

Spontaneous Regression of a Large Iatrogenic Dissection of the Ascending Aorta

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Abstract

A 74-year-old woman was admitted for right coronary angioplasty. During the procedure, she complained about chest pain, and contrast injection showed an iatrogenic dissection of the ascending aorta. A contrast computed tomography (CT) scan confirmed the diagnosis via visualization of a large non-circulating false lumen, which involved nearly the entire ascending aorta. The patient remained hemodynamically stable and asymptomatic while receiving medical therapy alone. Another CT scan performed 3 days later showed complete regression of the false lumen. This case suggests that uncomplicated iatrogenic dissection of the ascending aorta, even when large, may be managed successfully by medical therapy.

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Key Words:

Iatrogenic Dissection • Intramural hematoma • Coronarography • Aortic root • Aorta • Coronary artery

Introduction

The last two decades have seen a growing trend towards more frequent coronary angiography (CA) and percutaneous coronary intervention (PCI). As a consequence, procedure-related complications have been observed more frequently. Iatrogenic aortic dissection (IAD) results from a catheter-induced lesion of the intima, creating bleeding inside the aortic wall. Although the intimal tear is typically very small (leading to non-circulating blood flow in the false lumen),

IAD should be distinguished from intramural hematoma, as the latter is generally due to primary vasa vasorum bleeding that results from a pathologic aortic wall without intimal lesion [1].

Case Presentation

In the present case, a 74-year-old woman was admitted for elective coronary angioplasty in connection with a positive exertion test. Her medical history was only relevant for hypercholesterolemia. After drug-eluted stent implantation in the mid-right coronary artery, the patient complained of chest pain. Direct aortography by contrast injection showed an IAD arising from the right coronary sinus (Figure 1A) and stagnation of the contrast agent in the false lumen (Figure 1B), suggesting that the intimal tear was very small and was probably sealed spontaneously. Thus, no additional stent was implanted. A contrast computed tomography (CT) scan confirmed that an IAD with a non-circulating false lumen involved nearly the entire ascending aorta (Figure 2A). Because the patient remained hemodynamically stable and totally asymptomatic, we initiated medical therapy alone, which was composed of blood pressure control by beta-blockers in combination with calcium channel inhibitors. A control CT was performed 3 days later and showed complete regression of the false lumen of the dissection (Figure 2B) without any related complication. The patient was discharged after 10 days and presented with an uneventful follow-up after 1 year.



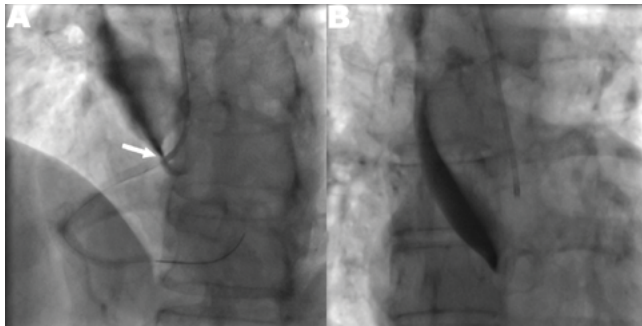


Figure 1. *Panel A.* Origin of the iatrogenic dissection just above the right coronary ostia (arrow). *Panel B.* Stagnation of contrast agent in the false lumen.

Discussion

IADs induced by catheter manipulations are very rare, as procedure-related incidences of 0.006% and 0.1% have been reported for CA and PCI, respectively [2]. In some cases, the intimal tear may originate from

a lesion localized in the ascending aorta or in the aortic arch, but most of the time, the dissection progresses from nearby coronary ostia injuries [3]. IAD of the ascending aorta (Type A) may be life-threatening, requiring surgical replacement of the diseased vessel to avoid pericardial effusion, coronary artery dissection, or acute aortic regurgitation, particularly if the extension reaches more than 40 mm [4, 5]. Occasionally, emergency stent implantation actually seals a minor intimal tear that originated from coronary ostia [5]. Spontaneous regression under medical therapy alone has also been observed in case of limited IAD, probably due to spontaneous sealing and stagnation of blood flow in the false lumen [2, 3].

