

CASE REPORT

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A novel approach to spontaneous retropharyngeal hematoma—a case report

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Abstract

Background Retropharyngeal hematoma is a rare but life-threatening situation and may require emergency tracheostomy or surgical drainage if the airway is compromised. We present a case of a retropharyngeal hematoma with shown active submucosal bleeding and describe the novel approach taken for compression and control of the hemorrhage.

Case presentation A 76-year-old man presented to our institution complaining of dysphagia and pharyngeal discomfort hematoma since that morning. The laryngoscopy showed a hematoma of the posterior wall of the hypopharynx. A computerized tomography scan with contrast was done, demonstrating a collection in the retropharyngeal space, and a small active vessel could be identified.

The patient was intubated, and compression was performed in the location of the retropharyngeal hematoma using the esophageal balloon of a Blakemore tube, with successful control of the active bleed.

Conclusions Retropharyngeal hematoma can be fatal, and we present a unique solution that can be used to successfully stop the bleeding while avoiding more invasive strategies, by performing compression with a Blakemore esophageal balloon to stop the bleeding.

Keywords Retropharyngeal hematoma, Compression, Airway, Case report

Background

Retropharyngeal hematoma (RPH) is a rare but life-threatening situation, described in various clinical case reports in literature. Most cases are resultant of major trauma, postoperative complications of cervical spine surgery or hypocoagulation [1–6].

In patients with intact airways and no signs of complication, close observation and monitoring may be sufficient, as the hematoma naturally absorbs [5, 6]. However, if the airway is compromised, endotracheal intubation is emergent, and an emergency tracheostomy or surgical

drainage may be performed [2, 4, 7], as this condition may be fatal due to mechanical blockage of the airway [8].

We present a case of a retropharyngeal hematoma with shown active submucosal bleeding and describe the novel approach taken for compression and control of the hemorrhage.

Case presentation

A 76-year-old man presented to our institution complaining of dysphagia and pharyngeal discomfort since the previous night, and when waking up, he noticed an anterior cervical and thoracic ecchymosis. Upon questioning, he recalled having done physical exertion in the morning before, with mild cervical pain afterwards. He denied breathing difficulty.

His medical history consisted of a renal transplant for chronic renal disease of glomerular cause, probably IgA, hypertension, and dyslipidemia.

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As a child, he had had recurrent macroscopic hematuria until the age of 16, and Henoch-Schoenlein Purpura at 11 years old. As an adult, he experienced two episodes of upper digestive bleeding from a duodenal ulcer and two episodes of hemoperitoneum from peritoneal dialysis. He had had dental extractions with no complications. Only 2 months before he had been admitted for diverticular bleeding, but the blood work at that time had shown no alterations, so there was no diagnosis of underlying bleeding diathesis.

On the physical examination, he presented eupneic, with no signs of respiratory distress. An anterior neck ecchymosis was visible, extending to the sternum, about 10 cm in height. On the laryngoscopy, a hematoma of the posterior wall of the hypopharynx was visible, with asymmetry of the pyriform sinus, and extension to the left vallecula, but with a preserved airway.

Contrast-enhanced computerized tomography (CT) of the neck was done, with nephrological prophylaxis. As pictured in Fig. 1, it showed an enlargement and densification of the retropharyngeal space, from the transition of the oro to the hypopharynx until D2, with hypodense homogenous content, not suggestive of an infectious collection. After the administration of contrast, a homogenous increase in the density of the collection was defined. Additionally, in the arterial angiographic study, a small vessel could be identified, associated with small vascular structures, possibly retropharyngeal arteries, located on the level of the cricoid cartilage. This vessel was markedly defined in the arterial phase suggesting a probable point of vascular rupture responsible for the described hematoma (spot sign—marked with an arrow in Fig. 1A, B).

There was also densification of the fat in the retrostyloid parapharyngeal space and of the fat that surrounds the visceral space, as well as the subcutaneous fat. The hematoma caused the collapse of the hypopharynx and pyriform sinus, but the airway remained patent.

In summation, this was a case of spontaneous retropharyngeal hematoma in a 76-year-old man with a history of easy bleeding. The patient was intubated and taken to the operating room to attempt to stop the bleeding with compression. A Blakemore tube was introduced, and the esophageal balloon was positioned in the location of the hematoma and inflated to 30 mmHg. An adequate positioning of the Blakemore balloon as well as the endotracheal tube located anteriorly was confirmed with endoscopic visualization and after confirmation from the anesthetist of ample ventilation. The compression was maintained for 8 h with the patient in the intensive care unit, after which the balloon was deflated and a follow-up CT was performed.

