

Aortic annular measurements in fresh post-mortem hearts: a study in Sri Lankans

S Udhayakumar¹, S G Yasawardene²

(Index words: basal aortic annular diameter, basal aortic root circumference, demographic data, fresh post mortem)

Abstract

The basal aortic root measurements were determined in 320 fresh, autopsied, normal, adult, Sri Lankan hearts collected from the Judicial Medical Office, National Hospital of Sri Lanka. The correlation between the measurements and demographic data of the individual was calculated. The mean aortic root circumference at the basal ring was 64.7 mm \pm 7SD (males 66.0mm \pm 6.4SD, females 58.0mm \pm 6.1SD) and calculated aortic annular diameter was 20.60mm \pm 2.2SD (males 21.02mm \pm 2.0SD, females 18.47mm \pm 1.9SD). Mean circumference showed significant gender difference. Significant positive correlation was seen between the age and aortic root circumference. We describe the normal range of aortic root diameters in healthy adult autopsied Sri Lankans. The values are smaller in Sri Lankans compared to Caucasians.

Ceylon Medical Journal 2015; **60**: 148-151

Introduction

The aortic root is located between the left ventricular outflow tract and the tubular portion of the aorta, and comprises three cusps, three sinuses of Valsalva and fibrous intervalvular triangles. Aortic fibrous annulus is in the form of three scallops, extending throughout the length of the aortic root, to which the aortic semilunar valve cusps are attached. The line joining the basal attachment points of the leaflet identifies the basal ring and the highest points of attachment of leaflets denotes the sinotubular junction [1, 3]. The third ring just above basal ring represents the anatomic ventriculoarterial junction, where the ventricular myocardium changes into the aortic wall architecture (Figure 1) [1]. The echocar-diographic aortic annular measurements are taken at the basal ring [1]. Therefore the present study focused the level of basal ring.

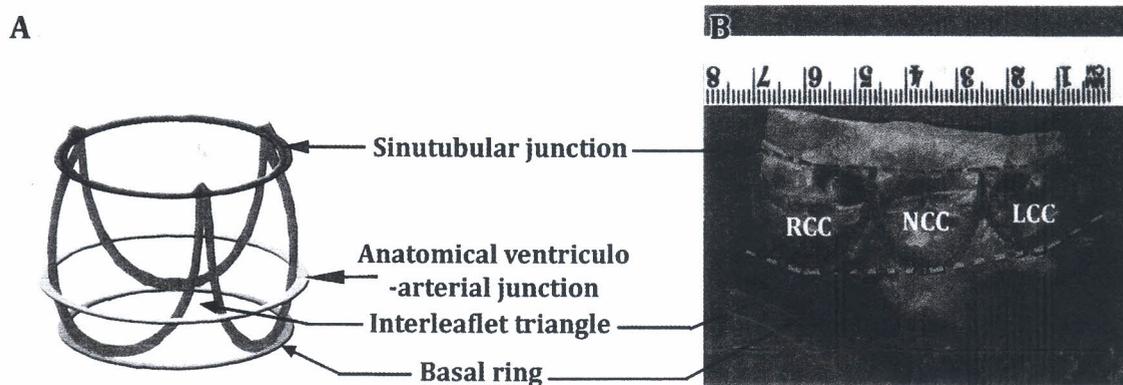


Figure 1. Aortic root showing its components

A. Schematic three dimensional diagram of the aortic root, which contains three circular rings and a scalloped ring to which the leaflets are suspended.

B. Opened aortic root at autopsy showing its components.

(RCC-right coronary cusp, LCC - left coronary cusp, NCC- non-coronary cusp)

¹Department of Anatomy, Faculty of Medicine, University of Jaffna and ²Department of Anatomy, Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka.

Correspondence: SU, e-mail: <sivananthini01@gmail.com>. Received 29 June and revised version accepted 25 July 2015.



This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.