Conclusion

This case illustrates the successful management of an uncomplicated ascending iatrogenic AD with

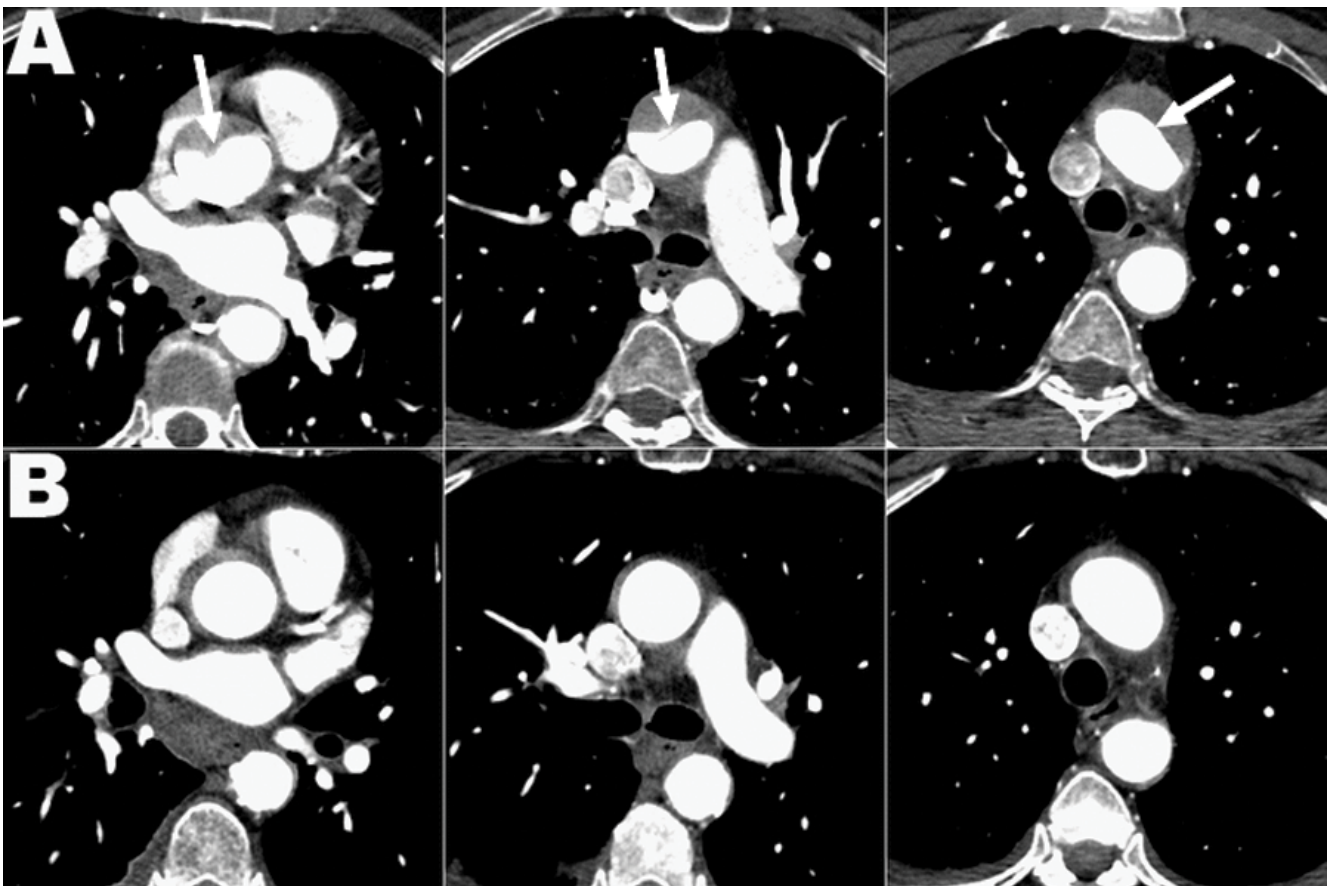


Figure 2. *Panel A.* Initial extension of the dissection with large non-circulating false lumen (arrows). *Panel B.* Spontaneous regression of the false lumen 3 days later.

a minimal intimal tear and a non-circulating false lumen using medical therapy alone.

Conflict of Interest

The authors have no conflict of interest relevant to this publication.

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