

Acute Thoracic Aortic Dissection Presenting as Sore Throat

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Acute dissection of the aorta is one of the most dramatic of cardiovascular emergencies. Its symptoms can occur abruptly and progress rapidly. Prompt recognition and appropriate intervention is crucial. However, not all aortic dissections present with classic symptoms of abrupt chest, back, or abdominal pain, and therefore the condition may be misdiagnosed. Aortic dissection presenting as a sore throat is quite unusual. A 53-year-old man presented with sore throat as the early symptom of an acute thoracic aortic dissection. Unfortunately, the diagnosis was not made in time and the patient died. Given the high morbidity and mortality associated with acute dissection if it is misdiagnosed, aortic dissection should be considered a differential diagnosis if a patient presents with sore throat and normal neck and throat findings, even when there are no classic symptoms. (*Mid Taiwan J Med* 2004;9:244-8)

Key words

aortic dissection, sore throat, thoracic aortic dissection

INTRODUCTION

Acute thoracic aortic dissection, one of the most common and serious diseases of the aorta, carries a high morbidity and mortality rate when it is not recognized and treated promptly. The mortality of untreated aortic dissection has been reported to increase by 1 percent per hour, and 40% to 50% of patients die within 48 hours [1,2]. For those who survive the initial 48 hours, the disease has been reported to carry a 90% 1-year mortality rate [1,2]. Since the introduction of modern treatment regimens, the fatality rate has declined dramatically. Patients with proximal ascending dissections who rapidly undergo surgery in experienced tertiary centers have a 30-day survival rate of 80% to 85% and a 10-year survival of 55% [3]. Early intervention is dependent upon rapid establishment of the diagnosis of aortic dissection.

Aortic dissection may not always present with the classic symptoms of abrupt chest, back, or abdominal pain indicative of an acute cardiovascular event. By understanding the pathophysiology of aortic dissection, the clinician may better understand the relationship between the dissection process and the resulting symptomatology. We present one patient with acute thoracic aortic dissection who initially presented with sore throat.

CASE REPORT

A 53-year-old man presented to the emergency room in the early morning with a sore throat which had developed a few hours after chewing betel nut the night before. The discomfort was first noted as a foreign body sensation in the throat while he was resting in bed. The pain worsened rapidly, prompting him to seek medical attention. The patient regularly chewed betel nut and smoked cigarettes (one pack per day). His medical history included a gastric ulcer and left renal calculi. He also had a history of proton pump inhibitor therapy and eradication

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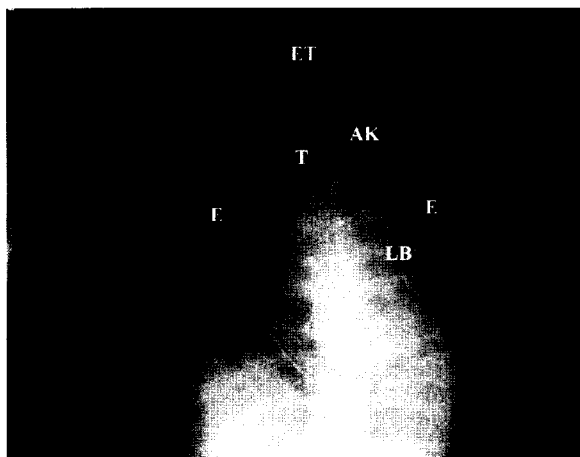


Fig. 1. Chest radiography shows widening of the mediastinum, deviation of the trachea to the right, depression of the left main stem bronchus, obliteration of the aortic knob, enlargement of the heart and left-sided pleural effusion. AK = aortic knob; E = ECG conductive adhesive electrode; ET = endotracheal tube; LB = left bronchus; T = trachea.

treatment of *Helicobacter pylori*. He had no predisposing factors of aortic dissection, such as hypertension, Marfan syndrome, bicuspid aortic valve or history of cardiac surgery, and no history of trauma, cough, rhinorrhea, dyspnea, dysphonia, fevers, chills, chest or back pain. On arrival, the patient's temperature was 36.8°C, his blood pressure was 134/86 mmHg, he had a pulse of 78 beats per minute, and a respiratory rate of 18 breaths per minute. On examination, he was conscious. There was no tenderness, palpable mass of the neck or enlargement of thyroid gland. The patient had clear breathing sounds and regular heart beats with no murmur. The abdomen was soft and flat, without tenderness or palpable mass. Laryngoscopy did not reveal any foreign body, wound or abnormal finding in the throat. Radiography of neck soft tissue showed no notable abnormal finding. The patient was therefore prescribed on analgesic (ketorolac 30 mg intramuscular injection), observed in the emergency room for 1-hour, and then discharged.

