

Extensive Intestinal Ischemia After Acute Aortic Dissection

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ABSTRACT

Aortic dissection is one of the leading life threatening cardiovascular emergencies. In this clinical entity, following the intimal tear, blood forms a channel splitting the inner and outer sheets of the medial layer. Pushing forward through the medial layer, the blood detaches the intima from the adventitial layer. There can be complications such as rupture, obstruction and occlusion of certain aortic branches. It is well known that acute aortic dissection (AAD) leading to intestinal ischemia is difficult to manage and having high mortality rates. It is worrisome that a lot of sufferers with atypical or insignificant clinical signs can't have the chance for early diagnose and treatment. By the time intestinal necrosis progresses and manifest physical signs become apparent, usually multiple organ failure occurs and the cases surviving need extensive intestinal resections with high mortality and morbidity. Here we report a case of acute aortic dissection with extensive intestinal ischemia, in order to point out the importance of this clinical entity.

Key words: Aortic diseases, dissection, colitis, ischemia, gastrointestinal hemorrhage

Akut Aort Disseksiyonu Sonrası Yaygın İskemik Bağırsak Hastalığı

ÖZET

Aort diseksiyonu hayati tehdit oluşturan kardiyovasküler acillerin ilk sıralarında yer alır. Aort diseksiyonunda kan, intima yırtığı nedeniyle medianın iç ve dış tabakalarını ikiye ayırarak media tabakası içinde bir kanal oluşturur. Kan media tabakası içinden ilerleyerek, intima tabakasını adventisyadan ayırır. Rüptür, obstrüksiyon, aort dallarında tıkanma gibi komplikasyonlar oluşabilir. İntestinal iskemiye neden olan akut aort diseksiyonunun (AAD) tedavisinin oldukça zor olduğu ve yüksek mortalite ile seyrettiği bilinmektedir. Üzücüdür ki klinik bulguları silik veya atipik pek çok olgu erken tanı ve tedavi şansı bulamamaktadır. İntestinal nekroz gelişip aşikar fizik muayene bulguları ortaya çıktığında ise sıklıkla multipl organ yetmezliği oluşmakta ve yaşayan olgularda mortalitesi ve morbiditesi oldukça yüksek olan geniş barsak rezeksiyonları gerekmektedir. Burada, yaygın iskemik bağırsak hastalığı ile başlayan akut aort disseksiyonlu bir olgu sunularak bu önemli konuya dikkat çekmek amaçlanmıştır.

Anahtar kelimeler: Aort hastalıkları, diseksiyon, kolit, iskemi, gastrointestinal kanama

INTRODUCTION

Aortic dissection is one of the leading life threatening cardiovascular emergencies. In this clinical entity, following the intimal tear, blood forms a channel splitting the inner and outer sheets of the medial layer. Pushing forward through the medial layer, the blood detaches the intima from the adventitial layer. There can be complications such as rupture, obstruction and occlusion of certain aortic branches. It is well known that acute aortic dissection (AAD) leading to intestinal ischemia is

difficult to manage and having high mortality rates (1-4). It is worrisome that a lot of sufferers with atypical or insignificant clinical signs can't have the chance for early diagnose and treatment. By the time intestinal necrosis progresses and manifest physical signs become apparent, usually multiple organ failure occurs and the cases surviving need extensive intestinal resections with high mortality and morbidity.

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CASE

57 years old male patient without any known diseases before had been admitted to a local state hospital with sudden onset of severe abdominal and back pain and bilious vomiting. In this hospital, examination had resulted as mild abdominal tenderness with normal certain blood tests. Having been diagnosed as peptic ulcer, patient was discharged with pantoprazole and metochlopramide from this hospital. The patient had gained no improvement with this treatment and next day, he readmitted with rectal hemorrhage to the same hospital. With this second admission, the patient had been advised to be examined with endoscopic investigation because of lower gastrointestinal bleeding and sent to our hospital. Initial physical examination in our hospital resulted as mild abdominal distension, epigastric tenderness, decreased intestinal sounds, and rectal digital examination with fresh bloody stool. Blood pressure was 180/100 mmHg. There was no significant family history of any disease, and no physical sign compatible with any genetic syndrome. Routine blood chemistry and complete blood count listed as: WBC:16.440/mm³ (4500-11000), Hemoglobine:15.6 g/dl (12.6-17.4),

