



CASE REPORT

HYPERTROPHIED RIGHT ATRIUM IN A CADAVER

KARLE G S¹, HUMNE S R², DESHPANDE A M³, SANGODE N P⁴

¹Assistant professor, ^{2,3,4} PG Scholar, Department of Rachana Sharir, CSMSS Ayurved College, Aurangabad, Maharashtra (India)

Corresponding author email address: geetanjali.anat@gmail.com

Access this article online: www.jahm.in

Published by Atreya Ayurveda Publications, Ilkal-587125 (India) All rights reserved.

Received on: 27/12/2013, Revised on: 31/12/2013, Accepted on: 03/01/2014

Summary

We present a case of the right atrial hypertrophy with shifting of left ventricle in cadaver of a 55-year-old Indian man during routine dissection. In this case, Right Atrial hypertrophy was seen. Tricuspid septal cusp is shifted to apex of right ventricle. Right ventricle was elongated and tubular. Left ventricle was shifted to form the posterior of heart, shifted apex was formed by Right ventricle, constricted left pulmonary veins, changed position of coronary arteries etc.

Keywords: Hypertrophied right atrium, pulmonary veins, anatomy.

Introduction:

Human heart is a hollow muscular organ that pumps blood throughout the blood vessels to various parts of the body by repeated and rhythmic contractions. It has two ventricles and two atria, right and left. Normally, the sternocostal surface or anterior surface is formed by Right ventricle, Right atrium, Left ventricle. The diaphragmatic surface is formed by both ventricles and the base of heart or posterior surface is formed by the atria, mainly the left one. Apex of heart is formed by tip of the left ventricle. The right border is formed by right atrium. The horizontal inferior border is formed mainly by the right ventricle and slightly by the left ventricle near the apex. The left border is formed by the left ventricle and the superior border is formed by both the atria.¹ Here in this case we present right atrial hypertrophy, shifted septal tricuspid cusp,

surfaces of heart formed by different chambers, shifting of apex etc.

Methodology:

During a routine dissection at the Department of Anatomy at the CSMSS Ayurved Mahavidyalaya, Aurangabad, a rare anatomical variation in the heart was observed. The cadaver donated to the Department of Anatomy, was that of a 55-year-old Indian man. After dissection of anterior wall of thorax the ribs were cut by rib cutter, scalpel etc. from mid axillary line.² A hypertrophied right lung with pleura was seen. After reflection of anterior border of right lung Hypertrophied heart with pericardium was found.

Following fixation and gross examination, measurements were taken. Incision on pericardium and heart was taken and the origin of vessels, position and structure of valves was studied.

Observations:

Right lung was highly expanded from its anterior border extending across the midline.

Left lung was shrunken, appeared as a membranous structure and was behind hypertrophied heart.

Observation about heart-**External structure**

Measurements- Height- 13.5 cm
Width (right to left) -
in upper part 8 cm

in lower part 8.5 cm

Location- behind anterior border of right lung and pleura, to the left side from the midline.

Apex- directed downwards in fifth intercostals space up to mid axillary line, formed by Right ventricle.

Base- formed by Left atrium and some part of left ventricle and right atrium.

Surfaces-

Anterior surface- formed by right atrium, right auricle, right ventricle and small part of left auricle. On this surface Right ventricle is seen as vertically elongated, tubular structure.

Posterior surface- left atrium, left ventricle and right atrium.

Four pulmonary veins present. Among them two left sided are normally placed but are constricted whereas two right sided are dilated and are antero-posterior to each other.

Right lateral surface- Right atrium.

Left lateral surface- Left ventricle, left auricle.

Coronary arteries- Right coronary artery present in right atrioventricular groove which is placed on anterior surface of heart. Left coronary artery is

present in left atrioventricular groove on left lateral surface of heart.

Borders-

Left-Right ventricle and some part of left ventricle.

Antero-inferior- right atrium and right ventricle. Notch is present.

Superior-covered by vessels.

Right Atrium External features-

Measurements- 10x5x7.5 cm.

Right atrium forms the anterior, right lateral and some part of posterior surface of the heart. Sulcus Terminalis was seen. Highly hypertrophied.

