

World Journal of *Clinical Cases*

World J Clin Cases 2020 October 26; 8(20): 4688-5069



MINIREVIEWS

- 4688 Relationship between non-alcoholic fatty liver disease and coronary heart disease
Arslan U, Yenercağ M

ORIGINAL ARTICLE**Retrospective Cohort Study**

- 4700 Remission of hepatotoxicity in chronic pulmonary aspergillosis patients after lowering trough concentration of voriconazole
Teng GJ, Bai XR, Zhang L, Liu HJ, Nie XH

Retrospective Study

- 4708 Endoscopic submucosal dissection as alternative to surgery for complicated gastric heterotopic pancreas
Noh JH, Kim DH, Kim SW, Park YS, Na HK, Ahn JY, Jung KW, Lee JH, Choi KD, Song HJ, Lee GH, Jung HY
- 4719 Observation of the effects of three methods for reducing perineal swelling in children with developmental hip dislocation
Wang L, Wang N, He M, Liu H, Wang XQ
- 4726 Predictive value of serum cystatin C for risk of mortality in severe and critically ill patients with COVID-19
Li Y, Yang S, Peng D, Zhu HM, Li BY, Yang X, Sun XL, Zhang M
- 4735 Sleep quality of patients with postoperative glioma at home
Huang Y, Jiang ZJ, Deng J, Qi YJ
- 4743 Early complications of preoperative external traction fixation in the staged treatment of tibial fractures: A series of 402 cases
Yang JZ, Zhu WB, Li LB, Dong QR
- 4753 Retroperitoneal vs transperitoneal laparoscopic lithotripsy of 20-40 mm renal stones within horseshoe kidneys
Chen X, Wang Y, Gao L, Song J, Wang JY, Wang DD, Ma JX, Zhang ZQ, Bi LK, Xie DD, Yu DX
- 4763 Undifferentiated embryonal sarcoma of the liver: Clinical characteristics and outcomes
Zhang C, Jia CJ, Xu C, Sheng QJ, Dou XG, Ding Y
- 4773 Cerebral infarct secondary to traumatic internal carotid artery dissection
Wang GM, Xue H, Guo ZJ, Yu JL
- 4785 Home-based nursing for improvement of quality of life and depression in patients with postpartum depression
Zhuang CY, Lin SY, Cheng CJ, Chen XJ, Shi HL, Sun H, Zhang HY, Fu MA

Observational Study

- 4793** Cost-effectiveness of lutetium (¹⁷⁷Lu) oxodotreotide *vs* everolimus in gastroenteropancreatic neuroendocrine tumors in Norway and Sweden
Palmer J, Leeuwenkamp OR
- 4807** Factors related to improved American Spinal Injury Association grade of acute traumatic spinal cord injury
Tian C, Lv Y, Li S, Wang DD, Bai Y, Zhou F, Ma QB
- 4816** Intraoperative systemic vascular resistance is associated with postoperative nausea and vomiting after laparoscopic hysterectomy
Qu MD, Zhang MY, Wang GM, Wang Z, Wang X

META-ANALYSIS

- 4826** Underwater *vs* conventional endoscopic mucosal resection in treatment of colorectal polyps: A meta-analysis
Ni DQ, Lu YP, Liu XQ, Gao LY, Huang X

CASE REPORT

- 4838** Dehydrated patient without clinically evident cause: A case report
Palladino F, Fedele MC, Casertano M, Liguori L, Esposito T, Guarino S, Miraglia del Giudice E, Marzuillo P
- 4844** Intracranial malignant solitary fibrous tumor metastasized to the chest wall: A case report and review of literature
Usuda D, Yamada S, Izumida T, Sangen R, Higashikawa T, Nakagawa K, Iguchi M, Kasamaki Y
- 4853** End-of-life home care of an interstitial pneumonia patient supported by high-flow nasal cannula therapy: A case report
Goda K, Kenzaka T, Kuriyama K, Hoshijima M, Akita H
- 4858** Rupture of carotid artery pseudoaneurysm in the modern era of definitive chemoradiation for head and neck cancer: Two case reports
Kim M, Hong JH, Park SK, Kim SJ, Lee JH, Byun J, Ko YH
- 4866** Unremitting diarrhoea in a girl diagnosed anti-N-methyl-D-aspartate-receptor encephalitis: A case report
Onpoaree N, Veeravigrom M, Sanpavat A, Suratannon N, Sintusek P
- 4876** Paliperidone palmitate-induced facial angioedema: A case report
Srifuengfung M, Sukakul T, Liangcheep C, Viravan N
- 4883** Improvement of lenvatinib-induced nephrotic syndrome after adaptation to sorafenib in thyroid cancer: A case report
Yang CH, Chen KT, Lin YS, Hsu CY, Ou YC, Tung MC
- 4895** Adult metaplastic hutch diverticulum with robotic-assisted diverticulectomy and reconstruction: A case report
Yang CH, Lin YS, Ou YC, Weng WC, Huang LH, Lu CH, Hsu CY, Tung MC

