ISSN: 0975-833X

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

Vol.6, Issue 09, September - 2014

Impact Factor: SJIF : 3.845
Indexing: Thomson Reuters: ENDNOTE

Available online at http://www.journalcra.com

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

International Journal of Current Research
Vol. 6, Issue, 09, pp.8765-8767, September, 2014

ISSN: 0975-833X

CASE REPORT

AN UNUSUAL REPORT OF SINUOUS TWISTED DESCENDING AORTA WITH

Shilpa Naik, *Sangeeta, M., Varalakshmi, K. L. and Jyothi N. Nayak

Department of Anatomy, MVJ Medical College and Research Hospital, Hoskote, Bangalore, India

ARTICLE INFO

Article History:
Received 05th June, 2014
Received in revised form
05th July, 2014
Accepted 07th August, 2014
Published online 30th September, 2014

Key words:
Aorta,
Sinuous,
Aneurysm.

ABSTRACT

Variations in the shape of aorta are very rare. These variations could be clinically significant and potentially fatal. Here we report a case of grooved ascending aorta with sinuous descending aorta associated with aneurysm formation and its clinical implications.

INTRODUCTION

Aorta distributes oxygenated blood from the left ventricle to the body. It is divided into ascending aorta, arch of aorta and descending aorta. Ascending aorta is 5 cm long and 3cm in diameter and presents convexity to the right. At the upper border of right second costal cartilage ascending aorta continues as arch of aorta which extends up to left second costal cartilage. At the level of left second costal cartilage it continues as descending thoracic aorta till the lower border of L4.Sinuous or twisted aortic arch has been described in the past. Sinuous appearance of a short segment of abdominal aorta has also been described in the past. In this case we report a case of grooved ascending aorta with sinuous and twisted descending aorta with a dissecting aneurysm.

Case report

During routine dissection of a 50 year old embalmed male cadaver in department of Anatomy of MVJ Medical College and Research Hospital, we observed a dilated and twisted ascending aorta with unusual grooves involving the full thickness of wall of it. Ascending aorta extended from the base of the left ventricle upwards and to the right for two inches. The arch of aorta passed upwards backwards and to the right arching around the trachea and oesophagus. The arch of aorta was also dilated and showed four branches. One of which being right vertebral artery, rest three being normal.

Corresponding author: Sangeeta, M.
Department of Anatomy, MVJ Medical College and Research Hospital, Hoskote, Bangalore, India.

The descending aorta was dilated with a sinuous tortuous course and showed a convexity to the right at the level of T8 and to the left at the level of T10 and to the right again at the level of L1. On opening the abdominal aorta a thrombus measuring 3cm long and 0.3cm wide was seen occupying the lumen of aorta at the level of T8.Below this level the aorta showed two lumens (dissecting aneurysm) extending till the origin of renal artery. Renal artery arising from abdominal aorta was also tortuous. The abdominal aorta divided at the level of lower border of L4 into two common iliac artery which were also dilated and tortuous .Branches of the anterior divisions of internal iliac artery were seen arising from a common point (1cm below the level of origin of anterior division). Of all the branches of anterior division of internal iliac artery, internal pudendal artery and obturator artery were seen to be tortuous. The ascending aorta was opened to look for the aortic sinuses of Valsalva which were found to be normal. Heart showed left ventricular hypertrophy and atherosclerotic plaques were seen in the ascending and descending aorta. The lungs were found to be normal. There was no evidence of visceromegaly in the cadaver except the heart which was enlarged.

RESULTS AND DISCUSSION

Variations in the shape of aorta have been described by previous authors. A case of twisted descending aorta similar to ours was reported by John L Annan (1910), but in his case the ascending aorta was normal with no evidence of aneurysm in any part of the aorta. Solak *et al.* (2009) have reported a case of uncontrolled hypertension in a 46 year old lady. Doppler ultrasound of kidney revealed the normal renal artery and

