Original Research Paper

Volume - 13 | Issue - 05 | May - 2023 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Surgery

PERSISTENT LEFT INFRARENAL SEGMENT OF INFERIOR VENA CAVA : A CASE REPORT

Savita kumari Esic medical college faridabad

ABSTRACT Persistent left infrarenal segment of inferior vena Cava is congenital anomaly most often detected in asymptomatic patients . Such type of IVC anomaly has significant relevance for interventional radiologist and surgeon performing retroperitoneal surgery . We report a case of persistent left infrarenal segment of inferior vena Cava which was observed during routine dissection class of MBBS students. We discussed observations with their embryological and clinical importance .

KEYWORDS : inferior vena cava , congenital anomaly ,

Introduction :

Persistent left infrarenal segment of inferior vena cava as congenital anomaly is usually clinically silent and detected incidentally during imaging . Incidence of IVCD is 1.5 %(range - 0.2-3%) with intra operative finding between 0.2-0.6 %. (1,2) Such types of venous anomalies is important during retroperitoneal surgery and venous interventional radiology. Therefore a case of persistent left infrarenal segment of IVC is discussed with their embryological and clinical significance .

Case:

During routine dissection in a gross anatomy course for MBBS in ESIC medical college, Faridabad ,we got a case of presence of infrarenal segments of left inferior vena in adult female cadaver .

The right common iliac vein and inter iliac vein from left to right joined to form right IVC at the level upper border of fifth lumbar vertebra . The right IVC ascends along the right side of the abdominal aorta . The right renal vein drained into the right IVC at the level of first lumbar vertebra and same level of origin of superior mesenteric Artery .

The left IVC arose by union of the left common vein ascend cranially along the left side the abdominal aorta and terminated in the left renal vein. It was measured 9.5cm long before joining with the left renal vein. Left renal vein joined with left suprarenal vein and crossed to right in upward direction anterior to abdominal aorta joined with right inferior vein cava . The left ovary vein joined left renal vein 3.8cm proximal to the left IVC termination at the level L2 vertebra and right ovary vein terminated in right IVC at lower pole of right kidney in ventral aspect of right IVC. Inferior mesenteric vein also joined left renal vein medial to gonadal vein. The left kidney surface has smooth appearance and small in size as compared to right. Left lobe of liver is enlarged and extended to mid axillary line . Cadaver underwent cholecystectomy and hysterectomy, and other clinical history is unknown .

Discussion

IVC anomalies occur during the complex process of embryogenesis which takes place in between the 6th to tenth weeks gestation . At 4th weeks of life, three different type of venous systems appears : Vitelline system the drains the gut, umbilical system drains the placenta ,cardinal system drains the rest of the embryo.

Infrahepatic segment of IVC develops from three paired parallel veins appears between 4th and 8th weeks of life. These are posterior cardinal, subcardinal ,and supracardinal veins. Infrahepatic segment of IVC derived from right sub- cardinal vein. The renal collar is formed from anastomoses b/w the supra cardinal veins posteriorly and subcardinal vein anteriorly ,with posterior limb regressing during development . On the right anterior limb is incorporated into the lateral wall of the renal segment of IVC and on the left , anterior limb forms the normal adult left renal vein . Infrarenal vein of left side disappears but from the infrarenal portion of the IVC on the right .Distal The posterior cardinal veins ,which later become the iliac confluence and future iliac veins . (7,8) Various pattern of venous anomalies encountered during different steps of IVC formation in that series one of them is persistent left infrarenal segment of IVC . This type of anomalies is due to presents of right and left supra cardinal veins . Care should be taken to avoid mistake to diagnosis such type of anomalies for adenopathy . Such type of case suspected in recurrent pulmonary embolism after after placement of of IVC filter in one side so should be careful for both side for performing coil embolisation of the smaller IVC . (3,4,5)

Knowledge of the embryology helps in understanding the spectrum of these anomalies and their clinical implications . It also helps designing an effective treatment plan for interventional standpoint .

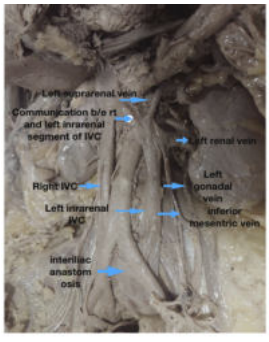
In the case of left sided IVC ,the left supracardinal vein persists Left sided IVC or transposition of IVC is very unusual events in compatible with normal life . IVC anomaly are asymptomatic, cases of venous Caval anamolies are important in retroperitoneal surgeries because they diagnosed as paraaortic lymphadenopathy, tumor ,or dilated veins .

Conclusion - awareness of such congenital anomalies of IVC is necessary for radiologist to avoid complication during interventions and endovascular procedure . Such type of anomaly are clinical relevance to urological and retroperitoneal surgeries .

ACKNOWLEDGEMENTS

The authors would gratefully acknowledge the contribution of teaching and non teaching staff of ESIC medical college Faridabad .

Conflicts of Interest: The authors have no conflicts of interest.



REFERENCES :

1 Adachi B. Das Venensystem der Japaner. Die Kaiserlich- Japanischen Universtät zu Kyoto, 1940; 216 –266.
2 Yano R, Hayakawa D, Emura S, Chen H, Ozawa Y, Taguchi H and Shoumura S. Two cases of the double inferior venae cavae. Okaji- mas Folia Anat Jpn 2000; 77:133–136.
3. Forster J, Biyani C, Weston PM. A gentle remind- er in the laparoscopic era left-sided inferior vena cava. Int Urol Nephrol 2006;38:439-42.
4. Tsukamoto S, Shindo S, Obana M, et al. Operative management of abdominal aortic aneurysm with left-sided inferior vena cava. J Cardiovasc Surg (To- rino) 2000;41:287-90.
5. Rispoli P, Conforti M, Cassatella R, et al. Left-sided inferior vena cava in patients submitted to aorto iliac surgery. Our experience and review of the lit- erature. J Cardio vasc Surg (Torino) 2001;42:249- 55.
6 Malaki M, Willis AP, Jones RG. Congenital anomalies of the inferior vena cava. Clin Radiol 2012;67:165-71.
7. Ghandour A, Partovi S, Karuppasamy K, Rajiah P. Congenital anomalies of the IVC—embryological perspectives and clinical relevance. Cardiovasc Diagn Ther 2016;6(6):482-492.
8. Phillips E. Embryology, normal anatomy, and anomalies. In: Ferris EJ, Hipona FA, Kahn PC, Phillips E, Shapiro JH (eds) Venography of the Inferior Vena Cava and its Branches. Baltimore: Williams & Wilkins 1969:1-32.
9. Huayue chen, Shoichi Emura Sachio Nagasaki, and Kin-ya Kubo. Double inferior vena cava with interiliac vein: A case report and literature review Okajimas Folia Anat. Jpn., 88(4): 147 – 151, February, 2012
10. Pineda D, Moudgill N, Eisenberg J, et al. An interesting anatomic variant of inferior vena cava duplication: case report and review of the literature. Vascular 2013;21:163-7.