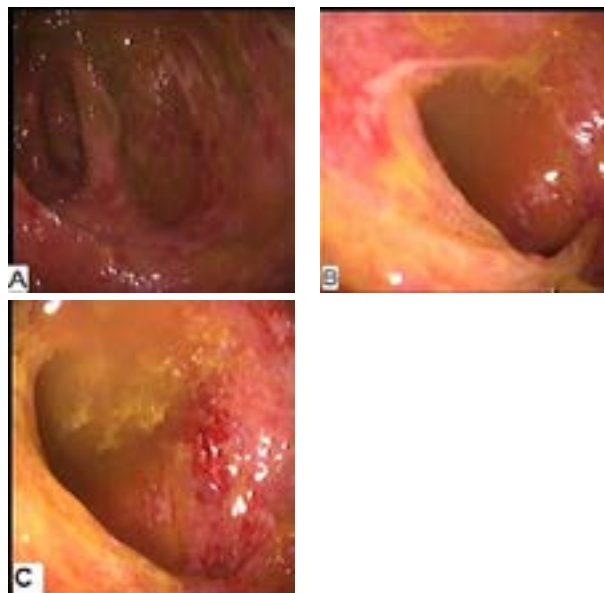


Figure 1. Colonoscopy revealed ulcers, ischemic areas, submucosal hemorrhages in caecum (A), ascending colon (B) and proximal transverse colon (C).



Figure 2. Endoscopy revealed normal bulbus (A) but extensive ulcers and ischemic areas starting from the second part of the duodenum (B).

Hematocrite:45.5 % (37-51%), Platelet:129.000/mm³ (150.000-400.000), aPTT:16.2 seconds (25-38), INR:1.13 (<1.2), Glucose:129 mg/dl (76-110), Urea: 63.9 mg/dl (17-50), Creatinine:1.74 mg/dl (<1.2), AST:156 IU/lt (<38), ALT:201 IU/lt (<41), Total Bilirubine:0.67 mg/dl (0.3-1.2), Direct Bilirubine:0.21 mg/dl (0-0.3), Lactate Dehydrogenase:1222 IU/lt (<530). Blood pressure decreased to 140/60 mmHg with intravenous nitroglycerine infusion. While hemodynamic was stable, colonoscopy applied. With colonoscopy, ulcers, ischemic areas, submucosal hemorrhages were visualized in the terminal ileum, caecum, ascending colon, and proximal transverse colon (Figure-1). Upper gastrointestinal endoscopy was applied after colonoscopy and resulted as extensive ulcers and ischemic areas in the duodenum, consistent with acute mesentery ischemia (Figure-2). Computerized tomographic (CT) angiography showed Stanford Type B acute aortic dissection (AAD), starting from aortic arch, running along the descending aorta and reaching distal to the left renal artery, with occlusion of celiac, mesenteric, and the left renal arteries (Figure-3). Emergency operation planned by cardiovascular surgery department, but cardiac arrest occurred. Cardiopulmonary resuscitation was applied, but the patient died.

DISCUSSION

Ischemic necrosis due to ceased visceral circulation is one of the most severe complications of acute aortic dissection. Mortality reaches high rates (70-90%), specifically because of the failure in early diagnose and treatment (5-6). In clinical practice, infrequency of ischemic

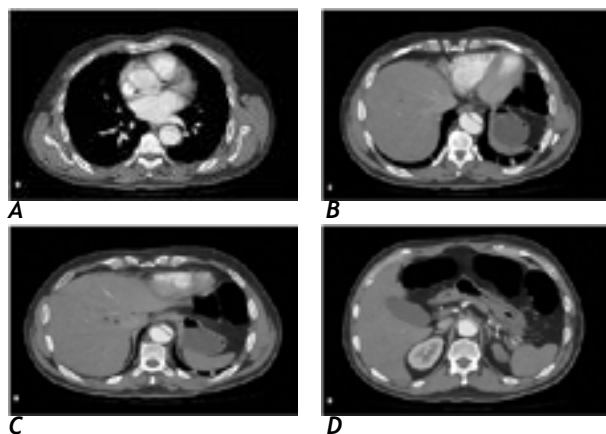


Figure 3. CT angiography showed Stanford Type B aortic dissection; starting from the aortic arc and reaching distal to the left renal artery. (A-D)

intestinal disease caused by acute aortic dissection and lack of significant signs in the early phases of the disease may lead to delayed accurate diagnosis. Like seen in our case, if any patient presented with hypertensive attack, abdominal and back pain, acute aortic dissection must be kept in mind. With additional signs, such as hemato-caesia, LDH elevation, leukocytosis and abnormal transaminases, one must consider ischemic gut diseases. As a result, intestinal ischemia resulted from acute aortic

dissection has high mortality rates. However, early diagnosis and surgical management before the perfusion defects occur may lead to a decrease in the mortality and morbidity.

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