

## PHOTO QUIZ

### What is your diagnosis?

A 37-year-old female with a 15-year history of mitral valve replacement and a 25-year history of aortic valve replacement presented with a gradually worsening dyspnea during the last year. The chest radiograph and CT scan performed in other centers showed cardiomegaly and a mediastinal mass, for which she was referred to our department for a CT-guided transthoracic biopsy of the lesion. A contrast enhanced thoracic CT study was carried out (Fig. 1).

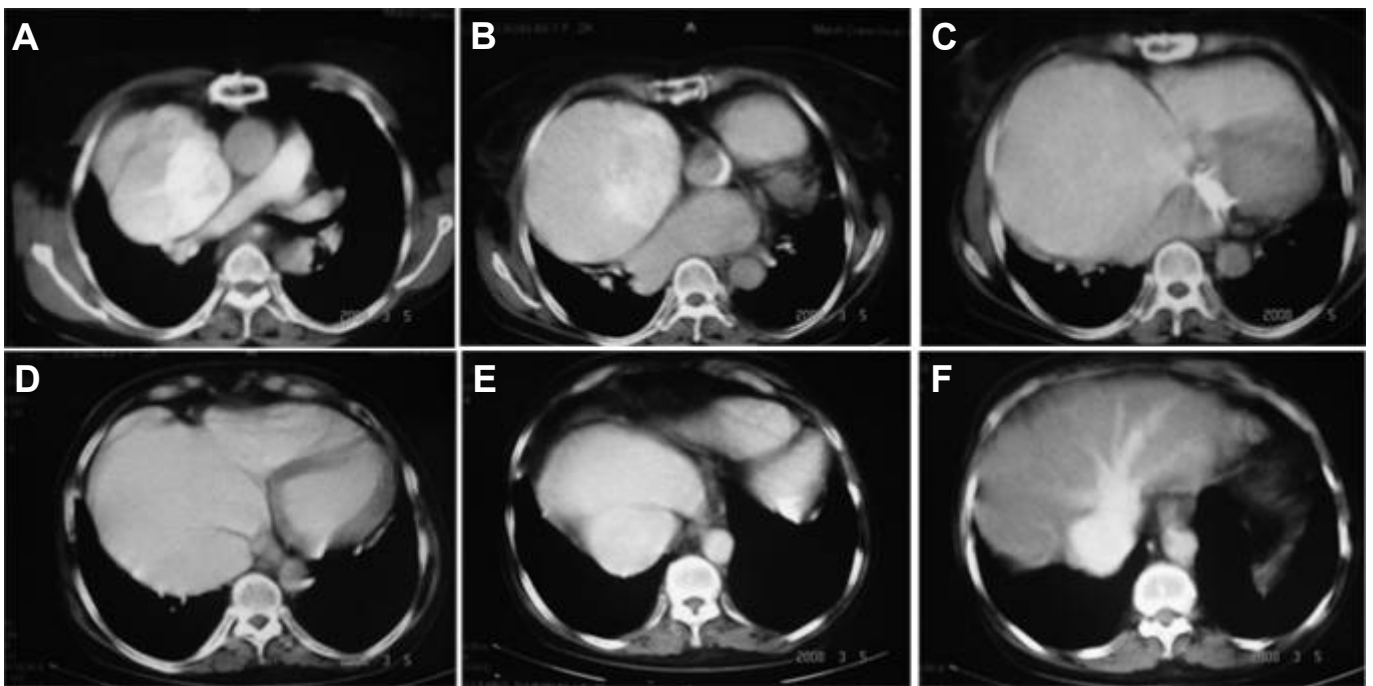


Fig. 1A-F. Contrast enhanced CT examination of the thorax.

What is your diagnosis?

# Diagnosis: Huge dilatation of the Right Atrium

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On contrast-enhanced thoracic CT images, severe dilatation of the superior and inferior vena cavae, suprahepatic veins and the right atrium can be seen. The aortic and mitral valves are prosthetic. Fatty infiltration and liver congestion are seen. The procedure was cancelled and the patient was referred for an echocardiographic study, which showed severe dilatation of the right atrium (more than 10 cm in diameter), severe tricuspid valve regurgitation and stenosis, elevated pulmonary artery pressure, dilatation of the ventricles with severe left ventricular dysfunction and normally functioning prosthetic valves. Cardiac transplantation was considered.

Tricuspid valve (TV) disease or dysfunction is classified as primary (intrinsic) or secondary (functional).<sup>1</sup> The latter is secondary to left heart disease (mitral-aortic valve disease or myocardial dysfunction) that leads to right ventricular hypertension, dilatation and dysfunction.<sup>2</sup>

Congenital anomalies (such as Ebstein's anomaly), rheumatic fever and carcinoid heart disease are among the etiologies of primary TV disease. Rheumatic involvement of the TV is far less common than mitral and aortic valves. In fact, isolated rheumatic TV disease is rare.<sup>2</sup>

Most patients with rheumatic TV disease present with TV regurgitation or a combination of regurgitation and stenosis. Rheumatic involvement of the mitral, and often aortic valves coexist.<sup>3</sup>

Significant TV regurgitation is a well-known late finding in patients with rheumatic mitral valve surgery with increased mortality and morbidity. In the majority of cases, it is functional, due to right ventricular and TV annular dilatation caused by long-standing pulmonary hypertension. Although earlier studies reported reasonable improvement of TV re-

gurgitation after mitral valve treatment, subsequent studies did not confirm them. In fact, persistence of TV regurgitation after surgery contributed to increased mortality and morbidity rates despite adequate correction of the mitral valve.<sup>4</sup>

Uchikawa et al. reported a case of severe TV regurgitation in a 59-year-old man, 15 years after aortic and mitral double valve replacement. There was normal pulmonary artery pressure with no findings of left-side cardiac abnormality. They suspected that the cause of TV regurgitation was not secondary.<sup>5</sup>

In right-sided valve disease, the chest radiograph findings are usually those of pulmonary arterial or venous hypertension. When TV regurgitation is secondary to mitral disease with pulmonary hypertension, pulmonary edema may be surprisingly absent, because of the decreased right-sided cardiac output. Marked cardiomegaly with a prominent right cardiac border and dilatation of the azygos vein and vena cavae may be present, but there is no specific finding to suggest a diagnosis of TV disease.<sup>2,3</sup>

## References

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