The post-compression CT scan (Fig. 2) showed the hematoma still present from the oropharynx to D2, lateralized to the left, but the densification of the fat had reduced in comparison with the previous exam. The vessel was no longer visible after administration of contrast, which suggested an effective hemostasis, with no evidence of active bleeding at that point. The patient was extubated and remained in inpatient care for 2 weeks, with complete reabsorption of the hematoma and symptoms.

His laboratory results included a hemoglobin level of 10.3 g/dL, platelet count of 162,000 cells/ μ L, prothrombin time of 13.6%, international normalized time of 1.22, and activated partial thromboplastin time of 47.4 s. Further blood work showed Factor XIII at the lower limit of the normal range (43% of activity).

Conclusions

The retropharyngeal space is located immediately behind the nasopharynx, oropharynx, hypopharynx, larynx, and trachea. It extends from the skull base to the second thoracic vertebrae. Retropharyngeal hematoma is rare and occurs mostly as a complication of cervical spine surgery or hypocoagulation [5, 6]. Other causes such as

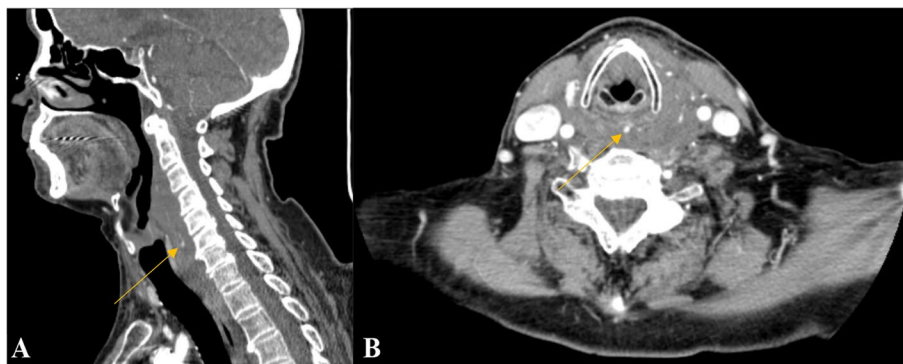


Fig. 1 CT scan of retropharyngeal hematoma with spot-sign (arrow) in sagittal (A) and axial (B) cuts

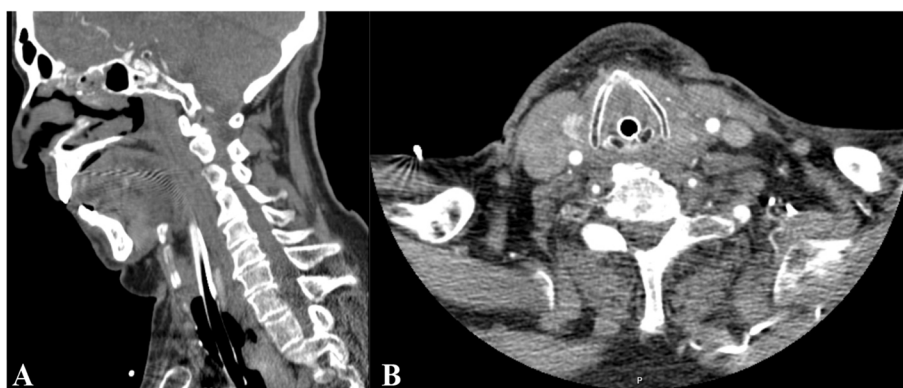


Fig. 2 CT scan of retropharyngeal hematoma after 8 h of compression with the Blakemore balloon, with the patient still intubated. Note the absence of spot-sign

underlying bleeding diathesis, and even cases of apparent spontaneous bleeding have been described [4, 7, 9].

Preserving/securing the airway is the most important step, so intubation or emergency tracheostomy may be necessary [4, 5, 7]. In most cases, conservative therapy is the treatment of choice, with close observation, as most hematomas regress spontaneously; however, certain situations may indicate neck exploration surgery [2, 6]. More recently, cases in the literature have described performing artery embolization in retropharyngeal hematoma when a large artery could be identified [1, 3]. In this case, after discussion with neuroradiology colleagues, they did not recommend this procedure, as the vessel involved would be difficult to identify and embolize.

