Spontaneous Atraumatic Posterior Mediastinal Hemorrhage: A Rare Case Report and Review of Literature

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Abstract

We are reporting a rare case of spontaneous atraumatic mediastinal hematoma in a previously apparently healthy middle aged female who presented with acute onset dysphagia, increasing neck swelling and spontaneous neck and chest bruising. Plain chest radiograph showed widening of the mediastinum. Contrast CT scan of neck and chest revealed a soft tissue swelling in retropharyngeal space causing esophageal compression anteriorly confirming the diagnosis of Posterior Mediastinal Hemorrhage. There are only few cases of posterior mediastinal hemorrhage reported in the literature. The etiology remains uncertain and the treatment modalities can be classified into 2 broad categories: conservative and operative management. We present this rare condition and its management discussed.

INTRODUCTION

Spontaneous atraumatic mediastinal hematoma is a rare condition and is hardly encountered in routine ENT practice. Diagnosis and management of atraumatic posterior mediastinal hematoma is a challenge to the otolaryngologist. Posterior mediastinal hematomas (PMH) can be traumatic and atraumatic (spontaneous). Traumatic PMH can be due to blunt, penetrating or iatrogenic injuries [1]. Traumatic PMH are usually seen in patients with a history of fall from height. It may be associated with blunt acute thoracic aorta injury, hemorrhage from azygos, hemiazygos veins, vena cava, and small venous tributaries of the internal mammary, brachiocephalic and inferior thyroid veins [1-4].Mediastinal hematoma is common among patients with vertebral fractures. In literature cited by Earls et al, stated that approximately two third of patients [66%] with fractures of vertebral bodies to C6-T8 are associated with mediastinal hematoma [5]. Traumatic PMH is more commonly seen as compared to atraumatic PMH. A review of literature from 1980 till present reported 46 cases of PMH, with 9 cases secondary to blunt trauma [6].

However, spontaneous mediastinal hematomas are very rare. The condition demands early diagnosis and intervention, which if not dealt with caution can lead to rapid deterioration and death.

CASE PRESENTATION

A 70 years old woman presented to the emergency department with 3 days history of acute onset dysphagia, gradually increasing swelling in the neck with spontaneous bruising in the neck and chest (Figure 1). There was history of bouts of vomiting preceding the dysphagia. Besides vomiting, there was no history of trauma, palpitation, chest tightness, dyspnoea, hemoptysis or hematemesys or any other constitutional symptoms. There was no past history of bleeding disorder or any co-morbidities or anticoagulation therapy. At presentation, her vitals were stable. Neck and chest examination revealed firm nontender diffuse swelling in the neck along with extensive bruising involving both sides of neck and extending to upper chest and breast. An urgent chest radiograph was done which revealed thickened prevertebral soft tissue shadow in the cervical region with...
widened mediastinum on anteroposterior view. The patient was put on intravenous line and supported with intravenous fluid and antibiotic. Her routine hematological profiles were evaluated and found to be within normal limits. Coagulation profile showed prothrombin time of 9.6, activated partial thromboplastin time of 25, and international normalized ratio of 0.86.