- 4902** Thrombus straddling a patent foramen ovale and pulmonary embolism: A case report
Huang YX, Chen Y, Cao Y, Qiu YG, Zheng JY, Li TC
- 4908** Therapeutic experience of an 89-year-old high-risk patient with incarcerated cholecystolithiasis: A case report and literature review
Zhang ZM, Zhang C, Liu Z, Liu LM, Zhu MW, Zhao Y, Wan BJ, Deng H, Yang HY, Liao JH, Zhu HY, Wen X, Liu LL, Wang M, Ma XT, Zhang MM, Liu JJ, Liu TT, Huang NN, Yuan PY, Gao YJ, Zhao J, Guo XA, Liao F, Li FY, Wang XT, Yuan RJ, Wu F
- 4917** Woven coronary artery: A case report
Wei W, Zhang Q, Gao LM
- 4922** Idiopathic multicentric Castleman disease with pulmonary and cutaneous lesions treated with tocilizumab: A case report
Han PY, Chi HH, Su YT
- 4930** Perianorectal abscesses and fistula due to ingested jujube pit in infant: Two case reports
Liu YH, Lv ZB, Liu JB, Sheng QF
- 4938** Forniceal deep brain stimulation in severe Alzheimer's disease: A case report
Lin W, Bao WQ, Ge JJ, Yang LK, Ling ZP, Xu X, Jiang JH, Zuo CT, Wang YH
- 4946** Systemic autoimmune abnormalities complicated by cytomegalovirus-induced hemophagocytic lymphohistiocytosis: A case report
Miao SX, Wu ZQ, Xu HG
- 4953** Nasal mucosa pyoderma vegetans associated with ulcerative colitis: A case report
Yu SX, Cheng XK, Li B, Hao JH
- 4958** Amiodarone-induced hepatotoxicity – quantitative measurement of iodine density in the liver using dual-energy computed tomography: Three case reports
Lv HJ, Zhao HW
- 4966** Multisystem involvement Langerhans cell histiocytosis in an adult: A case report
Wang BB, Ye JR, Li YL, Jin Y, Chen ZW, Li JM, Li YP
- 4975** New mutation in EPCAM for congenital tufting enteropathy: A case report
Zhou YQ, Wu GS, Kong YM, Zhang XY, Wang CL
- 4981** Catastrophic vertebral artery and subclavian artery pseudoaneurysms caused by a fishbone: A case report
Huang W, Zhang GQ, Wu JJ, Li B, Han SG, Chao M, Jin K
- 4986** Anastomosing hemangioma arising from the left renal vein: A case report
Zheng LP, Shen WA, Wang CH, Hu CD, Chen XJ, Shen YY, Wang J
- 4993** Bladder perforation caused by long-term catheterization misdiagnosed as digestive tract perforation: A case report
Wu B, Wang J, Chen XJ, Zhou ZC, Zhu MY, Shen YY, Zhong ZX

- 4999** Primary pulmonary plasmacytoma accompanied by overlap syndrome: A case report and review of the literature
Zhou Y, Wang XH, Meng SS, Wang HC, Li YX, Xu R, Lin XH
- 5007** Gastrointestinal stromal tumor metastasis at the site of a totally implantable venous access port insertion: A rare case report
Yin XN, Yin Y, Wang J, Shen CY, Chen X, Zhao Z, Cai ZL, Zhang B
- 5013** Massive gastrointestinal bleeding caused by a Dieulafoy's lesion in a duodenal diverticulum: A case report
He ZW, Zhong L, Xu H, Shi H, Wang YM, Liu XC
- 5019** Plastic bronchitis associated with *Botrytis cinerea* infection in a child: A case report
Liu YR, Ai T
- 5025** Chest, pericardium, abdomen, and thigh penetrating injury by a steel rebar: A case report
Yang XW, Wang WT
- 5030** Monocular posterior scleritis presenting as acute conjunctivitis: A case report
Li YZ, Qin XH, Lu JM, Wang YP
- 5036** Choriocarcinoma with lumbar muscle metastases: A case report
Pang L, Ma XX
- 5042** Primary chondrosarcoma of the liver: A case report
Liu ZY, Jin XM, Yan GH, Jin GY
- 5049** Successful management of a tooth with endodontic-periodontal lesion: A case report
Alshawwa H, Wang JF, Liu M, Sun SF
- 5057** Rare imaging findings of hypersensitivity pneumonitis: A case report
Wang HJ, Chen XJ, Fan LX, Qi QL, Chen QZ
- 5062** Effective administration of cranial drilling therapy in the treatment of fourth degree temporal, facial and upper limb burns at high altitude: A case report
Shen CM, Li Y, Liu Z, Qi YZ

