

Acute Aortic Dissection Presenting with Acute Lower-back Pain Following Sexual Intercourse

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Abstract

Acute aortic dissection, an emergent vascular catastrophe, varies in its clinical presentation and embraces a high mortality rate if not recognized early. Here we report a 32-year-old man who presented to our emergency department (ED) because of lower-back pain shortly before orgasm, and was subsequently found to have retrograde acute type B aortic dissection. This young man was diagnosed and treated promptly in the ED and had no sequelae. We highlight that ED physicians should always include vascular emergencies (i.e. acute aortic dissection) in their differential diagnoses whilst engaging a patient with an acute-onset severe lower-back pain featuring a characteristic upward propagation that emerges following strenuous exercise (i.e. sexual intercourse) in our case. This would appear to be especially so for patients featuring elevated blood pressure regardless of patient's age or history of hypertension. (J Intern Med Taiwan 2008; 19: 418-421)

Key Words : Lower-back pain, Aortic dissection, Sexual intercourse

Introduction

Acute lower-back pain is a common reason for emergency department (ED) visiting. Most patients complaining of acute lower-back pain feature a non-specific etiology typically devoid of apparent life-

threatening concern. Acute aortic dissection, an emergent vascular catastrophe, is the most-commonly missed diagnosis when comparing the clinical and autopsy results for cases presented at an ED¹. The diagnosis of acute aortic dissection is often delayed secondarily to its propensity to masquerade as other ill-

nesses (i.e. renal colic, spinal-cord injury, acute cauda equina syndrome) that result in acute lower-back pain². Sexual intercourse has been reported to induce vertebral artery dissection, coronary artery dissection, and berry-aneurysm rupture³⁻⁵. Nevertheless, on reviewing medical literatures, we found no report regarding sexual activity associated acute retrograde type B aortic dissection. Here we report a young male patient who presented to the ED with sexual intercourse-associated acute lower-back pain that was found to have retrograde propagation of acute type B aortic dissection.

Case Report

A 32-year-old man was brought to our ED because of acute onset lower-back pain developed on the night prior to his visit to the ED. The out-of-proportional LBP had commenced abruptly shortly before orgasm. The pain was "blasting" in character but absence of sharp tearing chest pain or back migrating. His back pain was not relieved by resting. He denied having any trauma history and knowledge of ei-

ther predisposing hypertension or a family history of aortic disease. On arrival, his vital signs were stable, apart from a blood pressure of 179/108 mmHg. On physical examination, we detected no audible heart murmur, no typical characteristics of marfanoid appearance or connective-tissue disease, no deficit in bilateral straight leg-raising testing and no eliciting tender point over the lower-back region. The laboratory findings demonstrated normal urine-analysis and a negative toxicology-screening. Erect chest radiography and supine abdominal radiography revealed no significant abnormality. During the course of ED observation, he complained of a sustained excruciating intractable lower-back pain propagating from the lower-back to the interscapular region. A contrast-enhanced computer tomography of the chest and abdomen revealed a dissecting flap and a long segment of intramural hematoma extending from the abdominal aorta (3-cm above the renal arteries) upward to the aortic isthmus (Figure 1), indicating type B aortic dissection. The aorta showed no evidence of aneurismal dilatation or atherosclerotic change. The

