

Rare Anatomical Variant of the Inferior Vena Cava: Left Sided Inferior Vena Cava

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Abstract

Anatomical variants of the inferior vena cava are important to know mainly for surgical treatment. They are mainly represented by the duplication of inferior vena cava, whereas left sided inferior vena cava is a rare variant. Imaging allows diagnosis of the variants, as they are usually discovered incidentally. We report the case of a 61 years old patient admitted for rectal cancer, to which a thoraco-abdominal extension examination CT-scan showed a left sided inferior vena cava.

Keywords:

Anatomical; Variant; Inferior; Vena cava; Imaging

Introduction

The left sided inferior vena cava is a rare variant of the inferior vena cava due to an embryological anomaly of regression of the cardinal veins. It is mostly asymptomatic therefore usually diagnosed through imaging.

We report the case of a 61 years old patient admitted for rectal cancer, to which a thoraco-abdominal extension examination CT-scan showed a rare variant of the inferior vena cava: The left sided inferior vena cava.

Case Report

A 61 years old male patient, diagnosed with low rectal cancer, was admitted for a tumor extension examination through a thoraco-abdominal CT-scan. The abdominal enhanced CT-scan showed a left sided inferior vena cava [Figure 1].

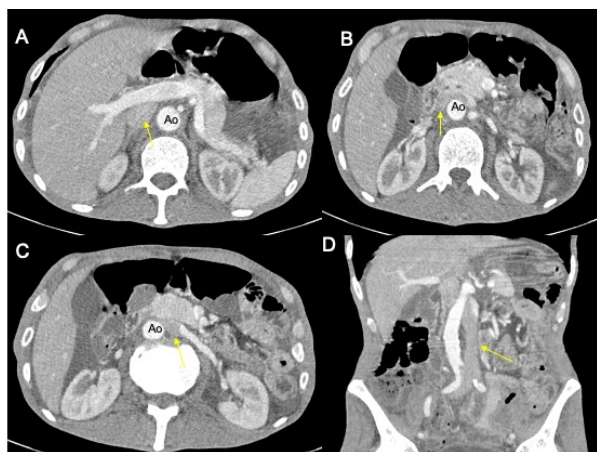


Figure 1: Abdominal CT scan in axial and (A-C) Coronal (D) Reconstructions, showing a left sided inferior vena cava (yellow arrow) placed on the left side of the abdominal Aorta (Ao).

The patient received concomitant chemoradiotherapy for his rectal cancer, followed by surgery (abdominoperineal amputation and pseudo-continent perineal colostomy), with a good follow up.

Discussion

The Inferior Vena Cava (IVC) is formed between the 6th and 8th gestational week, from 3 cardinal veins: Posterior cardinal, sub cardinal and supra cardinal veins. Their regression into one singular vein forms the inferior vena cava. [1]

Anomaly of regression of these veins results in anomalies of IVC such as duplication, interruption and transposition.

The duplication of IVC is the most common anatomical variant one with an incidence of 0.2%-0.5% [1,2] whereas the left sided IVC represents a rare variant with a 0.1%-0.4% incidence according to a study published by Ang et al. between 2000 and 2011. [3] These variants are usually asymptomatic and discovered incidentally through imaging. [4,5] The left sided IVC is caused by the persistence of the left supra cardinal vein with regression of the right supra cardinal vein. [6] It is clinically asymptomatic, and can be of no clinical harm. Although sometimes the right renal vein can be compressed between the aorta and superior mesenteric artery causing a nutcracker syndrome. [6-10] Diagnosis is mostly done

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fortuitously through enhanced imaging either through a CT-scan or an MRI. [4] These variants are of no serious impact but they are important to know and to be aware of especially for surgery in case of a tumor removal, lymph node dissection or transplant. [11]

Conclusion

Anatomical variants of the inferior vena cava, although asymptomatic, are important to know for surgical treatments. Imaging is the examination of choice for diagnosis.

References

1. Michael AG, Miguel C, Victor C, Gaetano C. Inverted nutcracker syndrome: A case of persistent hematuria and pain in the presence of a left-sided inferior vena cava. *Sci World J.* 2011;11:1031-5.
2. Chen L, Jian Z, Quan Y, Yu Z, Hongguang Xu. A patient with left-sided inferior vena cava who received oblique lumbar interbody fusion surgery: A case report. *J Med Case Rep.* 2020;14(1):21.
3. Wee Choen A, Terry D, Mark DS. Left-sided and duplicate inferior vena cava: A case series and review. *Clin Anat.* 2013;26(8):990-1001.
4. Khalid E, Adil D, Mohamed D, Rachid A, Fethi M. La veine cave inférieure gauche et la grefferénale. *Pan Afr Med J.* 2019;34:109.
5. Mototsugu M, Masaru F, Tomoyuki U, Keisuke M. Left-sided inferior vena cava. *BMJ Case Rep.* 2015;bcr:2015211268.
6. Yasuhiro U, Hayato A, Takayuki O. Left-sided inferior vena cava with nutcracker syndrome. *Clin Exp Nephrol.* 2019;23(3):425-426.
7. Nobuhisa T. Local advanced rectal cancer perforation in the midst of preoperative chemoradiotherapy: A case report and literature review. *World J Clin Cases.* 2017;23(7):326-339.
8. Khalil El G. Rectal perforation after neoadjuvant chemoradiotherapy for low-lying rectal cancer. *BMJ Case Rep.* 2015;34:1-10.
9. Bundgaard NS. Intraoperative tumor perforation is associated with decreased 5-year survival in colon cancer: A nationwide database study. *Scand J Surg.* 2017;26(8):890-901.
10. Khan A. Rectal cancer perforation: A rare complication of neoadjuvant radiotherapy for rectal cancer. *Internet Journal of Oncology,* 2010;36(1):1-10.
11. Zbigniew B, Banaszkiwicz Z. Colorectal cancer with intestinal perforation-a retrospective analysis of treatment outcomes. *Contemp Oncol (Pozn).* 2014;89:1-25.