Surgical exploration of the retropharyngeal space to drain the hematoma was excluded as an option due to

the risk of incurring more bleeding due to the patient's easy bleeding history. It is an option usually avoided in hematomas secondary to hypocoagulation or underlying bleeding diathesis [5].

Without these possibilities, surgical compression of the hematoma through the hypopharynx was considered the best option, and the idea to use a Blakemore esophageal balloon appeared as the least aggressive on the mucosa, when compared to the use of gauze. A gastroenterologist was contacted to assist in the procedure, and the esophageal balloon was placed in the location of the hematoma (visible through endoscopy) and inflated in order to perform compression and stop the bleeding. A schematic of the procedure is represented in Fig. 3 [10].

The cause for the patient's propensity for easy bleeding is most likely multifactorial, a combination of his

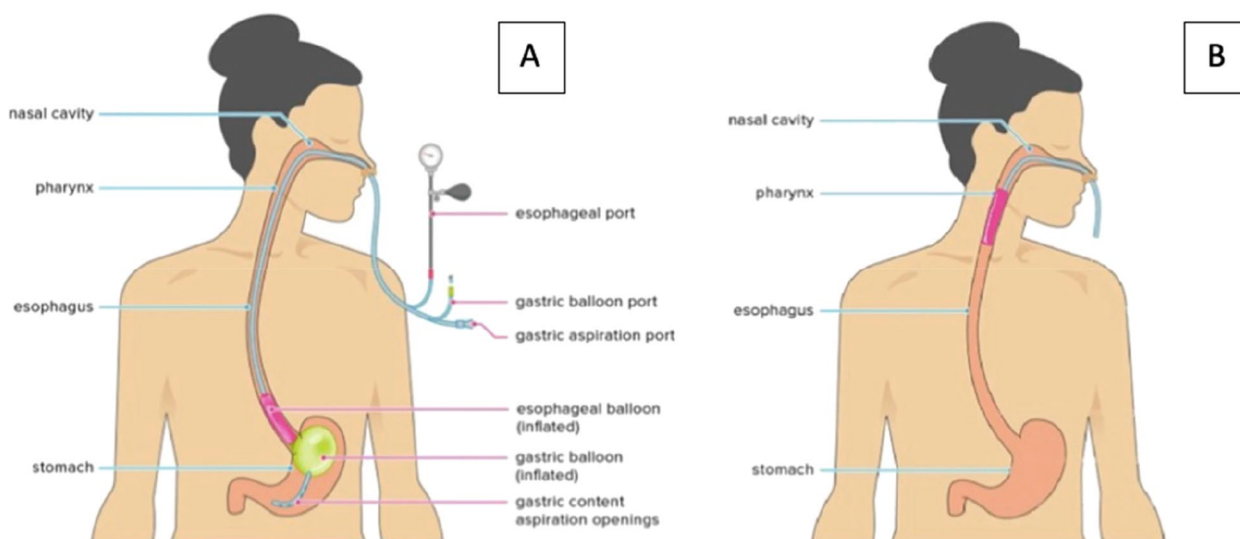


Fig. 3 Schematic of the positioning of the Blakemore esophageal balloon to perform compression of the retropharyngeal hematoma (A original [10], B edited to represent the location of compression used in this case)

hypertension, IgA nephropathy, slight factor XIII reduction, and chronic corticotherapy.

With this case, the authors report a novel approach to retropharyngeal hematoma with successful resolution, without the necessity of a tracheostomy or cervical drainage. However, the major limitation of this study is the unavailability of images of the videolaryngoscopy or surgical procedure.

In conclusion, retropharyngeal hematoma is a rare but potentially fatal occurrence. In this case, the patient's easy bleeding history in conjunction with confirmation of active bleeding in the CT scan led to the unique decision to perform compression with a Blakemore esophageal balloon to stop the bleeding and was very successful.

Abbreviations

RPH Retropharyngeal hematoma
CT Computerized tomography

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Not applicable.

Authors' contributions

MJC: writing of the manuscript. JL: conception of the work. AM: revision of the manuscript. LM: revision of the manuscript.

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Availability of data and materials

Not applicable.

Declarations

Ethics approval and consent to participate

This study was approved by the Ethics Committee of Centro Hospitalar Universitário de Santo António.

Consent for publication

Written informed consent for publication was obtained from the patient.

Competing interests

The authors declare that they have no competing interests.

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