

Three Different Imaging Modalities of a Patient with the Aortic Coarctation

Ramin Khameneh Bagheri¹, Leila Bigdelou^{1*}, Mostafa Ahmadi¹

¹ Cardiologist, Atherosclerosis Prevention Research Center, Imam Reza Hospital, School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

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ABSTRACT

The patient was a 19 year-old woman with the diagnosis of resistant hypertension, although she was under treatment of three classes of anti-hypertensive drugs (beta blocker, angiotensin receptor blocker, diuretic) for more than one year. In physical examination there was only a significant difference between the systolic blood pressure of upper and lower extremities (200 vs. 120 mmHg), without any other remarkable finding. Three different imaging modalities (echocardiography (Figure 1), CT angiography (Figure 2), conventional aortography (Figure 3) confirmed the aortic coarctation at 30 mm after left subclavian artery origin, with the 3.5-4 mm diameter of the narrowest segment. She underwent implantation of a self-expanding aortic stent and therefore the systolic pressure gradient decreased from 90 to 15 mmHg. After three months, her blood pressure was stable on 110/80 mmHg, while she received only metoprolol 25 mg twice daily and follow-up echocardiography showed 15-20 mmHg pressure gradient through the stent.

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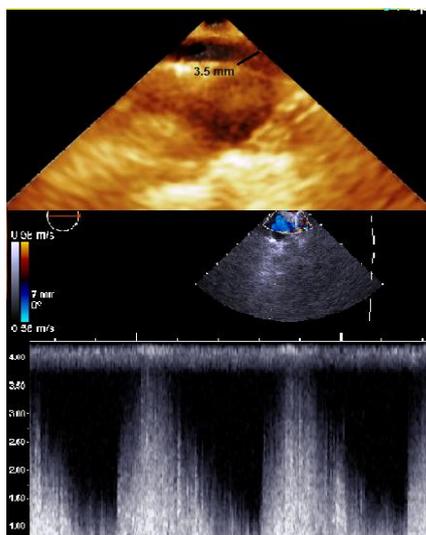


Figure 1. The 3.5 mm aortic coarctation was noted in the upper esophageal view of the three dimensional echocardiography and its Doppler flow image



Figure 2. Aortic CT angiography of aortic coarctation

*Corresponding author: Leila Bigdelou, Atherosclerosis Prevention Research Center, Imam Reza Hospital, School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran. Tel: +985138012739; Email: BigdeluL@mums.ac.ir

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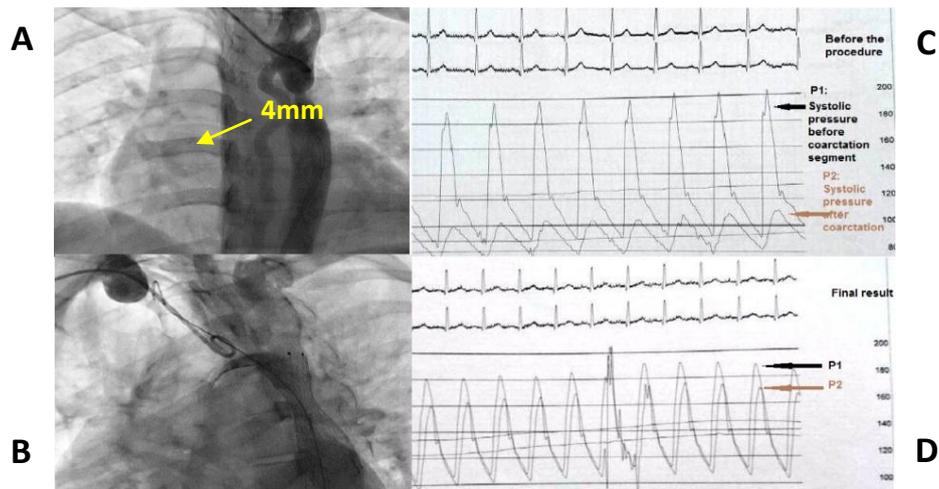


Figure 3. A) The narrowest segment of coarctation was about 4 mm in the aortography. B) Final result of implantation of a self-expanding stent and post-dilation of the stent by using of an 8 mm-diameter balloon-in-balloon (BIB) balloon. C) Before the procedure, the systolic pressure gradient across the aortic coarctation was about 200 mmHg and D) after the procedure it decreased to 15-20 mmHg