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LEFT INFERIOR VENA CAVA - A CONGENITAL ANOMALY

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ABSTRACT

Inferior vena cava (IVC) anomalies are very rare and are mostly diagnosed incidentally on imaging of the abdominal area either with computed tomography (CT) or magnetic resonance (MIR) due to other medical complications. Various anomalies of IVC are mainly due to its complex process of development. In general population about 0.2 – 3.0% of duplication of the IVC has been reported. Other variations of IVC that has been reported includes, the absence of the inferior vena cava, left-sided vena cava, double vena cava, absence of the hepatic segment of the inferior vena cava with azygos continuation, absence of the infrarenal segment of the inferior vena cava with preservation of the suprarenal segment, circumaortic left renal veins, and retroaortic left renal vein. These variants can be confused with lymphadenopathy, aortic aneurysm, and retroperitoneal cysts [1- 4].

CASE REPORT

We report a 9-year-old female patient presented to the emergency department in our Sangre Grande Hospital complaining of acute abdominal pain. The physical examination and the laboratory test results did not provide any significant findings. Ultrasonography of the abdominal area was performed to rule out for any pathological findings, because of the persistence of the symptoms we proceeded with CT imagining of the abdomen. Incidentally CT imaging showed that the two common iliac veins that joined at the left side of the abdominal aorta to form left IVC. The usual right sided IVC was also present, which was formed by the respective common iliac vein. The left IVC ascended to the level of the renal veins, crossed the aorta anteriorly, joined the right IVC and then ascended upwards as a single vein in its normal anatomical course. We did not notice any other vascular variations.

DISCUSSION

Congenital anomalies of the IVC are not frequent, variation of IVC ranges between 0.3% and 0.6% in the general population [5]. About an increases in 2.0% is found in those with other congenital cardiovascular defects such as dextrocardia, transposition of the great vessels, pulmonary artery stenosis or a single atrium [6]. Deep venous thrombosis or chronic venous insufficiency are often the first indicators of a congenital IVC anomaly [7]. Variations of IVC is mainly due to the development defect, development of the inferior vena cava is very complex process, which is formed during the 6-8 weeks of embryonic period by a series of anastomoses and regressions of the posterior cardinal veins, subcardinal veins, and supracardinal veins and their anastomsis. The prerenal segment is derived from the right subcardinal vein, while the renal segment is derived via anastomoses between the subcardinal and supracardinal veins, and the postrenal segment is derived from the right supracardinal vein [8]. The review of literature shows that during embryonic development the persistence of the left supracardinal vein leads to the presence of left IVC, which is generally found to the left of the abdominal aorta. Patients with IVC variations have high risk of developing deep vein thrombosis of the lower extremities [9, 10]. The majority of cases of double IVC are diagnosed incidentally

by imaging for other reasons, but these variations can have significant clinical implications. Radiologically, the presence of double IVC can be mistaken as a pathological lesion such as lymphadenopathy [11, 12] or left pyelo-ureteric dilatation [13].The presence of double IVC may also complicate retroperitoneal surgery. The double IVC can be inadvertently injured or ligated during retroperitoneal surgery [14, 15].

Figure - 1 Left Inferior Vena Cava – a congenital anomaly

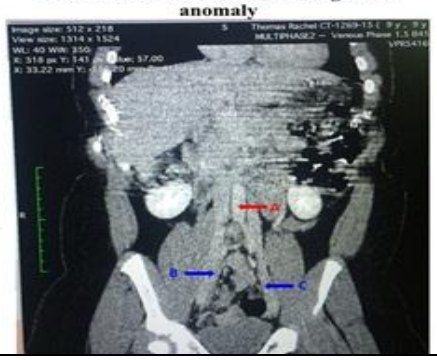
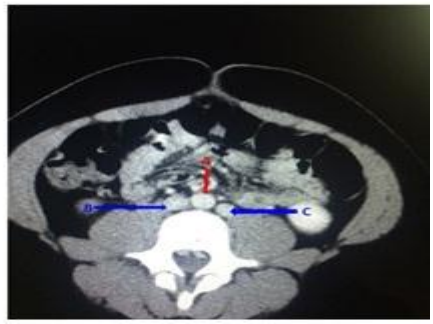


Figure - 2 Left Inferior Vena Cava – a congenital anomaly



CONCLUSION

The objective of this report is to highlight this case to increase awareness of this venous anomaly and to emphasize the importance of clinical complication which might result in a misinterpretation of the radiologic images and leading to surgical errors. These variations has to be recognized by clinicians in order to avoid complications during imaging, such as bleeding during retroperitoneal lymph node dissections , venous thromboembolic disease and renal transplantation.

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CONFLICT OF INTEREST: NIL

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