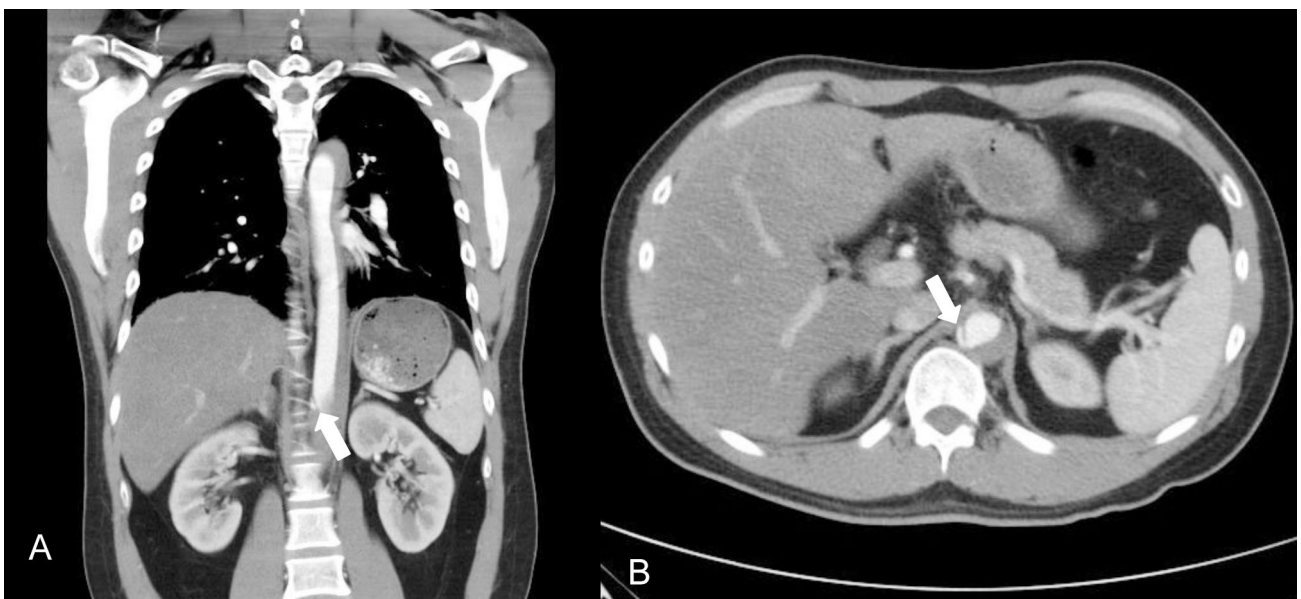


Fig.1. Contrast-enhanced computed tomography of the chest and abdomen

- A : Coronal contrast-enhanced computed tomography depicting a long segment of intramural hematoma extending from the aortic isthmus, consistent with the features of a type-B aortic dissection. The dissection flap located 3-cm above the renal arteries. (Arrow)
- B : Axial contrast-enhanced computed tomography demonstrating the dissection flap. (Arrow)

patient was hospitalized for intensive blood pressure control and discharged on the fifth hospital day. On follow-up at six-month, he was free from lower-back pain and his blood pressure was controlled at around 120/80 mmHg by using a single β -blocker.

Discussion

Here we report a young man who presented to the ED with acute lower-back pain associating with sexual intercourse. It was found to have retrograde propagation of acute type B aortic dissection in the final diagnosis. We suggest that sexual intercourse could have been the trigger for the development of acute aortic dissection, but the detailed underlying mechanism of this response may not be easy to define specifically on this occasion. Most patients suffering from acute aortic dissection are late middle-aged men, usually older than age 60, and feature predisposing factors such as a history of chronic hypertension, congenital heart disease, connective-tissue disease, and/or pregnancy. For the present case, the patient had no evidence of Marfan's syndrome, sarcoidosis, defective collagen metabolism, or vasculitis. However, an apparently healthy individual presenting with acute unexplained out-of-proportional lower-back pain with significantly elevated blood pressure could be the "red-flag signs" of acute aortic dissection. In addition, his upward propagation of lower-back pain from the lower-back to the interscapular space corresponded to the contrast-enhanced computer tomography finding regarding to the retrograde propagation of acute type B aortic dissection.

On reviewing medical literatures, our case constituted the first reported case of sexual intercourse-associated retrograde acute type B aortic dissection. Morris-Stiff et al. had reported a case of 47-year-old man who developed sudden onset of lower-back pain and radiated down the right leg during sexual intercourse⁶. The diagnosis of acute aortic dissection was not made until the patient visited his general practitioner and had a contrast-enhanced computer tomog-

raphy of the abdomen. Their patient sustained radiating pain from the lower back to the right leg, but our patient sustained propagating exacerbating pain from the lower-back upward to the interscapular region. Although 74% of patients with acute aortic dissection presented with classic initial clinical symptoms consisting of the sudden onset of severe tearing chest pain radiating to the interscapular region or lower-back, but there is still 15% of patients indeed presenting with "painless" acute aortic dissection⁷. An unexplained migrating lower-back pain even to the right lower leg or upward to the interscapular region should be highly suspected as a vascular emergency, even in the absence of typical presentations of acute aortic dissection. Sakai et al. reported a 37-year-old man with spontaneous retrograde dissection of the entire thoracic aorta originating from the abdominal aorta⁸. This patient had a history of untreated hypertension with an elevated blood pressure of 190/120 mmHg at presentation without a history of strenuous exercise. It is extremely rare and difficult to manage the spontaneous retrograde thoracic extension of the abdominal aortic dissection⁹. In our case, markedly elevated blood pressure at presentation is another important clue to the ED physician.

Depending upon its intensity, sexual intercourse may provoke physical activity induced lower-back muscle strains. Nevertheless, sexual exertion and sexual arousal are both psychological and physiologic stress. Sexual activities increase physiologic demands on the cardiovascular system including elevated blood pressure and heart rate. In untreated hypertensive subjects, blood pressure could increase up to 55% (peak blood pressure 237/138 mmHg) during coitus¹⁰. The onset of acute aortic dissection has been reported to be related to physical activities (74%) and also emotional stress (13%)¹¹. It would appear that both sexual intercourse related physical and emotional stress could induce strain in certain blood vessels either directly or through aortic spasm, rupture or dissect a minor atherosclerotic plaque, or elevate

the blood pressure transiently which may, in turn, elicit aortic dissection¹².

In conclusion, we highlight that retrograde acute type B aortic dissection should be included in the differential diagnosis of patients presenting with sexual intercourse-associated unexplained acute upward propagating lower-back pain with markedly elevated blood pressure.

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急性主動脈剝離以性交後急性下背痛表現

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摘 要

急性主動脈剝離是一種具有多樣化臨床表徵的急性血管急症。若沒有早期診斷，將造成相當高的死亡率。在此我們報告一名三十二歲男性個案以性交相關的下背痛至本院急診室求診；其下背痛向上延伸至肩胛骨中間，後經由電腦斷層確定診斷為逆行性的急性B型主動脈剝離。此一個案在急診室診斷並給予適當處置後，並沒有產生任何併發症。我們在此強調，應將急性主動脈剝離列入性交相關的血管急症之鑑別診斷，而向上延伸的突發性下背痛可以是逆行性主動脈剝離的表徵；不論病人的年齡高低或是否有高血壓的病史；在這樣的病人身上，異常升高的血壓仍是一個重要的臨床特徵。