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Case Report

Contrast-enhanced magnetic resonance imaging to detect chronic aortic dissection complicated by acute aortitis

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ARTICLE INFO

Article history:

Received 9 December 2016

Received in revised form

16 March 2017

Accepted 25 March 2017

Available online xxx

Keywords:

Chronic aortic dissection

Aortitis

Contrast-enhanced MRI

ABSTRACT

When chronic aortic dissection (CAD) is associated with aortic dilatation, the risk of aortic rupture increases. We report a case of CAD complicated by acute aortitis that was depicted in contrast-enhanced magnetic resonance imaging (MRI). Contrast-enhanced MRI allows early detection of subtle changes in the aortic wall as well as disease activity. Inflammation of aortic wall in the aortic dissection can be at higher risk of the dissected aortic expansion and rupture. When we recognize inflammation of unknown origin with CAD, contrast-enhanced MRI should be performed to rule out CAD complicated by acute aortitis may lead to catastrophic complications.

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Introduction

Chronic aortic dissection (CAD) is followed up to evaluate aortic diameter and false lumen closure status to prevent from any progression of the condition. The prognosis of CAD depends on the presence of a thrombosed false lumen and the level of blood pressure control. It has been also suggested that inflammation in the dissected aortic wall is at higher risk of rupture [1]. We report a case of CAD complicated by acute aortitis diagnosed in contrast-enhanced magnetic resonance imaging (MRI).

Case report

A 41-year-old man presented upper abdominal pain and a fever of 38°C. He had a history of surgeries for Stanford type A acute aortic dissection and had been followed up for residual distal dissections since 10 months before. He was admitted to our hospital with expansion of false lumen in aortic dissection on computed tomography (CT). Contrast-enhanced CT revealed that the maximum short diameter of false lumen expanded from 35 mm in the point of 6 months ago to 45 mm and slightly contrast enhancement in

Acknowledgment: The authors would like to show their greatest appreciation to Toru Sekiya, the president of Nitobe Bunka College, for insightful comments and suggestions.

Competing Interests: The authors have declared that no competing interests exist.

Our institutional review board approved the study, and we obtained written informed consent from the patient.

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<http://dx.doi.org/10.1016/j.radcr.2017.03.024>

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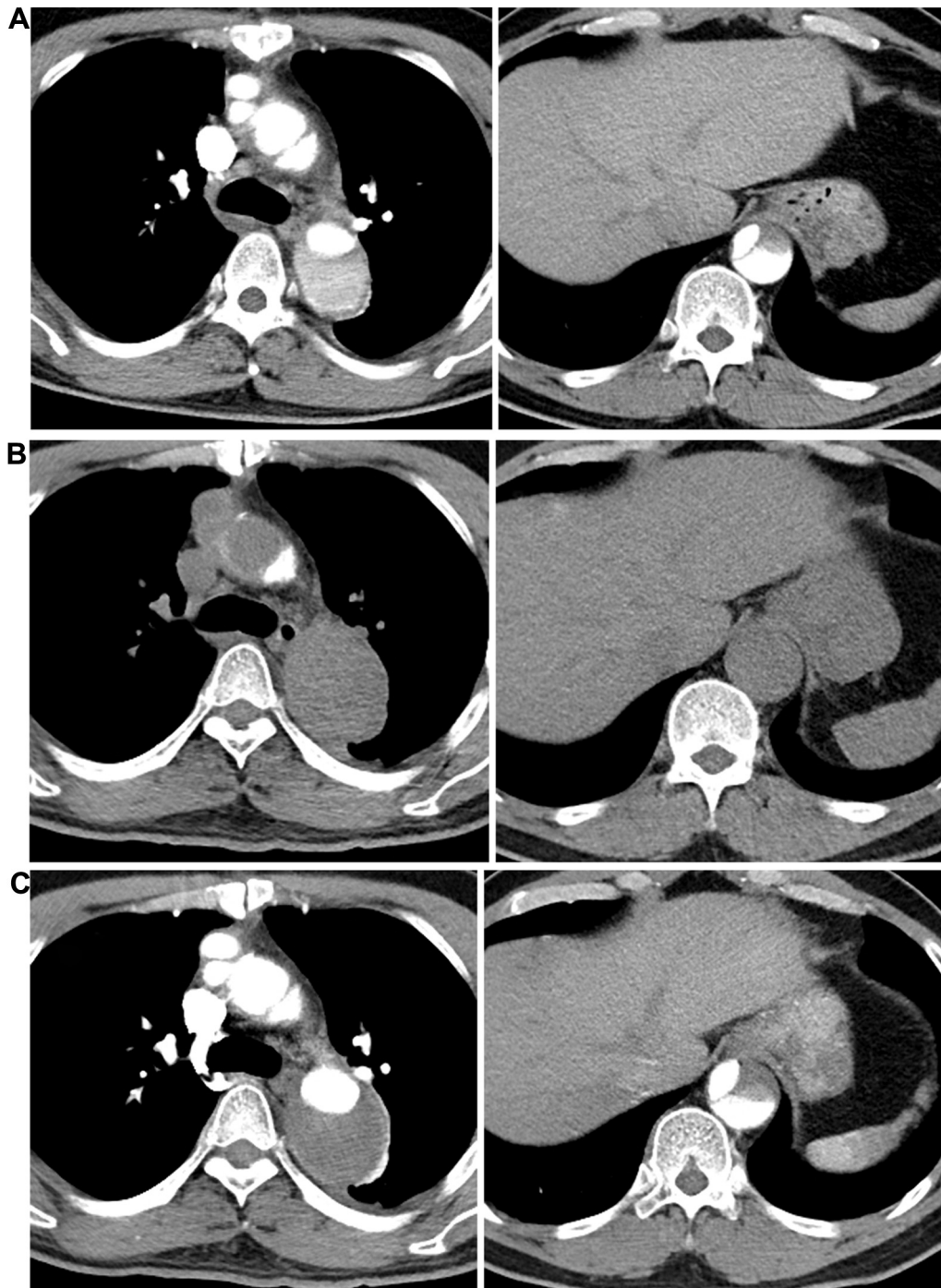


Fig. 1 – Contrast- and non-contrast-enhanced computed tomography (CT; 6 months ago [A], on admission [B], [C]) showed expansion of false lumen in aortic dissection.

a part of the lateral margin of aorta which was not enough clear to refer to as significant lesion on admission (Fig. 1). Laboratory data on admission showed slight elevations in serum levels of C-reactive protein (CRP) to 1.82 mg/dL and fibrinogen to 409 mg/dL. The D-dimer levels also showed elevation to 10.0 $\mu\text{g/mL}$.

On admission, although the need for surgical or endovascular intervention was considered, we had to search for the source of fever and inflammation to prevent serious

postoperative complication before surgical treatment. His upper abdominal pain and fever remained, and CRP levels showed marked elevation to 18.28 mg/dL on the 5th day of admission. Although we suspected infection and performed contrast-enhanced CT on the 15th day and gallium-67 (^{67}Ga) scanning on the 22nd day to search for the source, there was no finding of infection and inflammation (Fig. 2). Contrast-enhanced MRI was performed on the 26th day because CRP levels remained high. Gadolinium-enhanced fat-suppressed

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