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VERTEBRAL LEVEL OF ORIGIN OF THE ANTERIOR BRANCHES OF THE ABDOMINAL AORTA IN A CT ANGIOGRAPHIC STUDY

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Introduction: The abdominal aorta is a continuation of the thoracic aorta after passing through the aortic hiatus of the diaphragm at the level of the twelfth thoracic vertebra. Its anterior visceral branches—the celiac trunk, superior mesenteric artery (SMA), and inferior mesenteric artery (IMA)—provide the main arterial supply to the digestive organs. Knowledge of their vertebral level of origin is essential for accurate radiological interpretation and safe surgical and endovascular procedures. The aim of this study was to assess the vertebral level of origin of the celiac trunk, superior mesenteric artery, and inferior mesenteric artery by CT angiography and to determine their anatomical variability in the studied population.

Materials and Methods: A retrospective analysis of 60 CT angiograms acquired using a 128-slice CT scanner was performed. The vertebral level of origin of the celiac trunk, SMA, and IMA was assessed. Examinations were obtained from patients referred for clinically indicated abdominal CT angiography. Data were analyzed using descriptive statistics.

Results: The celiac trunk most originated at the T12/L1 intervertebral disc (91.7%), the SMA at the L1 vertebral body (91.7%), and the IMA at the L3 vertebral body (93.3%). Variations in the level of origin were observed in a small number of cases.

Conclusion: The most common vertebral levels of origin of the anterior branches of the abdominal aorta corresponded to classical anatomical descriptions, although uncommon variations were identified. These findings provide valuable anatomical information for radiological and surgical practice.

Keywords: anatomic variation; origin level; coeliac trunk; inferior mesenteric artery; superior mesenteric artery