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Case Report Open Access

Neck ecchymosis: a rare symptom in a ruptured thoracic aorta dissection

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ABSTRACT

A 73-year-old woman was admitted to the emergency room with sudden onset of neck swelling, ecchymosis, and chest pain. Computed tomography revealed a ruptured type B dissection and mediastinal hematoma extending towards the neck. The patient underwent emergent endovascular repair and the procedure was accomplished without any signs of endoleak. She was discharged on the fourth postoperative day and has been followed for 50 months without any complaints.

Keywords: Neck ecchymosis; ruptured thoracic aortic dissection; thoracic endovascular aortic aneurysm repair.

Acute type B aortic dissection is a life-threatening condition associated with high morbidity and mortality in the current era.[1] Medical therapy is the first treatment of choice for uncomplicated type B acute aortic dissection, while complicated acute type B dissections require an urgent approach by an open surgical or endovascular intervention. Sudden-onset chest or back pain without any evidence of myocardial ischemia is the most common symptom.[1,2] Other signs and symptoms such as syncope, cerebrovascular accidents, altered mental status, numbness and tingling, pain or weakness in the extremities, the pressure difference between the extremities or pulseless, Horner syndrome, dyspnea, hemoptysis, dysphagia, flank pain abdominal pain, anxiety and premonitions of death are also well-described.[1,2] In very rare cases, ecchymosis on the skin of the neck and upper chest wall caused by a rupture into the mediastinum has been also reported.[3-5]

Herein, we report an unusual case of a patient who presented to the emergency department with complaints of sudden neck swelling and ecchymosis. The patient was diagnosed with a ruptured type B dissection and treated by endovascular technique. This case is presented due to its rarity and discussed in the light of treatment options based on the literature data.

CASE REPORT

A 73-year-old woman presented to the emergency department with sudden onset of chest pain, neck swelling and ecchymoses (Figure 1). Her medical history revealed no head or neck trauma. She was on treatment for ischemic heart disease, hypertension, chronic obstructive pulmonary disease, and type 2 diabetes mellitus. She also had a previous history of thyroid surgery.

Physical examination revealed a large neck ecchymosis extending onto the upper chest wall. All peripheral pulses were symmetrically palpable and there was no pressure difference between the upper extremities. Neurological examination was unremarkable. Her blood pressure was 160/90 mmHg, heart rate was 112 bpm, respiratory rate was 25 bpm, temperature was 36.5 °C, and oxygen saturation by pulse oximetry was 90% on room air. The hemoglobin level was 9.8 g/dL. A complete blood count demonstrated white blood cell count of 14,300/mm^3, hemoglobin level of 9.8 g/dL, and platelet count of 231,000/mm^3. Coagulation studies revealed an international normalized ratio (INR) of 1.2.

Computed tomography (CT) examination demonstrated a ruptured type B dissection causing mediastinal and neck hematomas without hemothorax

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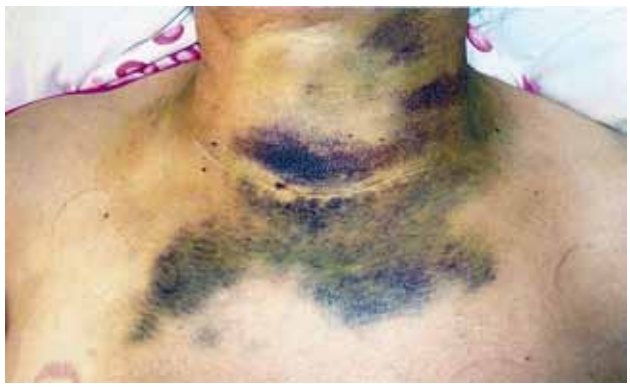

Figure 1. Large neck ecchymosis extending onto the upper chest wall.

(Figure 2). She was immediately brought to the angiography suite for endovascular treatment. Through left femoral artery, two thoracic endografts (Medtronic Valiant, Medtronic AVE, Santa Rosa, CA) were deployed from just beyond the origin of the left subclavian artery to the mid-descending thoracic aorta. Repeated angiogram did not show any evidence of endoleak at the end of the procedure. She was discharged on the fourth postoperative day. The follow-up CT at one month showed total exclusion of dissection without endoleak and size reduction of the mediastinal hematoma (Figure 3).

