/60 mmHg, SPO_2-100% on O_2 via NP@4l/min, bilateral lower limb swelling (right>left) and bilateral decreased air entry with occasional crepetations. Electrocardiogram normal sinus rhythm (ECG-NSR), S1q3t3, 2D ECHO shows evidence

of right ventricular volume overload with depressed RV contractility.

The patient was diagnosed with massive pulmonary embolism with right lower limb DVT. In view of age and higher bleeding risk, catheter directed thrombolysis was planned.

Patient started on alteplase infusion via perfusion catheter in main pulmonary artery along with systemic unfractionated heparin infusion to maintain optimal aPTT.

After 12 hours of anticoagulation and local thrombolysis, a firm localised swelling was noted in left Submandibular region.

His blood investigations were unremarkable for inflammatory markers, haemoglobin-9.7, and platelet-2.43l. His coagulation profile was mildly deranged with PT-12.4, liver function test (LFT), renal function test (RFT) and thyroid function test (TFT) were within normal limits.

Bedside ultrasonography of neck region revealed soft tissue swelling involving entire neck region with no significant lymphadenopathy or hematoma. Possibility of localised hematoma at the central venous catheter site was ruled out on ultrasonography. In view of rapidly increasing swelling along with left submandibular ecchymosis, computed tomography (CT) neck was performed.

A contrast enhanced CT scan of neck revealed a fairly large ill -defined hyper dense soft tissue suggesting hematoma noted in left submandibular, left masticator and left parotid space involving fibers of left massetric muscle and probably the superficial lobe of left parotid measuring about 9×5.5 cm in axial and 8.1cm in cephalocaudal extent. The supraglottic airway is displaced to right side with edema along left lateral wall of supraglottic airway. Extravasation of small quantum of intravenous contrast within the hematoma in left submandibular region represent small arterial ooze probably from one of the branches of left external carotid artery. An endotracheal tube in situ (Figures 1 and 2).

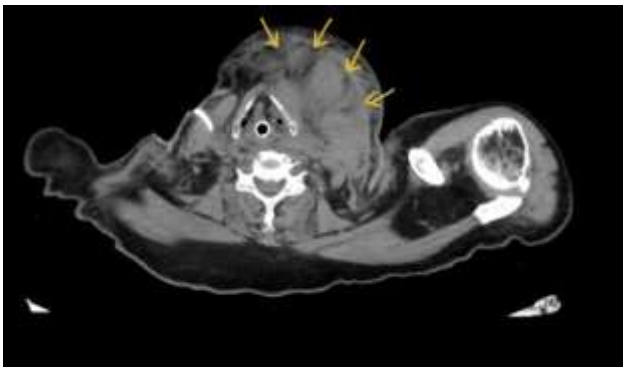

Figure 1: Yellow arrow - hematoma at the level of thyroid cartilage.

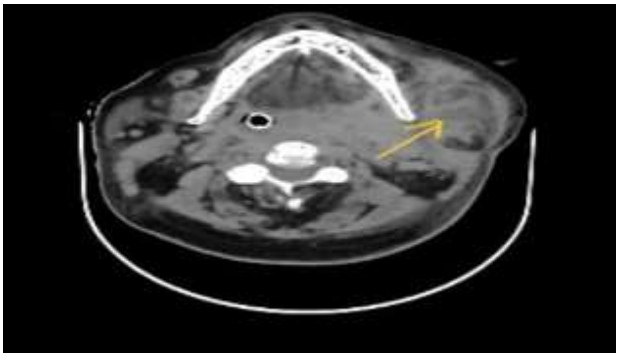

Figure 2: Yellow arrow - hematoma in left parotid space.

Bedside flexible fibreoptic laryngoscopy showed significant bulge on left side of posterior pharyngeal wall, oropharynx, hypopharynx.

In view of clinical diagnosis of neck hematoma, his anticoagulants were withheld. The patient was started on IV antibiotics and IV steroids (Dexamethasone). The swelling slowly started reducing in size. Multidisciplinary meeting was conducted and tracheostomy was planned in view of difficult extubation and reintubation.

On 4th day of thrombolysis, the trial of extubation was given after cuff leak test. The extubation was challenging due to the risk of failure. Reintubation would have been difficult due to excessive neck swelling and airway compromise.

On cuff leak test- 230 ml air leak after cuff deflation was seen and the patient was able to vocalise and had good inspiratory efforts. Hence the trial of extubation was given. Patient tolerated the extubation well and the anticoagulants were started (Figures 3 and 4).

Figure 3: Swelling over left side of neck, postextubation.

The patient was shifted from intensive care unit (ICU) to the ward after 1 week of thrombolysis and the swelling of neck resolved with subsequent days. The patient was discharged with stable signs and marked improvement of symptoms and the size of the hematoma.

Figure 4: Resolving neck swelling with ecchymosis (red arrow).

DISCUSSION

A spontaneous cervical hematoma and haemorrhages are unusual, but is a life-threatening condition. The dreaded complication of neck hematoma is airway compromise. Though upper neck hematomas are rare with anticoagulant therapy, reports are there in which spontaneous hematoma occurred even with a bout of violent coughing.[6] The most common neck hematoma in patients who were undergoing anticoagulation therapy are laryngeal, retropharyngeal and sublingual.

Regarding definitive management of spontaneous neck hematoma, no evidence exists on the best approach in literature. Rosenbaum proposes close monitoring in intensive care unit (ICU).[7] Cohen and Warman advocate early tracheostomy in all patients.[8] Genovesi et al suggests early surgical evacuation of hematoma, but it carries risk of increasing airway compromise and soft tissue edema and is not warranted.[9] Studies by Hefer et al and Karmacharya et al have shown that there is no difference in outcome between conservative and aggressive approaches.[6,10]

The choice between observation, intubation or a surgical airway intervention depends on course of disease and high rate of airway occlusion.

Steroids may be used to reduce soft tissue edema and help minimize airway obstruction in patients with neck hematoma. In the intubated patient developing neck hematoma, extubation becomes challenging due to predicted difficulty with reintubation.

Complications associated with extubation may be either minor or major. Minor complications are transient and do not require reintubation. This includes transient hypertension, tachycardia, coughing, bucking and agitation.

Major complications usually refer to extubation failure, which is generally defined as the need for reintubation within 24-72 hours after extubation.

Therefore, the management solely depends on natural course and condition of patient.

CONCLUSION

Spontaneous neck hematoma represents a rare but potentially life-threatening complication, particularly in the context of thrombolysis. The management of spontaneous neck hematoma benefits greatly from a multidisciplinary approach, which facilitates vigilant airway monitoring, reduces the need for additional interventions, and promotes early recovery in patients with difficult airways and associated complications. Our case highlights that a conservative strategy, maintained for 3–5 days, can significantly minimize the necessity for surgical intervention, shorten hospital stay, and support favorable outcomes. Importantly, individualized extubation strategies—such as cuff-leak testing—play a critical role in preventing unnecessary surgical procedures and reducing morbidity. This case reinforces the value of tailored, patient-specific management plans in addressing rare but high-risk presentations of cervical hematoma, particularly those occurring after thrombolysis.

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