



A Case Report on Coarctation of the Aorta

Akhila saila sree T^{*1}, Samyuktha K², Nandini Pandey², Bhargav reddy C²

¹Santhiram College of Pharmacy, Nandyal, Kurnool Dist, Andhra Pradesh, India

²Santhiram Medical College and General Hospital, Nandyal, Kurnool Dist, Andhra Pradesh, India



Article History:

Received on: 08 Feb 2021
Revised on: 15 Feb 2021
Accepted on: 17 Feb 2021

Keywords:

Coarctation of the Aorta,
Congenital Heart
Disease,
Transcatheter Therapy,
Aberrant Aperture

ABSTRACT

Coarctation of the aorta is described as an innate cardiac anomaly comprising the narrow aortic section consisting medial stiffen with a bit in folding of the media and fortuitous neo tissue layer membrane (intimal). Coarctation of the aorta is the 6th most familiar lesion in hereditary/innate heart disease. Here, the localized constriction forms shelf like formation with an aberrant aperture or membranous curtain like formation with a central or aberrant aperture, though in spite of consolation of the anatomical restraint, the succeeding risk of premature morbidity and death keep on. The present study figures the ideal guidance of a disease from neonatal to adult life. It also includes the treatment of coarctation of the aorta by the evolution of transcatheter treatment for either the native and peculiarly repetitive coarctation of the aorta. Late obstacles, even after the proper fortunate treatment, are not common. So, lifelong follow-up is more vital in coarctation of aorta patients.

*Corresponding Author

Name: Akhila saila sree T

Phone: 8008609502

Email: akhilasailasree@gmail.com

eISSN: 2583-0953

DOI: <https://doi.org/10.26452/ijcpms.v1i1.182>



Production and Hosted by

Pharmasprings.com

© 2021 | All rights reserved.

INTRODUCTION

The word coarctation referred as constrict/tighten and is originated from the latin coatare, i.e., to tightening inturn the stemming from co-and arcatare and to repair vigorously. From artus, close, tight-coarctation of aorta (Co A) is a relatively common innate cardiac defect. In Coarctation of the aorta, a portion of the artery constricts, usually in nearer to the ductus arteriosus or the ligamentum arteriosum following the blockage. But the narrow area of the aorta may differ in location and also in the structure, wideness and length. Its incidence ranges from 5 - 8% of all the innate cardiac defects. This state is most frequently diagnosed because of heart

sounds or HTN found on general auscultation. Aortic blockage may be restored by the surgery or by the transcatheter operating procedures, the later it mainly go through the balloon angioplasty and stent installation. In back days, surgery has been widely used, but due to the death rate and extremely obstacles correlated with surgery, catheter operating procedure are exclusively used for the therapeutic outcome [1]. Balloon angioplasty in infants and stents in teens are fetching early choice of treatment for the management of coarctation of the aorta [2]. Classification of coarctation of aorta includes the:

1. Native coarctation of the aorta
2. Recurrent coarctation of the aorta

It also includes preductus, ductus and post ductus coarctation of the aorta. Native coarctation of the aorta defines the detached tapering of the subsiding aorta that ensures from ridge-like stiffen of the media of aortic wall that projects into lumen facing the insertion of the ductus arteriosus. The beginning of the subclavian artery can be intricate with post-stenotic expansion of the aorta commonly encountered.

Recoarctation of the aorta is defined as restenosis succeeding of an inceptive triumphant surgical or

Table 1: Clinical laboratory data

Tests	Test Value
Hb	15.2g/dl
WBC Count	7800num/ μ l
Neutrophils	57%
Eosinophils	3%
Lymphocytes	33%
Platelets count	2.92lakh/cumm
Serum uric acid	6mg/dl
Serum creatinine	1.04mg/dl
Serum urea	26mg/dl

catheter deploys restoration and is thought to be peripheral to both a residual blockage or evolution of restenosis. This prevalence of recoarctation following the surgery is around 10%and happens independently of the type of surgical restoration used [3]. It is seen mostly in the children because of insufficient aortic wall development at the place of restoration as surgery was carried out prior to the aorta has stretch out to adult size [4].

Case Report

A male patient of 20years old was admitted in the cardiology department with the chief complaints of chest pain, SOB since 5 days. His lab values are given above in the Table 1. ECG report and Radiology report of the patient were attached below in Figure 1 and Figure 2 respectively. The physician suggested the balloon angioplasty with stent to the patient. On examination BP was found to be 220/100 mm Hg, Pulse rate was 80bpm on first day. On second day BP was found to be 160/70 mm Hg, PR-85bpm.On third day BP-130/70 PR-72bpm, RR-24cpm are to be found. The physician prescribed the medications like T.Nicardia retard-10mg twice a day, T.Prolomet XL-25mg once a day, T.Telvas-40 mg once a day, T.Embeta XR-50mg once a day, T.Soloposr 0.5mg once a day. Clinical laboratory values are given above as in the Table 1.

