

INCIDENTAL FINDINGS OF ARTERIAL ABNORMALITIES IN CHEST AND ABDOMINAL COMPUTED TOMOGRAPHY

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INTRODUCTION

- Incidental findings are defined as findings that are unrelated to the clinical indication for the imaging examination performed.
- Arterial abnormalities refer to deviation from what is considered normal in vascular anatomy, this can include anatomic variants and vascular rings.

Aim of the work

- The aim of this study is to illustrate and describe arterial abnormalities incidentally found on CT imaging of chest and abdomen.

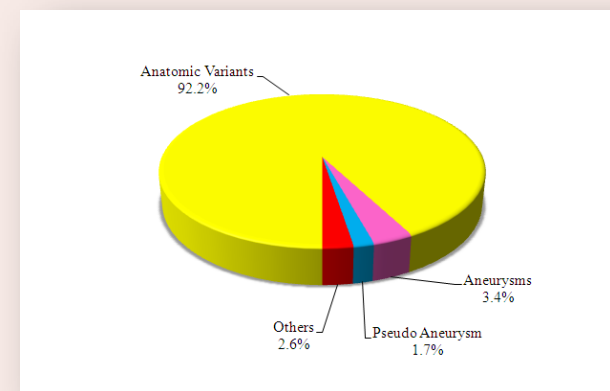
PATIENTS & METHODS

- A total of 1600 CT scans were reviewed retrospectively at the Alexandria main University hospital.
- Thoracic and abdominal aorta and its branches were analyzed on chest and abdominal CT scans, anatomical variations and/or abnormalities that were incidentally detected were noted.
- Data sets were available on a specific work station with complex image analysis software that produces 3D + MIP images.

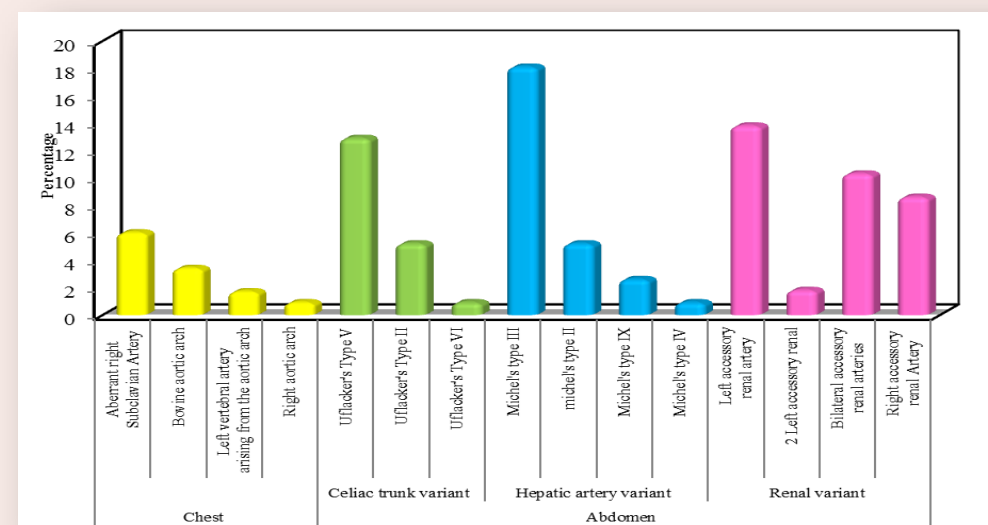
RESULTS

- 95 scans with a total of 116 incidental arterial abnormalities were detected in the current study; 78 scans (82.1%) were abdominal CT and 17 (17.9%) chest CT scans.
- This study had 107 (92.2%) incidental anatomic variants, from which 34.5% were renal arterial variants, 26.7% were hepatic arterial variants and 19% were celiac trunk variants.

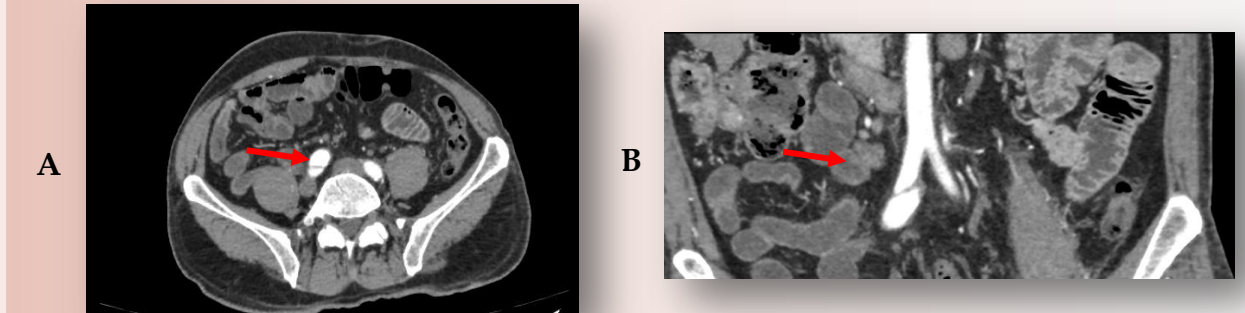
- Chest variants were 12.1% from which 7 cases (6%) were aberrant right subclavian artery, this was the most common variant from chest CT scans in this study.
- Visceral aneurysms and pseudoaneurysms were 4 cases (3.4%), Abdominal aortic aneurysms 2 cases (1.7%), dissection of the right iliac artery 2 cases (1.7%) and penetrating ulcer of the aorta 1 case (0.9%).
- 19 scans (20%) had multiple arterial abnormalities; 17 scans (17.9%) had multiple anatomic variants and 2 scans (2.1%) had an anatomic variant with other arterial abnormality.



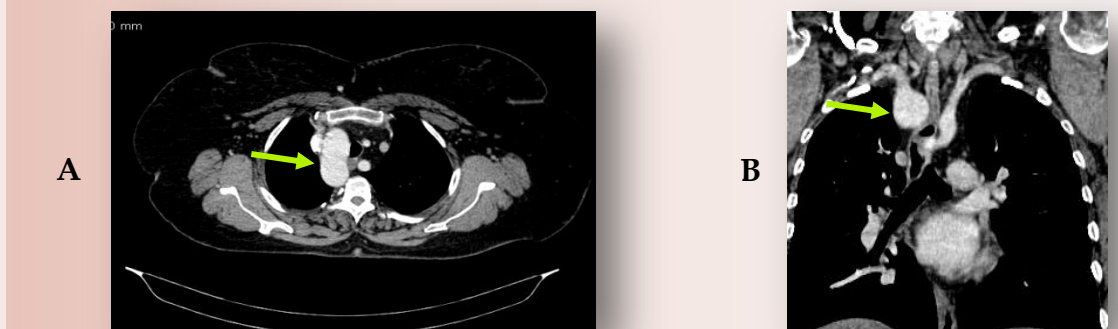
Distribution of the studied patients according to incidental finding (n = 116)



Distribution of the studied patients according to incidental finding (Anatomical Variants) (n = 116)



Axial (A) and Coronal (B) CECT images showing incidentally noted Right Iliac Artery dissection (red arrow) in a patient with History of Hepatocellular Carcinoma on TACE



Axial (A) and Coronal (B) CECT images showing incidentally noted Right Aortic arch (green arrow) in a patient with endometrial cancer who came for metastatic work up.

Conclusion

- Anatomic variants are common entities and are now being detected frequently during imaging, reporting these variants will enlighten the surgeon and avoid complications during interventional and surgical procedures. Some of life threatening emergencies are silent and its detection incidentally can be life saving.