Ten hours later, the patient experienced sore throat, severe chest pain, diaphoresis and syncope and therefore returned to the ER. On examination, he was drowsy, his face was pale and he was sweating. Blood pressure was 78/34 mmHg, pulse rate was 127 beats per minute and respiratory rate

was 26 breaths per minute. Jugular vein distension was noted. There were no obvious differences in pulse rate and blood pressure between his four extremities. He had clear breathing sounds and regular heart beats without murmur. The abdomen was soft and non-tender to palpation; no mass was detected. An endotracheal tube was inserted, and mechanical ventilation support and fluid resuscitation were given immediately. The electrocardiogram (ECG) showed normal sinus rhythm and no abnormalities. The creatinine phosphokinase (CPK), myocardial band (MB), Troponin I and other laboratory data were within normal limits. The chest radiography showed widening of the mediastinum, the trachea deviating to the right, depression of the left main stem bronchus, obliteration of the aortic knob, an enlarged heart and left side pleural effusion (Fig. 1). Based on the symptoms, signs, laboratory data and chest radiography, aortic dissection was highly suspected.

Computed tomography (CT) scan of chest and abdomen suggested the presence of intimal flaps in the ascending aorta with extension to the proximal arch, hemopericardium, and hemothorax (Figs. 2A, 2B). Stanford type A aortic dissection with cardiac tamponade and hemothorax were diagnosed. An emergency operation was performed, but the patient died during the procedure.

DISCUSSION

Dissection of the aorta begins with a tear in the intimal layer. This tear permits blood to enter the aortic wall, creating an intramural hematoma progressing distally in the aorta. A common site for the initiation of an intimal tear is at the proximal portion of the ascending aorta. Upon intimal disruption, blood enters the media permitting dissection. Medial abnormalities are a result of atherosclerosis, cystic medial necrosis, and systemic hypertension. Hypertension is considered the most significant contributing factor in the pathogenesis of aortic dissection [4].

Aortic dissections have been classified by two systems. The DeBakey classification system

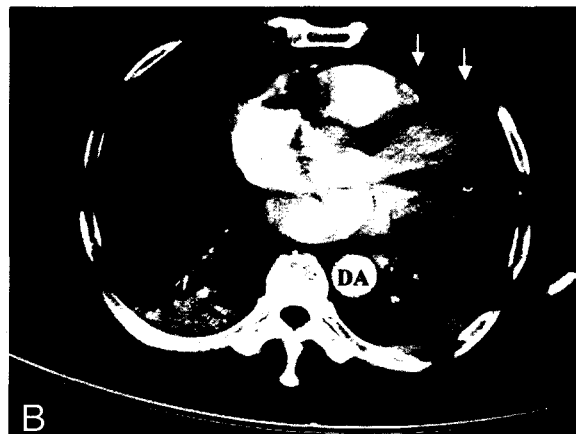


Fig. 2. A, B: CT scans show intimal flaps (arrow head) in ascending aorta, hemopericardium (white arrow), and hemothorax (black arrow). AA = ascending aorta; DA = descending aorta.

divides aortic dissection into three types depending on the extent of the dissecting process and its anatomic location [5]. Type I involves the ascending aorta and the remaining distal portions of the aorta. When the dissection is limited to the ascending aorta, it is classified as Type II. Type II usually has a transverse tear in the intima anteriorly just above the aortic valve with separation of the intramural layers that terminate proximally to the innominate artery. Type III arises distal to the left subclavian artery and extends distally. The Stanford classification system is based on the presence or absence of involvement of the ascending aorta in aortic dissection. Type A includes the ascending aorta, whereas Type B does not [6]. Lesions of the ascending arch (Type A) have an unfavorable outcome and usually require surgical intervention. Type B lesions may be amenable to medical management with antihypertensives. Our patient had a Type II or Type A aortic dissection.

