A bullet in the heart: an incremental value of three-dimensional echocardiography

Kalp içinde mermi: Üç boyutlu ekokardiyografinin artan değeri

A foreign body in heart can be diagnosed with simple tests such as chest X-ray or more sophisticated diagnostic methods including computed tomography. Nevertheless, echocardiography is a most commonly used method for the diagnosis. Unfortunately, two- dimensional echocardiography (2D-echo) has some important limitations when a structure with high reflective surface presents in the scanning area. Three-dimensional echocardiography (3D-echo) with its inherent advantage of multiple scanning planes may overcome this problem.

A 26 years old male patient applied to our clinic with a complaint of chest pain. He had had gunshot wound fifteen years ago. He reported that a bullet in his chest left untreated because it had been claimed as not life-threatening at that time. Indeed, left lateral chest X-ray film revealed a bullet in the thorax (Fig. 1). Further performed 2D-echo imaging with a Phillips EnVisior machine was unsatisfactory because of acoustic shadowing (Fig. 2). We tried to show the bullet with aid of 3D-echo (Phillips I33, X3-1 matrix array transducer). Full-volume three-dimensional dataset targeting right ventricle was obtained from modified apical view. Cropping of this dataset from apex yielded an image of the bullet localized within myocardium of right ventricular inferolateral wall (Video 1. See corresponding video/movie images at www.anakarder.com). The patient was advised for surgery but he preferred another center for surgical intervention.

3D-echo has been used in clinical practice especially for ventricular volume and mass measurements. However, artifacts such as acoustic shadowing may cause diagnostic problems even in 3D-echo, but out-of-plane image acquisition may aid better localization of object as in our case.

Figure 1. Lateral chest X-ray film showing the bullet

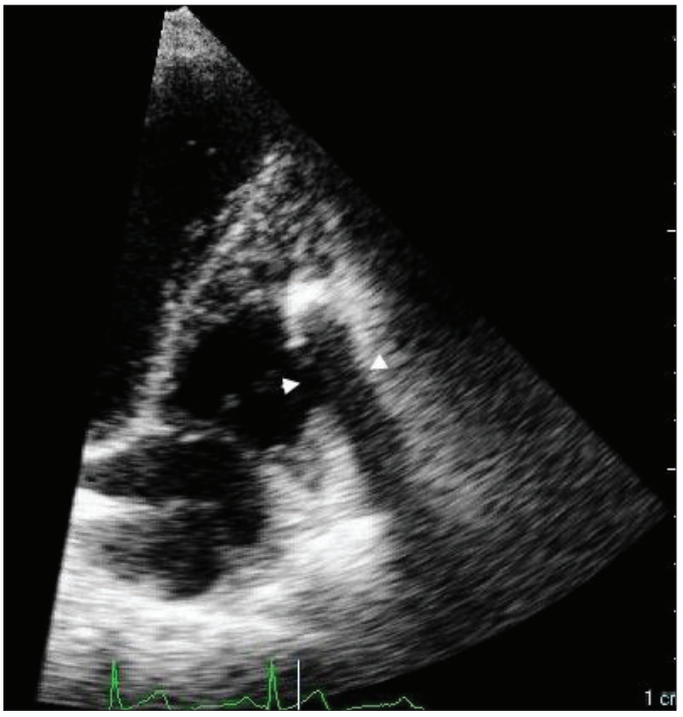

Figure 2. Two-dimensional echocardiographic image with acoustic shadowing (white arrows)

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doi:10.5152/akd.2010.151

Dynamic obstruction of inferior vena cava flow caused by right-sided diaphragmatic elevation

Sağ-taraflı diyafram yükselmesinin neden olduğu vena kava inferiyor akımının dinamik tıkanıklığı

A 74-year-old woman was admitted to our clinic for 3-month history of shortness of breath evolving on exertion. She did not have any cardiovascular risk factors but untreated hypertension. Physical examination and electrocardiogram were normal. The postero-anterior chest X-ray revealed right-sided diaphragmatic elevation (Fig. 1). Subcostal echocardiographic examination showed that the right atrium