ABOUT COVER

Peer-reviewer of *World Journal of Clinical Cases*, Dr. Aleem Ahmed Khan is a Distinguished Scientist and Head of The Central Laboratory for Stem Cell Research and Translational Medicine, Centre for Liver Research and Diagnostics, Deccan College of Medical Sciences, Kanchanbagh, Hyderabad (India). Dr. Aleem completed his Doctorate from Osmania University, Hyderabad in 1998 and has since performed pioneering work in the treatment of acute liver failure and decompensated cirrhosis using hepatic stem cell transplantation. During his extensive research career he supervised 10 PhD students and published > 150 research articles, 7 book chapters, and 2 patents. His ongoing research involves developing innovative technologies for organ regeneration and management of advanced cancers. (L-Editor: Filipodia)

AIMS AND SCOPE

The primary aim of *World Journal of Clinical Cases* (*WJCC*, *World J Clin Cases*) is to provide scholars and readers from various fields of clinical medicine with a platform to publish high-quality clinical research articles and communicate their research findings online.

WJCC mainly publishes articles reporting research results and findings obtained in the field of clinical medicine and covering a wide range of topics, including case control studies, retrospective cohort studies, retrospective studies, clinical trials studies, observational studies, prospective studies, randomized controlled trials, randomized clinical trials, systematic reviews, meta-analysis, and case reports.

INDEXING/ABSTRACTING

The *WJCC* is now indexed in Science Citation Index Expanded (also known as SciSearch®), Journal Citation Reports/Science Edition, PubMed, and PubMed Central. The 2020 Edition of Journal Citation Reports® cites the 2019 impact factor (IF) for *WJCC* as 1.013; IF without journal self cites: 0.991; Ranking: 120 among 165 journals in medicine, general and internal; and Quartile category: Q3.

RESPONSIBLE EDITORS FOR THIS ISSUE

Production Editor: *Ji-Hong Liu*; Production Department Director: *Xiang Li*; Editorial Office Director: *Jin-Lai Wang*.

NAME OF JOURNAL

World Journal of Clinical Cases

ISSN

ISSN 2307-8960 (online)

LAUNCH DATE

April 16, 2013

FREQUENCY

Semimonthly

EDITORS-IN-CHIEF

Dennis A Bloomfield, Sandro Vento, Bao-Gan Peng

EDITORIAL BOARD MEMBERS

<https://www.wjgnet.com/2307-8960/editorialboard.htm>

PUBLICATION DATE

October 26, 2020

COPYRIGHT

© 2020 Baishideng Publishing Group Inc

INSTRUCTIONS TO AUTHORS

<https://www.wjgnet.com/bpg/gerinfo/204>

GUIDELINES FOR ETHICS DOCUMENTS

<https://www.wjgnet.com/bpg/GerInfo/287>

GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH

<https://www.wjgnet.com/bpg/gerinfo/240>

PUBLICATION ETHICS

<https://www.wjgnet.com/bpg/GerInfo/288>

PUBLICATION MISCONDUCT

<https://www.wjgnet.com/bpg/gerinfo/208>

ARTICLE PROCESSING CHARGE

<https://www.wjgnet.com/bpg/gerinfo/242>

STEPS FOR SUBMITTING MANUSCRIPTS

<https://www.wjgnet.com/bpg/GerInfo/239>

ONLINE SUBMISSION

<https://www.f6publishing.com>

Anastomosing hemangioma arising from the left renal vein: A case report

Li-Ping Zheng, Wei-Ai Shen, Chun-Hua Wang, Chun-Dong Hu, Xu-Jian Chen, Yi-Yu Shen, Jing Wang

ORCID number: Li-Ping Zheng 0000-0002-4452-0417; Wei-Ai Shen 0000-0001-8026-867X; Chun-Hua Wang 0000-0001-7962-1210; Chun-Dong Hu 0000-0003-0042-5634; Xu-Jian Chen 0000-0003-2446-3491; Yi-Yu Shen 0000-0002-9325-2834; Jing Wang 0000-0002-5789-0003.