Owing to the high mortality rate of aortic dissection, its protean presentations must be kept in mind. The symptoms may be caused by compression of the surrounding nerves, the branch vessels or adjacent structures. The symptoms and signs may present as acute cerebral infarction, myocardial infarction, spinal cord ischemia, intraabdominal disorders, peripheral and arterial occlusion diseases [1,7-10].

Sore throat is a very common complaint of patients in the emergency room. The differential

diagnosis of sore throat includes pharyngitis, tonsillitis, epiglottitis, peritonsillar abscess, retropharyngeal abscess, laryngeal trauma and foreign bodies. In this patient, there were no abnormal laryngoscopic, radiographic or physical examination findings, so the patient was discharged. It was not until he returned 10 hours later that he presented with chest pain, abnormal radiographic findings and hypotension. Aortic dissection was then diagnosed. In this patient, the pain was most likely secondary to compression of the surrounding nerves or adjacent structures by the expanding aneurysm of the ascending aorta close to the throat.

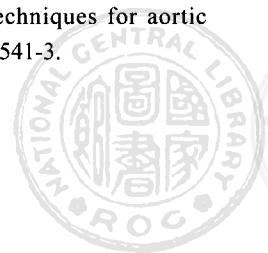
Various tools are available to diagnose aortic dissection. Aortography is the most definitive tool for confirming this disease [2]. Plain chest radiographs are widely available in emergency rooms. The sensitivity of chest radiography is 64% and the specificity is 86% [11]. Transthoracic echocardiography is limited in its ability to examine the descending thoracic aorta. The sensitivity of transthoracic echocardiography for diagnosing aortic dissection ranges from 77% to 80%, while the specificity ranges from 93% to 96% [12,13]. Erbel et al [14] reported that the sensitivity of transesophageal echocardiography was 99% and the specificity was 98%. A number of investigators evaluating the effectiveness of contrast-enhanced CT scanning in diagnostic aortic dissection have demonstrated a sensitivity ranging from 83% to

100% and a specificity ranging from 90% to 100% [15,16]. Magnetic resonance imaging has a sensitivity of 90% to 100% and a specificity of 100% [17,18]. If there are any suspicions of aortic dissection, the above methods should be considered. While advanced imaging techniques can confirm the diagnosis of thoracic aortic dissection in patients, it is inefficient, uneconomical, and unrealistic to image every patient. Indiscriminate use of diagnostic imaging in unselected patients with very low pretest probability of having dissection has been predicted to yield up to an 85% rate of false-positive results depending on the imaging modality chosen [19]. Physicians are therefore acutely dependent upon the clinical history and physical examination to determine which patients require further study.

In conclusion, aortic dissection presenting as sore throat is rare but prompt recognition and expeditious surgical treatment may increase the rate of survival in patients with this catastrophic injury. Given the high morbidity and mortality following misdiagnosis, aortic dissection should be considered in the differential diagnosis of a patient presenting with sore throat and no abnormal neck and throat findings, or history of chest pain. Because treatment is relatively simple and effective if instituted in time, emphasis should be placed on early diagnosis.

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胸主動脈剝離以喉嚨痛表現

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主動脈剝離是心血管急症之一，通常是突然發作並且迅速惡化。早期診斷與適切的治療對此病的預後非常重要。並非所有主動脈剝離的病患均具有典型的症狀，如：突然的胸痛、背痛或是腹痛，有可能因症狀不典型而被誤診或延遲診療。主動脈剝離以喉嚨痛為最初表現的症狀是非常罕見。本文報告一位53歲男性罹患主動脈剝離的案例。此患者最初以喉嚨痛的症狀表現，因為診斷延遲造成死亡。由於延誤治療會導致高死亡率，當病人患有喉嚨痛並且無明顯的頸部或喉部異常發現時，儘管無典型的症狀，主動脈剝離仍需要列為鑑別診斷。（中台灣醫誌 2004;9:244-8）

關鍵詞

主動脈剝離，喉嚨痛，胸主動脈剝離

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