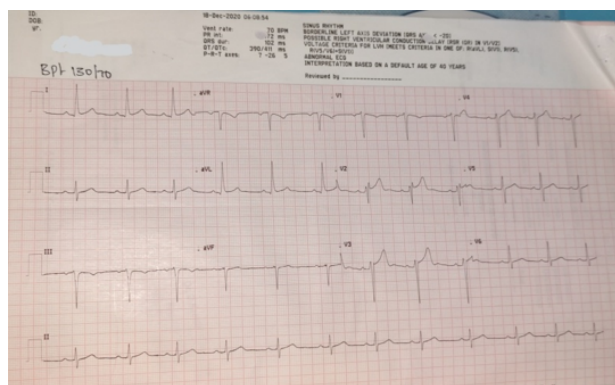


Figure 1: ECG Report

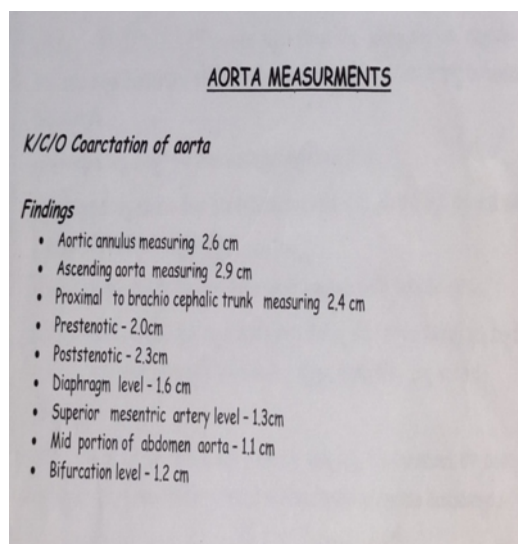


Figure 2: Radiology Report

DISCUSSION

Coarctation of the aorta is tapering of the aorta, repeatedly occurred at the left side of subclavian artery, it also occurs at different regions of aortic arch or even at the thoracic aorta or abdominal aorta. The tapering of the aorta results an abnormal increase in the blood pressure, then it causes above extremity high blood pressure. Un-functional coarctation gives on to early CAD (coronary artery disease), LV dysfunction, thoracic aneurysm. Transcatheter treatment of Co A set off more familiar with the evolution of balloon angioplasty by Lock et al. in 1983. An unrestricted consolation of stenosis by balloon angioplasty is expertise by the destruction to the aortic inner membrane layer and media [5]. The considerable stumbling blocks are flinch of the vessel with relapse of stenosis was noticed after balloon angioplasty and vessel injury with resultant vessel dismemberment or aneurysm structure was noticed. Stent replacement became the primary choice of management for children and

adults having native Co A and it was firstly represented by O' Laughlin in the year 1993 [6]. The main agenda of using foil stents was to keep away the dissection, imprudent distension and elastic flinch of aorta. It also sequel in decrease vessel injury than balloon angioplasty [7]. The symptoms of coarctation of aorta patients were the high or low blood pressure, enlargement of heart or murmurs, cyanosis from insufficient blood flow, declined pulses, non fulfillment to flourish, SOB. Obstacles of Co A are monotonous Co A, thoracic aneurysm, HTN, Cerebral aneurysm, heart myopathy, hemiplegia, Post coarctectomy syndrome. In this case, there are abnormalities of aorta measurements were found so balloon angioplasty with stent was advised to the patient for better outcome.

CONCLUSION

Coarctation of aorta is a long-lasting disease which sequel the whole pre-coarctation arterial base. Very close & regular monitoring and hostile regulation of obstacles is pivotal. Among the modern progress in stent technology, one is the evolution of biodegradable stents that offers a remedy or way out for endovascular treatment for newborn and infant coarctations. Stent replacement retains the coarcted aortic portion unlock and terminate over a span of months. The framework may fabricate in most of the patients and creates a significant re-narrowing. Clinical trials are even now to manifest the practicality and effectiveness of this mechanization. But this study indicates the benefit of balloon angioplasty in the resolution of coarctation of the aorta and also re-coarctation with the minimal morbidity. Although an observational long term assessment for hypertension and further complications are compulsory in the patients.

Funding Support

The authors declare that they have no funding support for this study.

Conflict of Interest

The authors declare that there is no conflict of interest.

Informed Consent

We have obtained the informed consent form from the patient to publish the case report.

REFERENCES

- [1] Jeffrey R. Boris. Primary-care management of patients with coarctation of the aorta. *Cardiology in the Young*, 26(8):1537–1542, 2016.
- [2] H Mottaghi Moghadam, B Alizadeh, and N Hazrati. Immediate and Short-term Follow-Up of Aortic Coarctation Balloon Angioplasty and Stenting. *International Journal of Pediatrics*, (12):6771–6777, 2017.
- [3] Hussam Suradi and Ziyad M. Hijazi. Current management of coarctation of the aorta. *Global Cardiology Science and Practice*, 2015(4):44, 2015.
- [4] Erik Beckmann and Arminder S. Jassar. Coarctation repair—redo challenges in the adults: what to do? *Journal of Visualized Surgery*, 4:76, 2018.
- [5] Marc G Cribbs. Coarctation: A Review. *US Cardiology Review*, 13(2):99–104, 2020.
- [6] V Grech. Diagnostic and surgical trends, and epidemiology of coarctation of the aorta in a population-based study. *International Journal of Cardiology*, 68(2):197–202, 1999.
- [7] Jeroen Koerselman, Hienke de Vries, Wybren Jaarsma, Luc Muyldermans, Jef M.P.G. Ernst, and Herbert W.M. Plokker. Balloon angioplasty of coarctation of the aorta: A safe alternative for surgery in adults: Immediate and mid-term results. *Catheterization and Cardiovascular Interventions*, 50(1):28–33, 2000.

Copyright: This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

Cite this article: Akhila saila sree T, Samyuktha K, Nandini Pandey, Bhargav reddy C. A Case Report on Coarctation of the Aorta. Int. J. of Clin. Pharm. Med. Sci. 2021; 1(1): 14-16.



© 2021 Pharma Springs Publication.