Author contributions: Zheng LP and Wang J designed the case report; Zheng LP and Shen WA collected the clinical data of the patient; Wang CH provided and explained the pathological pictures; Hu CD and Chen XJ analyzed the data; Zheng LP wrote the manuscript.

Supported by the People's Livelihood Science and Technology Innovation Project of the Bureau of Science and Technology of Jiaxing City, No. 2019AD32201.

Informed consent statement: Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Conflict-of-interest statement: The authors declare that they have no conflict of interest.

CARE Checklist (2016) statement: The authors have read the CARE Checklist (2016), and the manuscript was prepared and revised according to the CARE

Li-Ping Zheng, Chun-Dong Hu, Xu-Jian Chen, Yi-Yu Shen, Jing Wang, Department of General Surgery, The Second Affiliated Hospital of Jiaxing University, Jiaxing 314000, Zhejiang Province, China

Wei-Ai Shen, University of Ningbo, Ningbo 315000, Zhejiang Province, China

Chun-Hua Wang, Department of Pathology, The Second Affiliated Hospital of Jiaxing University, Jiaxing 314000, Zhejiang Province, China

Corresponding author: Jing Wang, MD, Associate Chief Physician, Department of General Surgery, The Second Affiliated Hospital of Jiaxing University, No. 1518 Huancheng North Road, Jiaxing 314000, Zhejiang Province, China. drzlping@126.com

Abstract

BACKGROUND

Anastomosing hemangioma (AH) is a rare subtype of benign hemangioma that is most commonly found in the genitourinary tract. Due to the lack of specific clinical and radiologic manifestations, it is easily misdiagnosed preoperatively. Here, we report a case of AH arising from the left renal vein that was discovered incidentally and confirmed pathologically, and then describe its imaging characteristics from a radiologic point of view and review its clinicopathologic features and treatment.

CASE SUMMARY

A 74-year-old woman was admitted to our department for a left retroperitoneal neoplasm measuring 2.6 cm × 2.0 cm. Her laboratory data showed no significant abnormalities. A non-contrast-enhanced computed tomography (CT) scan showed a heterogeneous density in the neoplasm. Non-contrast-enhanced magnetic resonance imaging (MRI) revealed a heterogeneous hypointensity on T1-weighted images and a heterogeneous hyperintensity on T2-weighted images. On contrast-enhanced CT and MRI scans, the neoplasm presented marked septal enhancement in the arterial phase and persistent enhancement in the portal phase, and its boundary with the left renal vein was ill-defined. Based on these clinical and radiological manifestations, the neoplasm was initially considered to be a neurogenic neoplasm in the left retroperitoneum. Finally, the neoplasm was completely resected and pathologically diagnosed as AH.

CONCLUSION

AH is an uncommon benign hemangioma. Preoperative misdiagnoses are

Checklist (2016).

Open-Access: This article is an open-access article that was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution NonCommercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

Manuscript source: Unsolicited manuscript

Received: July 27, 2020

Peer-review started: July 27, 2020

First decision: August 7, 2020

Revised: August 14, 2020

Accepted: September 9, 2020

Article in press: September 9, 2020

Published online: October 26, 2020

P-Reviewer: Gokce E, Nath J

S-Editor: Zhang H

L-Editor: Wang TQ

P-Editor: Liu JH



common not only because of a lack of specific clinical and radiologic manifestations but also because clinicians lack vigilance and diagnostic experience in identifying AH. AH is not exclusive to the urogenital parenchyma. We report the first case of this neoplasm in the left renal vein. Recognition of this entity in the left renal vein can be helpful in its diagnosis and distinction from other neoplasms.

Key Words: Anastomosing hemangioma; Angiosarcoma; Computed tomography; Magnetic resonance imaging; Case report; Pathology

©The Author(s) 2020. Published by Baishideng Publishing Group Inc. All rights reserved.

Core Tip: Anastomosing hemangioma (AH) is difficult to recognize because of its rarity and atypia. Herein, we report a case of AH in an old woman that was discovered incidentally and confirmed pathologically. To the best of our knowledge, this is the first case of AH reported in the left renal vein. Recognizing that AH may occur in the left renal vein will help improve doctors' vigilance and reduce the probability of misdiagnosis.

