Introduction

Rheumatoid arthritis is well known as an important risk factor for heart valve disease, but we experienced a rare case of aortic insufficiency that was detected in the very acute phase.

Case report

A 74-year-old woman with a history of myocardial infarction and severe rheumatoid arthritis on immunosuppressants (5 mg prednisolone, 100 mg mizoribine, and 80 mg tocilizumab) was referred to our hospital because of nausea and tooth pain, but no abnormalities were detected on physical or laboratory examination. Two weeks after the first assessment, she was referred to our hospital again because of tooth pain and dyspnea. Her echocardiogram showed severe aortic regurgitation, which was not detected at the assessment 2 weeks previously. After the patient's congestive heart failure showed improvement, she underwent aortic valve replacement; the aortic valve leaflets were severely shrunken and thickened, without any evidence of endocarditis. Pathological examination of the leaflets showed infiltration of inflammatory cells into the valve leaflets. Therefore, rheumatoid arthritis needs to be considered as an important risk factor for acute valvular disease.

Keywords: Aortic valve insufficiency; heart failure; rheumatoid arthritis; immunosuppressive agents

Abstract: A 74-year-old woman with a history of myocardial infarction and severe rheumatoid arthritis on immunosuppressants was referred to our hospital because of nausea and tooth pain, but no abnormalities were detected on physical or laboratory examination. Two weeks after the first assessment, she was referred to our hospital again because of tooth pain and dyspnea. Her echocardiogram showed severe aortic regurgitation, which was not detected at the assessment 2 weeks previously. After the patient's congestive heart failure showed improvement, she underwent aortic valve replacement; the aortic valve leaflets were severely shrunken and thickened, without any evidence of endocarditis. Pathological examination of the leaflets showed infiltration of inflammatory cells into the valve leaflets. Therefore, rheumatoid arthritis needs to be considered as an important risk factor for acute valvular disease.

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Discussion

Rheumatoid arthritis is known to be one of the causes of heart valve destruction, leading to both valve stenosis and valve insufficiency (3). There are several case reports on aortic insufficiency caused by rheumatoid arthritis (4–6), but in almost all cases, aortic insufficiency progressed chronically, not acutely. In this case, it was difficult to confirm the relationship between rheumatoid arthritis activity and acute aortic insufficiency because three kinds of immunosuppressants were prescribed that might suppress the anti-inflammatory response. The C-reactive protein, white blood cell count, and antinuclear antibody values were normal throughout her hospital stay, and her joint pain was controlled. Therefore, we could not use a clinical scoring system such as the 28-joint disease activity score (DAS28) or health assessment questionnaire (HAQ) to evaluate the severity of the rheumatoid arthritis. However, the thickening and shrunken heart valve was one of the well-known features of this disease and she had no other evidence which induced valve was a well-known feature of this disease, and she had no evidence of other factors that would induce valve malfunction; therefore, we considered this condition to be acute aortic insufficiency induced by rheumatoid arthritis.

With regard to acute aortic insufficiency, Aziz et al. (7) reported a case that showed disease progression within 1 month and Mannaerts et al. (8) reported a case that showed disease progression within 2 years. We report here a rare case in which inflammation of the cardiac valves progressed to the acute phase within just 2 weeks, appearing as valvular shrinkage, which induced acute aortic insufficiency. In general, inflammatory changes occurring in collagen diseases show chronic progression, but not in our case. We need to be aware of the possibility of acute aortic insufficiency caused by rheumatoid arthritis.

Figure 1 Echocardiography showing severe aortic regurgitation.

Figure 2 Echocardiography showing no coaptation among valve leaflets.

Figure 3 Shrunken and thickened aortic valve leaflets.

Figure 4 Pathological specimen of aortic valve leaflet, showing fibrosis and infiltration of segmented neutrophils into the valve leaflets (magnification ×40).
insufficiency induced by rheumatoid arthritis.

**Conclusions**

We report a case of acute aortic insufficiency induced by severe rheumatoid arthritis. We need to recognize rheumatoid arthritis as one of the important risk factors for acute heart valve deterioration.

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**References**


