A 65-year-old man was admitted with weakness, anorexia, atypical chest pain, swelling of the legs, and sensation of abdominal distension. On physical examination, his blood pressure was 110/70 mmHg, respiratory rate was 22/min, and pulse rate was 65/min. The heart sounds were soft with a 2/6 systolic murmur over the mesocardiac area. The electrocardiogram showed sinus rhythm. There was mild cardiomegaly on the chest X-ray. Complete blood count yielded normal ranges.

Echocardiography revealed a huge, immobile, solid, and lobulated mass occupying nearly the entire right atrium. The mass also invaded the posterolateral wall of the right atrium (Fig. A). On the subcostal view, the right atrial mass was connected continuously to the inferior vena cava (Fig. B). No abnormalities were detected in other cardiac structures. Real-time three-dimensional echocardiography showed a large mass with vascular structures within the boundaries of the right atrium and echolucent regions (Fig. C). The spatial relationship between the mass and adjacent structures could be clearly seen. Contrast-enhanced computed tomography showed a large mass within the right atrium (Fig. D). The mass was thought to be a tumor. The patient underwent cardiac surgery for removal of the tumor. Histopathological examination revealed leiomyosarcoma and postoperative chemotherapy was administered. During the three postoperative months, the patient was free of complaints.

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