

Dissecting aorta diagnosed by CTA

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Abstract: 52 years old male patient came to the hospital suffering from severe chest pain; CT thoracic aorta angiogram was requested. The result of the CTA showed that there is aortic dissection in the arch of the aorta.

Keywords: CTA, CT, Angiogram.

INTRODUCTION

The arch of the aorta is a part of the aorta, the largest artery in the body. The arch of the aorta begins at the ascending aorta it runs posteriorly and slightly to the left then it ends at the descending aorta in the chest Fig 1 [1]. Development of the aorta occurs during third week of gestation [2, 3]. The development is a complex process. It is associated with the formation of the endocardial tube (day 21), which lends itself to a variety of congenital variants [3].

Dissecting aorta: occurs when a tear in the inner wall of the aorta causes blood to flow between the layers of

the wall of the aorta, forcing the layers apart. In most cases this is associated with severe characteristic chest or abdominal pain described as "tearing" in character, and often with other symptoms that result from decreased blood supply to other organs. Aortic dissection is a medical emergency and can quickly lead to death, even with optimal treatment, as a result of decreased blood supply to other organs, cardiac failure, and sometimes rupture of the aorta [4].

CTA: Computed tomographic angiography (CTA) is a noninvasive modality for evaluating the vascular system and planning treatment strategies [5, 6].

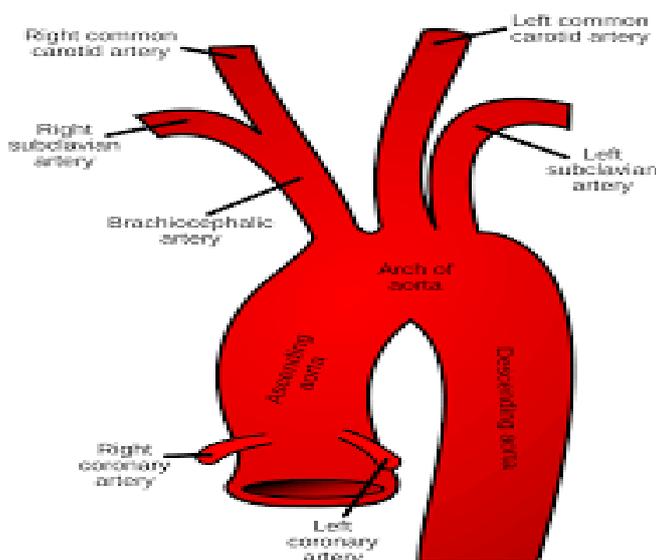


Fig. 1: Diagram shown the arch of aorta and its branches

CASE REPORT

52years old male patient came to the hospital suffering from severe chest pain; CT thoracic aorta angiogram was requested. The result of the CTA showed that there a tearing in the middle layer of the arch of the aorta. The case then diagnosed as aortic

dissection in the arch of the aorta Fig 2. The past history of the patient was recurrent chest pain and shortness of breathing (SOB). When examining the arterial pulse the finding was low arterial pulsation in the abdomen and lower limbs.



Fig 2: Axial CTA of the aorta shows the aortic dissection.

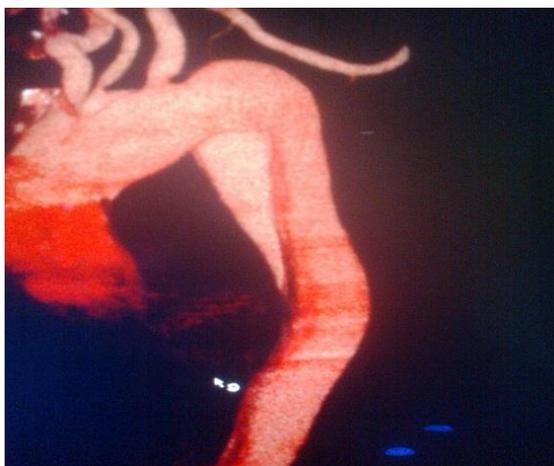


Fig 3: 3D image of the aorta shows the aortic dissection.

DISCUSSION

Aortic dissection is caused by an intimal and medial tear in the aorta with propagation of a false lumen within the aortic media. It is part of the “acute aortic syndrome”—an umbrella term for aortic dissection, intramural haematoma, and symptomatic aortic ulcer [6, 7]. Acute dissection is the most common aortic emergency, with an annual incidence of 3-4 per 100 000 in the United Kingdom and United States, which exceeds that of ruptured aneurysm [7]. The estimated incidence of aortic dissection is 5 to 30 cases per million people per year. This incidence is related to the prevalence of the risk factors for aortic dissection in different study populations [8–11]. Multiple modalities (CT, MRI scanning, and echocardiography) can be used to complement each other to facilitate diagnosis depending upon availability. The overall diagnostic accuracy of these different modalities is similar [12].

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