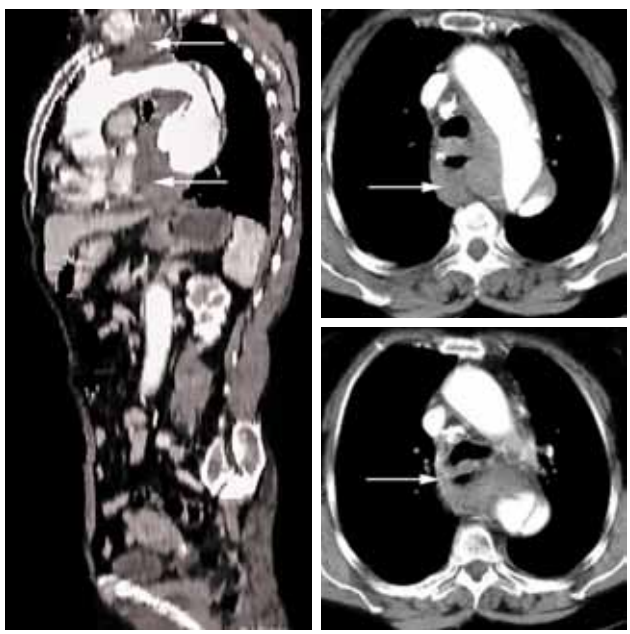

Figure 2. Preoperative computed tomography scan showing thoracic aortic dissection and mediastinal hematoma. Arrows highlight mediastinal hematoma and its extension through the thoracic outlet.

DISCUSSION

Ruptured aorta dissection is a fatal disorder, if left undiagnosed and untreated timely. It presentation may be nonspecific. Sudden-onset chest or back pain without any evidence of myocardial ischemia is the most common symptom, which accounts for approximately 90% of cases.[3,4] Paraplegia, hemiplegia, peripheral ischemia, and syncope are among the other well-described symptoms.[1,2] Our case presented with sudden onset neck ecchymosis, which is uncommon and unexpected.[3-5] The mechanism of the neck ecchymosis can be explained as follows: the posterior mediastinum extends into the retropharyngeal space, providing a communication between the chest and neck. Therefore, bleeding into the mediastinum may be seen subcutaneously in the anterior neck due to connections between retropharynx and parapharyngeal spaces. Hypertension is the most important risk factor presenting in up to 75% of patients with Stanford type B aortic dissection.[1,2] Computed tomography aortography is the gold standard for the diagnosis of aortic dissections due to its high sensitivity (98-100%) and specificity (95-98%).[2] Although magnetic resonance angiography, transesophageal echocardiography, and aortography are alternative diagnostic imaging modalities, all require institutional availability and patient stability.

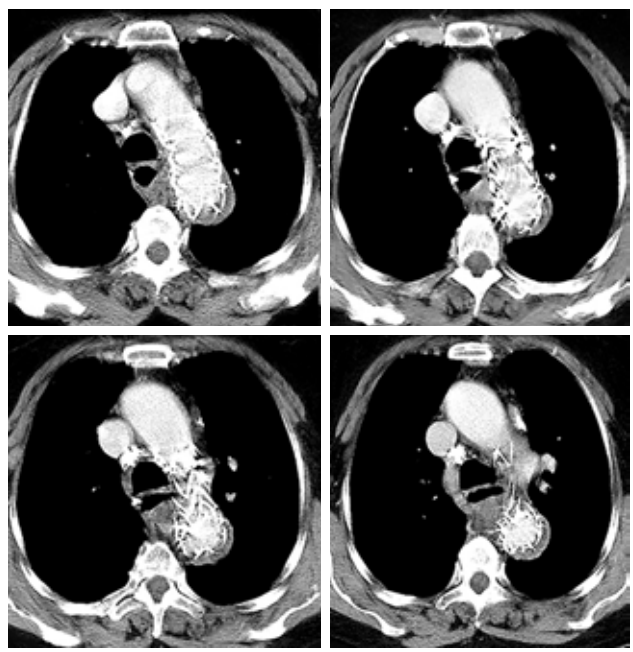

Figure 3. Postoperative computed tomography scan showing no evidence of endoleak and size reduction of the mediastinal hematoma.

Acute type B aortic dissection is treated medically, unless complicated by malperfusion, rupture, intractable pain, early false lumen expansion or uncontrolled hypertension. All complicated acute type B dissections require an urgent approach by an open surgical or endovascular intervention. The aim of endovascular repair of complicated aortic dissections is to prevent death from rupture, correction of malperfusion syndromes, and cease diameter expansion of the aneurysm. In a meta-analysis, Parker and Golledge[6] reported an in-hospital mortality incidence of 9%, an emergency surgical conversion rate of 0.6%, a periprocedural stroke rate of 3.1%, a mean 20-month survival of 88%, an endovascular re-intervention rate of 7.6% and a surgical re-intervention rate of 2.8% following endovascular repair of type B aortic dissections. On the other hand, open surgery for acute type B aortic dissection carries a 18 to 22% risk of in-hospital mortality even at experienced centers.[7] Therefore, surgery has been replaced by endovascular repair with a grade 1A recommendation.[7,8]

In conclusion, a ruptured acute type B aortic dissection may present with neck ecchymosis. This unusual presentation should always be kept in mind when managing patients with acute chest pain without any evidence of myocardial ischemia. Endovascular treatment, if applicable, should be considered the first-line treatment in complicated acute type B dissection with favorable initial and long-term outcomes.

Declaration of conflicting interests

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