Internal structure-

Right Atrium-big chamber having crista terminalis, muscle pectinate, fossa ovalis on inter atrial septum. Inter atrial septum is present to posterior side of this chamber. Opening of tricuspid valve is present on left wall of this chamber; its septal cusp is shifted to apex of right ventricle.

Right Ventricle- rough inflowing part having tricuspid valve apparatus present to the right side of this chamber and its septal cusp is shifted to apex of right ventricle. Out flowing smooth part is superiorly to this chamber.

Left ventricle-Inflowing rough part with bicuspid valve apparatus is present posterosuperiorly to this chamber. Out flowing part present superiorly and to the right side of this chamber.

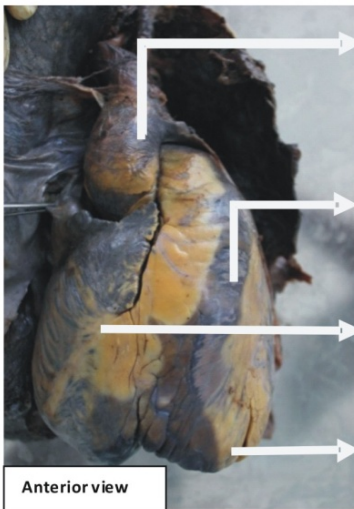
Left atrium- located posteriorly. Small part to the right side, four pulmonary veins opening are present on posterior wall. Two right sided are wide and anteroposterior to each other whereas two left sided pulmonary vein openings are constricted and normally placed.



Hypertrophied Right lung



Heart with pericardium



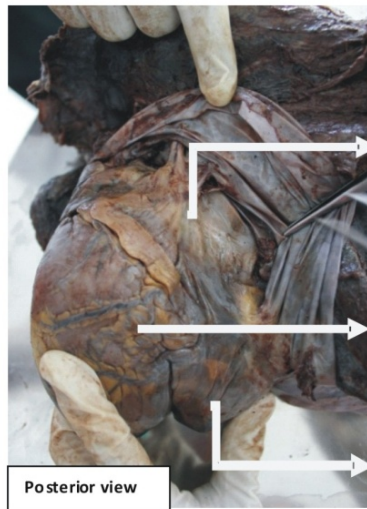
Aorta

Right ventricle

Right atrium

Apex of heart

Anterior view

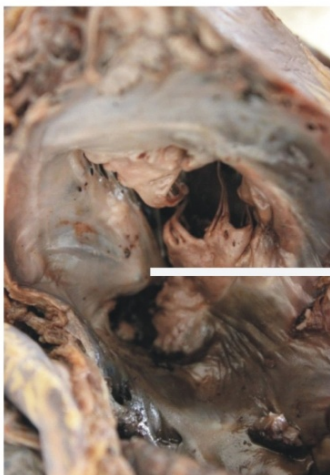


Left atrium

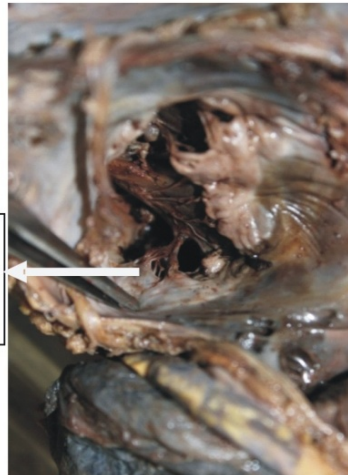
Left ventricle

Right atrium

Posterior view



Tricuspid valve-
shifted septal
cusp



Conclusion:

Right Atrium hypertrophy may be due to incomplete closure of tricuspid valve caused by shifted septal cusp to apex of Right Ventricle.

Two constricted left pulmonary veins, two dilated Right Pulmonary veins due to compensatory hypertrophy of right lung caused by shrinking of left lung.

References:

1. B.D. Chaurasia .Human Anatomy. 5th edition volume 1st. p.243-245.
2. G.J. Romanes. Cunningham's Manual of practical anatomy. 15th edition, Volume- 2. p.12-54.

Cite this article as: Karle G S, Humne S R, Deshpande A M, Sangode N P. Hypertrophied Right Atrium In A Cadaver. Journal of Ayurveda and Holistic Medicine; 2013;1(9): 29-32.

Source of support: Nil, Conflict of interest: None Declared.