On day 2 of hospital stay, 700 rigid laryngoscopic examination was done which revealed a smooth diffuse bulge along with bruising on the posterior pharyngeal wall mucosa with pooling of saliva in both pyriform sinuses (Figure 2). Hematological consultation was done on the same day and specific blood investigations were done including antiphospholipid syndrome antibody, hepatitis profile, and thyroid function test as per their advice but no abnormality was found. On the same day, a contrast enhanced computed tomography of neck and thorax was done which revealed a well defined soft tissue mass of size 9.8 x 2.8 x 3.8 cm in the retropharyngeal space extending from lower border of C5 vertebra to the level of tracheal bifurcation (T5-T6) with largest AP diameter of 2.2 cm seen at the level of T4 vertebra causing anterolateral esophageal compression (Figure 3). Laterally the soft tissue mass extended focally into right paratracheal space and inferiorly towards left, lying in the posterior mediastinum. On 3rd hospital day, MRI of neck and thorax was done which confirmed the presence of posterior mediastinal hematoma with extension described as above with all major mediastinal vessels found to be normal (Figure 4). The case was managed conservatively in the ward under close monitoring. The patient remained hemodynamically stable in the ward without any deterioration of her clinical condition. Her neck and chest wall bruising started to disappear. Neck swelling subsided significantly and dysphagia resolved completely. Repeat 700 laryngoscopic examination was done which revealed no bulging of posterior pharyngeal wall with normal looking mucosa (Figure 2). A repeat computed tomography CT was done on 10th hospital day which revealed hematoma in the mediastinum that had significantly reduced in size. The patient was discharged home after 14 days of uneventful hospital stay. Patient is on regular follow up on outpatient basis. On her first follow up 7th day of discharge her bruising on the neck and chest wall was completely disappeared (Figure 5).

DISCUSSION

There are various causes which can lead to acute mediastinal hemorrhage including major thoracic trauma [6], cardiac and great vessel aneurysm, dissection or rupture [7], hypertension [8], or iatrogenic causes including invasive procedure [9], as well as Valsalva maneuver [10]. However, spontaneous mediastinal hematomas are a rare presentation. Shimokawa et al [11] have mentioned the 4 clinical settings where spontaneous mediastinal hemorrhage can occur: a) as complication of enlarging mediastinal masses. b) Sustained hypertension, c) hematological conditions, and d) transient increase in intrathoracic pressure. In our patient, transient increase in intrathoracic pressure could be a factor leading to posterior mediastinal hemorrhage as the patient had several episodes of vomiting proceeding to dysphagia.

A high index of suspicion for mediastinal hematoma should be kept for any patient who presents with symptoms of acute...
superior mediastinal compression, chest radiograph showing widened mediastinum, and bruising over the neck and upper chest [12]. These patients require urgent attention and interventions like contrast CT and MRI scan to confirm the diagnosis. Chest X-ray is the standard initial screening test to assess any patient with thoracic injury. As described by Rojas et al. (2009), the radiological signs in indicating a possible arterial mediastinal injury include widening of the superior mediastinum >8 cm, at the level of the aortic arc. The presence of a bluish or grayish at the left lung apex i.e., an “apical cap”, widening of the right paratracheal stripe > 5 cm, and deviation of the nasogastric tube if placed) to the right of the T4 spinous process [1].

Based on the patient’s condition and diagnostic findings, the treatment options include the following: conservative careful wait and watch for stable patient as in our case and operative management including angiography and embolization [10]. Operative intervention is indicated in cases of significant mediastinal bleed leading to hemodynamic instability of the patient. Initial management of such patients include securing the airway via endotracheal intubation, and establishing peripheral access with large bore venous catheterization or central line placement and resuscitation with fluids, blood transfusion, and reversal of coagulopathy, if required. Identification of the site of bleeding may be achieved through angiography and hemodynamic control can be accomplished via embolization. If unsuccessful, patients may require operative exploration via left sided thoracotomy, with repair and evacuation of any blood within the mediastinum [13, 14].

In stable patients, constant hemodynamic monitoring and serial examination of the patient’s hematologic indices can suggest a continued bleed, which was not there in our case and patient remained stable throughout the period of hospital stay. Repeat scans can assess the degree of resolution of the hematoma.

Although in our patient a very large mediastinal hematoma was seen but being hemodynamically stable she was successfully managed conservatively without any surgical intervention and the patient recovered gradually.

CONCLUSIONS

Spontaneous mediastinal hematomas are rare entity. A careful clinical initial assessment of patient will decide whether the patient requires emergent invasive intervention, or can be managed conservatively. Our paper outlines the approach for a successful management of atraumatic PMH in a previously apparently healthy patient. With respect to this case, strict monitoring of the patient’s vital signs and hematologic indices, in addition to serial radiological and endoscopic examinations were of paramount importance.

REFERENCES