

Coarctation of aorta treated with advanta V12 large diameter stent

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Abstract

Coarctation of aorta in adults are generally treated by uncovered stents, and Stent dilatation of the aorta often requires the very narrow unprotected coarcted area to be dilated to a large diameter. These lesions may be tortuous and cystic medial necrosis or calcification may be present, especially in the older pt. All these factors expose the patient to the risk of early or late aneurysm formation or rupture. We report our experience and acute results with a new covered low-profile stent in the treatment of coarctation of aorta.

Keywords: Coarctation.

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INTRODUCTION

It is a balloon expandable laser cut 316L stainless steel stent with a covering made of expanded PTFE. The stent is available in three lengths (29,41,61) and is available premounted on balloon of 12, 14, 16 mm diameters. The stent can be dilated up to a maximum diameter of 22mm and at this diameter the lengths foreshortens by ~ 25%.

CASE SUMMAREY

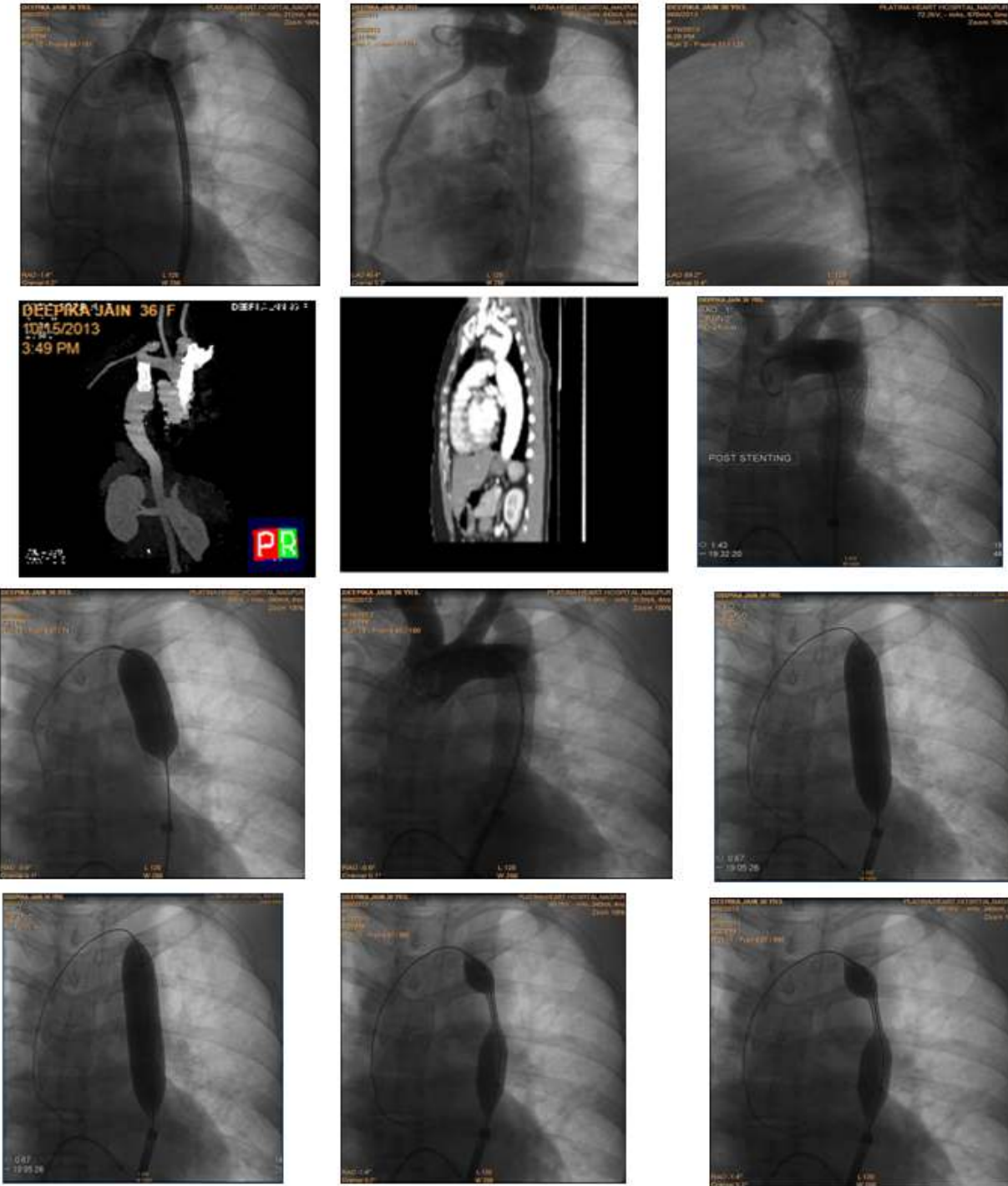
- 36 year old female with Systemic arterial hypertension and discrepant upper and lower extremity pulses and BP (upper limb BP was

50mm hg more than lower limb BP), claudication and easy fatigability. **2D ECHO**

- Coarctation of thoracic aorta
- Peak gr 88mm of hg mean 41mm of hg(underestimated)
- Distance from left subclavian artery 30mm
- Transverse arch 21mm
- Isthamus 7mm
- Desending aorta 37mm
- No associated cardiac lesion

We selected stent of 16mm x 60mm, keeping following things in mind

- Stent should reach from the beginning of the tapering of aorta, through the coarctation and beyond the bell shape of the poststenotic dilatation
- Balloon size 2 to 2.5 times the isthamus
- Initial balloon :coarctation ratio of 2 to 3.5 (should be less than than 4)
- Balloon :transverse arch ratio of .7 to .8
- Distance from left subclavian artery
- Balloon burst pressure



DISCUSSION

Foreshortening of stent dilatation of the aorta often requires the very narrow unprotected coarcted area to be dilated to a large diameter¹⁻⁷. These lesions may be tortuous and cystic medial necrosis or calcification may be present, especially in the older pt.⁷⁻¹¹. All these factors expose the patient to the risk of early or late aneurysm formation or rupture. The advent of PTFE covered stents

provides a transcatheter option to dilate narrowings in vessels in which such dilation carried the risk of dissection or aneurysm formation.¹²⁻¹⁵ The adult descending aorta is often larger than the maximum diameter that can be achieved with many currently available covered stents and, therefore, if used in paediatric population they cannot be adequately dilated in the future to match somatic growth. The covered

Cheatham-Platinum stent is balloon expandable from 8 to 24 mm and, therefore, provides a solution for coarctation of the aorta and its successful use in this setting has been previously reported¹²⁻¹⁴. However, the stent requires a relatively large delivery system (10-16 Fr) and, therefore, its use is limited to larger patients. A recent report described the use of an initial small balloon just sufficient to implant and anchor the CP stent and thereby reduce the size of the delivery system required, followed by serial dilation of implanted stent¹⁵⁻¹⁷. We report our experience and acute results with a new covered low-profile stent in the treatment of coarctation of aorta.

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