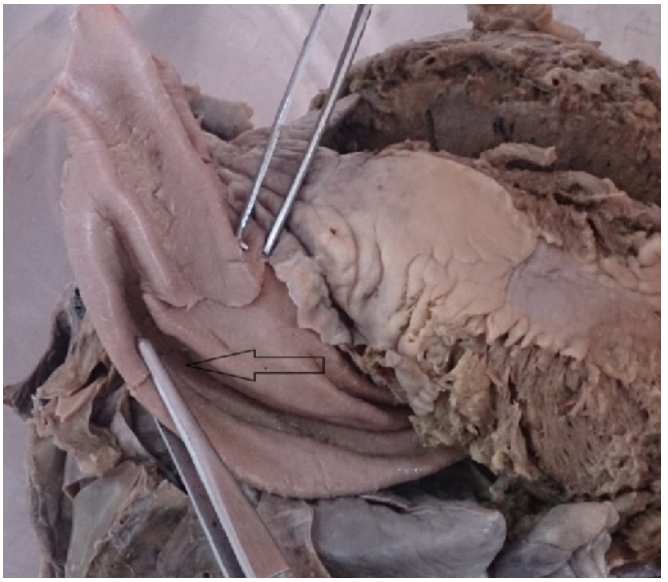

Figure 1. Ascending Aorta Showing Unusual Grooves

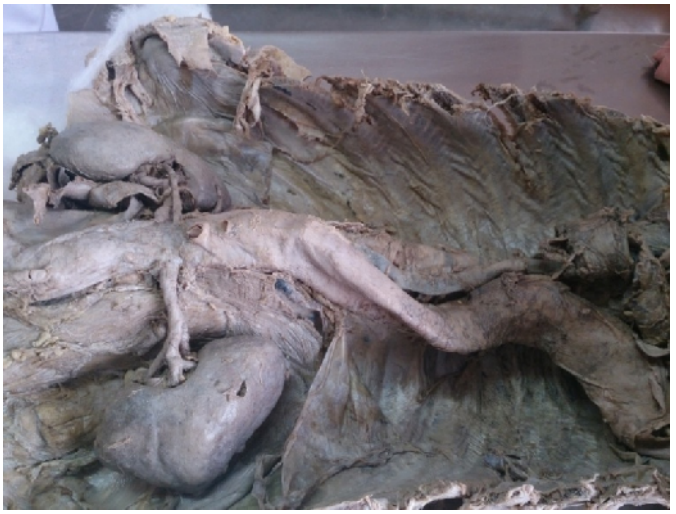

Figure 2. Abdominal Aorta Showing Sinuous and Twisted Appearence

Figure 3. Thrombus Seen after Opening the Descending Aorta at the Level of T8

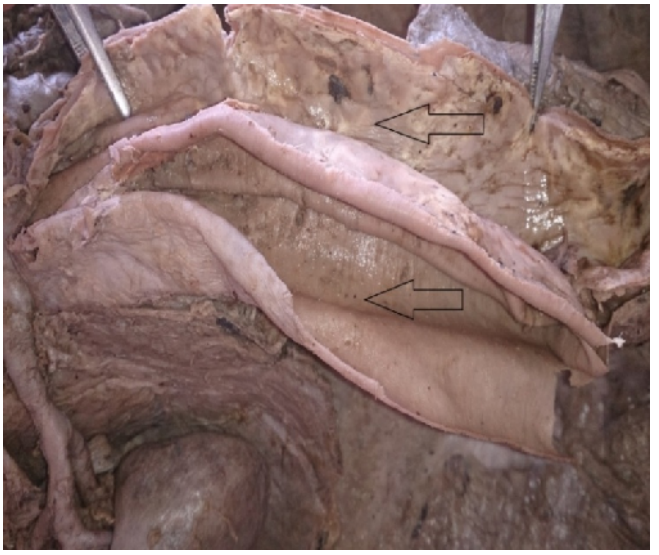

Figure 4. Dissecting Aneurysm Seen Below the Thrombus (Note the Two Lumens)

Figure 5. Dissecting Aneurysm Ending at the Level of Renal Arteries Single Lumen Below the Level of Renal Artery Seen

kinking of abdominal aorta in the infra renal part. Souders *et al.* (1958) were the first to appreciate the entity of congenital kinking of aortic arch without coarctation. At thoracotomy a sharply kinked aortic arch was found. The apex of the kink was at the insertion of short, taut patent ductus arteriosus (PDA) The radiological appearance of kinked aortic arch mimics that of coarctation of arch. It has been suggested that kinked aorta is an incomplete form of coarctation in which the obliteration of aortic lumen is entirely absent or minimum. To justify the diagnosis of kinked aortic arch there should be no aortic narrowing. Kinked aortic arch is usually congenital associated with taut ligamentum arteriosum. Franklin *et al*. (1966) also reported a case of buckling of aortic arch at the level of ligamentum arteriosum. This patient was followed for 12 years during which time an aneurism develop at the sight of kinking which was subsequently repaired. Kinking of the descending aorta above the origin of renal artery has been reported by Satish Nayak (2008). This was associated with presence of accessory renal artery.

