



# Diagnosis of High Bifurcation of the Abdominal Aorta and Associated Aneurysmal Dilatation in Different Parts Detected by Multidetector Computed Tomography: A Case Report Study

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## Background

The abdominal aorta is the main blood vessel in the abdominal cavity that transmits oxygenated blood from the thoracic cavity to the organs within the abdomen and to the lower limbs. Variations of the branches and bifurcation of the abdominal aorta with their relations with other abdominal and spinal structures are so important regarding abdominal and spinal surgery.

Vascular variations of the bifurcation of the abdominal aorta (BAA) are rare, and they are usually discovered incidentally by manifestations of chronic lower limb ischemia. The most common site of BAA was at the L4 vertebra which is reaching up to 83%) The BAA can be at an elevated level of the L3 vertebral body in rare cases, however, Bifurcation at level L2 is a very rare condition. Available imaging techniques such as computed tomography angiography or MR Angiography for the evaluation of abnormalities of whole-body arteries are helping clinicians to detect such conditions.



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## Objectives

we present a high-positioned BAA at the level of the L2 vertebral and associated aneurysms in multiple parts along the aorta as well as iliac vessels during a contrast-enhanced Multi-Detector Computed Tomography (MDCT) examination of the abdomen.

## Design and method

Case report study.

## Result

A 72 years old male was referred to our hospital for a CT Aortogram as a surveillance scan for Thoracic and Abdominal Aortic Aneurysm . We didn't have previous images for the patient for comparison.

A multiplanar angiographic images revealed mild calcification in the aortic sinus measured 23mm in diameter. The sinus of Valsalva measured 44 mm, ascending thoracic aorta approximately measured 35 mm, descending thoracic aorta noted 33mm, and abdominal aorta measured 28 mm in diameter. There was no evidence of intimal dissection or luminal thrombosis.

There was a high termination of the abdominal aorta approximately 2 cm below the right renal artery at the level of L2-L3 disc. Long vertical components of the common iliac arteries and a short distal oblique segments were noted. Borderline aneurysmal dilatation of the distal common iliac arteries measured about 16 mm on the right side and 15 mm on the left side.

Mild dilatation of the internal iliac arteries also noted bilaterally. Importantly, there was no Evidence of associated congenital horseshoe kidneys.

## Conclusion

We reported on a unique clinically and surgically significant case of variations of the abdominal aorta as related to the location and type of bifurcation associated with aneurysmal dilatation in multiple parts. MDCT with 3D-image reconstruction can provide valuable information including clinical significances of abdominal aorta abnormalities. The awareness of the variations of the abdominal aorta is fundamental for surgeons in order to reduce complications during abdominal and spinal interventions, as well as for radiologists for precise interpretation of angiograms.

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