

Exertional abdominal pain as a symptom of secondary pulmonary hypertension in mitral stenosis

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Abstract

We report a rare presentation of mitral stenosis (MS). MS is a common valvular disease, the first manifestation of which is usually easy fatigability and exertional dyspnea. As the disease progresses in severity, other signs and symptoms appear, such as orthopnea, hemoptysis, and peripheral edema. This is the first report of a case of mitral stenosis presenting with exertional abdominal pain as the first manifestation. This case report describes the clinical characteristics of a 55-year-old woman with mitral stenosis and severe pulmonary hypertension, whose first symptom was exertional abdominal pain.

Key words: Abdominal pain, mitral stenosis, pulmonary hypertension

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Introduction

Mitral stenosis (MS) is a valvular heart disease with various etiologies. The predominant cause of MS in developing countries is rheumatic heart disease. Reduced cardiac output and pulmonary hypertension are the main pathophysiologic mechanisms explaining the signs and symptoms of MS.^[1] Pulmonary hypertension in patients with MS results mainly from passive backward transmission of the elevated left atrial pressure. Pulmonary arteriolar constriction and organic obliterative changes in the pulmonary vascular bed are other contributory mechanisms and are considered to be complications of longstanding and severe MS.^[2] There are several reports of atypical presentation of MS.^[3-7] All of these atypical presentations were related to peripheral arterial emboli or pulmonary hypertension. Our search of Medline and PubMed did not reveal any report of exertional abdominal pain as the first manifestation of MS.

Ethical

Written informed consent was obtained from the patient for publication of this report.

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Case Report

A 55-year-old woman was referred to Isfahan Alzahra Hospital by a general practitioner from a rural region of Chaharmahal state in the central part of Iran. The patient was asymptomatic at rest but complained of abdominal pain on mild exertion. This exertional abdominal pain had started 1 month earlier and had increased in frequency recently. The patient was hospitalized in the surgical emergency ward.

On the initial evaluation, the patient's general condition appeared to be good. She had no history of heart disease. Physical examination findings included: accentuated first and second heart sounds, jugular venous pressure (JVP) 5 cm above the sternal angle, a soft holosystolic murmur at the 5th intercostal space in the midclavicular line but no diastolic murmur. Abdominal examination was normal (no tenderness, no ascites, normal bowel sounds, and no bruit). A 12-lead electrocardiogram showed sinus rhythm, with normal axes and no significant ST and T wave

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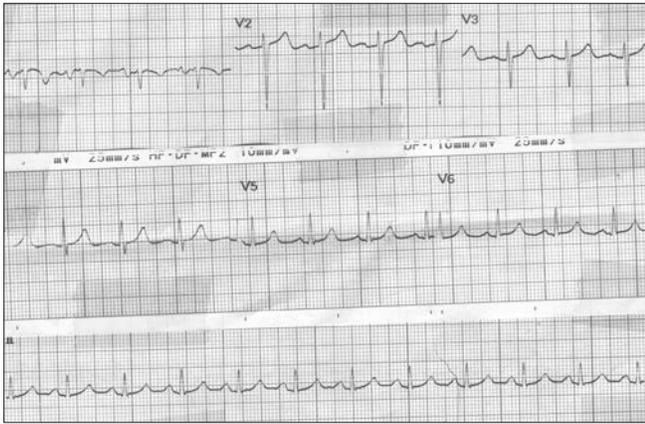


Figure 1: Electrocardiogram of the patient. Biphasic T wave in V1 indicates left atrial enlargement

changes. The P wave in V₁ was biphasic, with a dominantly negative component, indicating left atrial enlargement [Figure 1]. Laboratory investigations, including complete blood count, blood urea nitrogen, serum creatinine, serum alanine aminotransferase, serum aspartate aminotransferase, serum alkaline phosphatase, serum sodium and potassium, and urinalysis, were all within normal limits. To rule out mesenteric ischemia, Doppler sonography of the aorta and mesenteric artery was performed, but no obstruction was detected in these vessels.

As the patient's condition was stable she was transferred to the internal medicine ward. Echocardiography was done, which revealed a sclerotic mitral valve with moderate stenosis and severe pulmonary hypertension. The left atrium, right ventricle, and right atrium were enlarged. The tricuspid gradient was 50 mmHg, and a moderate tricuspid regurgitation was present [Figure 2]. Heparin, warfarin, propranolol, and furosemide were started. After 2 days the patient's abdominal symptoms improved but her exertional dyspnea persisted. She was discharged on a medical regimen which included warfarin (5 mg daily), propranolol (20 mg bid), and hydrochlorothiazide (50 mg daily). Two months later, the patient was still symptomatic, with exertional dyspnea but no abdominal pain. She was therefore referred for mitral valvuloplasty. Ballon valvuloplasty was performed. At the end of the procedure, the tricuspid gradient reduced to 30 mmHg. At the follow-up visit 30 days after valvuloplasty, the patient was completely asymptomatic.

Discussion

The most common symptom of pulmonary hypertension is exertional dyspnea. Other common symptoms are fatigue and angina pectoris (which may represent right ventricular ischemia), syncope, near syncope, and peripheral edema.^[2] This is the first report of exertional abdominal pain being the first manifestation of MS.

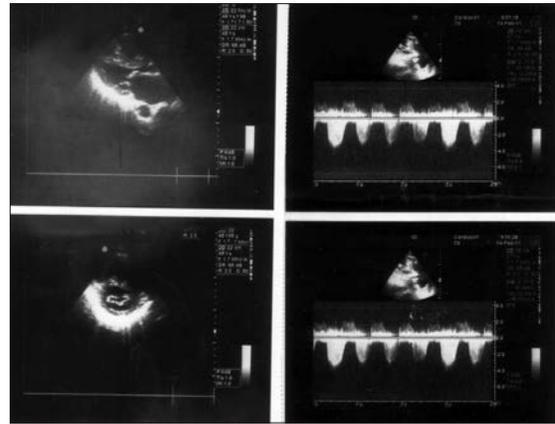


Figure 2: Echocardiogram. B-mode and doppler study reveal moderate MS and moderate pulmonary hypertension

This patient had both mitral stenosis and pulmonary hypertension. As revealed by echocardiography, the pulmonary hypertension was out of proportion to the severity of her MS; so other factors such as pulmonary emboli or reactive arteriolar change in the pulmonary circulation must have contributed to the severity of her pulmonary hypertension. In spite of having moderate MS, the patient was asymptomatic until 1 month before, when the exertional abdominal pain had started. It is probable that small pulmonary emboli might have increased the pulmonary artery pressure to a critical level. Elevation of pulmonary arterial pressure beyond this critical level could potentially induce either right heart ischemia and chest pain or liver congestion and abdominal pain. Thus, during physical exertion, venous return would increase and pulmonary pressure would rise past this critical point and lead to abdominal pain. This is a simple explanation for this patient's symptomatology. Several other more complicated mechanisms may also have been involved.

Conclusion

Although very rare, exertional abdominal pain may be a symptom of secondary pulmonary hypertension.

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