Axial twisting of abdominal aorta with musculoskeletal motion has been reported by Gilwoochoi (2009). We observed a dissecting aneurysm at the level of T8 in the Descending aorta. The reported rate of primary abdominal aortic dissection is less than 2% compared with that of ascending aortic dissection, frequencies being, ascending aorta (70%), descending aortic dissection (20%) and aortic arch dissection (7%). In case of Abdominal Aortic Aneurysm (AAA) dissection flap generally originates below or at the level of renal arteries. Less often the intimal tear is suprarenal as observed in our case. Clinically, Abdominal Aortic Aneurysm presents as back pain, peripheral ischemia, abdominal pain, distal embolisation and pulsatile abdominal mass. Therapeutic options of Abdominal Aortic Aneurysm include prosthetic replacement of involved segment of aorta or intra vascular ultrasound guided stent grafting Gilwoochi (2009). The pathogenesis of Abdominal Aortic Aneurysm has been frequently associated with atherosclerosis as may have been in our case as evidenced by athermatous plaques. .Hypertension is also considered to be a predisposing factor to Abdominal Aortic Aneurysm. This case could be a case of chronic hypertension as implicated by left ventricular hypertrophy and presence of atheromatous plaques. The most common location of Abdominal aortic aneurysm is at the bifurcation of abdominal aorta into two common iliac arteries (Yalcun Solak *et al.,* 2009). In our case however it was observed at the level of T8.

Conclusion

To conclude ,variation in the course and shape of aorta should not be overlooked as it could be a potential threat to the patient in the form of sudden cardiac arrest due to rupture of underlying aneurysm. This combined entity of sinuous descending aorta with aneurysm along with a grooved ascending aorta has not been reported in literature so far making this case report worthwhile mentioning**.**

REFERENCES

Franklin Turne, Byron, Swenson M. D. *et al*. 1966. Kinking or buckling of the aorta, case report with complication with aneurysm formation. *Am J of Radiol*., 97(2):411-415.

Gilwoochi, Gayongsuh, Lewis K Shin, Charles A Taylor *et al*. 2009. Abdominal aortic deformation due to musculoskeletal motion. *J Endovase Ther*., 16(5): 531-538

John L Annan. 1910. Case of abnormal sinuous aorta. *J.Anat Physio*., 44(3): 241-243 7.

Raul Borioni, Maniano Garofalo, Ruggero D, Paulis *et al*. 2005. Abdominal aortic dissection anatomical and clinical features and therapeutic options. *Tex Heart Inst J*., 32(1):70-73.

Satish Nayak. 2007. Presence of accessory renal artery and kinking of aorta due to abnormal origin of renal arteries. *Internet journal of biological anthropology*., 1(2)

Souders CR, Pearson CM. 1958. Buckling of aortic arch (pseudocoarctation, kinking); a roentgenographic entity. *Radiology*., 70(1) :67-73.

Yalcun Solak, Huseyin Atalay, Kultigin Tuehmen *et al*. 2009. An incidental finding while investigating secondary hypertension, severe abdominal aortic coarctation. *Clinical Kidney Journal*., 2(4):328

****

OPEN ACCESS

ISSN-0975-833X

Directory of Research Journals Indexing

Google scholar

YAHOO! INDIA www.yahoo.in

OCLC WorldCat

Scribd

A division of the American Chemical Society

New Jour Electronic Journals & Newsletters

DRJI

INDEX COPERNICUS INTERNATIONAL

Journal Seek

HINARI Research in Health

DOAJ DIRECTORY OF OPEN ACCESS JOURNALS

ULRICHS GLOBAL SERIALS DIRECTORY