Citation: Zheng LP, Shen WA, Wang CH, Hu CD, Chen XJ, Shen YY, Wang J. Anastomosing hemangioma arising from the left renal vein: A case report. *World J Clin Cases* 2020; 8(20): 4986-4992

URL: <https://www.wjgnet.com/2307-8960/full/v8/i20/4986.htm>

DOI: <https://dx.doi.org/10.12998/wjcc.v8.i20.4986>

INTRODUCTION

Hemangiomas are most common in the skin or subcutaneous soft tissue, while few occur in the liver, kidney, and other parenchymal organs. Morphologically, most are classic capillary hemangiomas or venous hemangiomas. In 2009, Montgomery and Epstein^[1] reported a unique type of capillary hemangioma occurring in the kidney and testis. Its morphology consists of an ethmoid, sinusoid, anastomosing vascular pattern lined with hobnailed endothelial cells, which is similar to the red pulp of the spleen, and the mass was first named "anastomosing hemangioma" (AH). Subsequently, a few cases of AH were reported in the liver, gastrointestinal tract, retroperitoneum, ovary, bladder, adrenal gland, nasal cavity, and intracranial space^[2-9].

Here we report the case of a 74-year-old woman who presented without any symptoms and was accidentally found to have a left retroperitoneal neoplasm by imaging examination. After surgical resection, the neoplasm was pathologically diagnosed as AH.

CASE PRESENTATION

Chief complaints

A 74-year-old woman was admitted to our department for a left retroperitoneal neoplasm that was found 1 mo prior during a routine checkup.

History of present illness

One month prior, abdominal non-contrast-enhanced computed tomography (CT) at a local hospital revealed a left retroperitoneal neoplasm. However, the patient had no symptoms.

History of past illness

The patient had a history of hypertension for 20 years and had been taking 0.15 g irbesartan once a day to control blood pressure to within the normal range. In addition, the patient had a history of auricular fibrillation for 1 mo and had been taking 0.1 g aspirin each night for anticoagulant therapy and 47.5 milligrams succinic

metoprolol once a day to control the heart rate to approximately 90 beats/min.

Physical examination

The patient had no superficial lymph node enlargement. An abdominal physical examination showed that her abdomen was flat and soft without tenderness.

Laboratory examinations

Routine blood tests, biochemical function, coagulation function, and tumor markers, as well as the levels of cortisol (19.13 µg/dL, reference range 6.24-18 µg/dL), aldosterone (105.04 ng/L, reference range 50-313 ng/L), the three hypertension items [plasma renin activity, 1.03 µg/L/h, reference range 1.45-5 µg/L/h; angiotensin I, 0.96 µg/L; angiotensin II, 50.19 ng/L, reference range 32-90 ng/L] were all within normal ranges.

Imaging examinations

A CT scan of the abdomen was performed in our hospital, on which the neoplasm presented as a circular heterogeneous hypodense soft-tissue shadow (Figure 1A). On contrast-enhanced CT, the neoplasm presented heterogeneous septal enhancement in the arterial phase (Figure 1B) and persistent enhancement in the portal phase, and its boundary with the left renal vein was ill-defined (Figure 1C).

To further clarify the diagnosis, we also performed a contrast-enhanced magnetic resonance imaging (MRI) scan. On T1-weighted images, the neoplasm showed a circular heterogeneous hypointensity (Figure 2A). On T2-weighted images and diffusion-weighted images, the neoplasm showed a circular heterogeneous hyperintensity (Figure 2B and C). On arterial phase post-contrast T1-weighted images, the neoplasm showed obvious septal enhancement (Figure 2D). On axial and coronal portal venous phase post-contrast T1-weighted images, the neoplasm showed persistent enhancement and its boundary with the left renal vein was ill-defined (Figure 2E and F).

FINAL DIAGNOSIS

Based on these clinical and radiological manifestations, the neoplasm was initially diagnosed as a neurogenic neoplasm of the left retroperitoneum.

TREATMENT

The patient planned to undergo laparoscopic resection of the left retroperitoneal neoplasm, but due to the ill-defined boundary between the neoplasm and the left renal vein, massive bleeding occurred during the surgical separation, so the patient was transferred to open surgery. Finally, the neoplasm was completely resected in the case of renal vascular occlusion, and we reconstructed the left renal vein.

OUTCOME AND FOLLOW-UP

The patient recovered smoothly without any complications. *In situ*, the neoplasm was located in front of the left renal vein, and the boundary between them was ill-defined (Figure 3A). Macroscopically, the neoplasm presented as a mahogany brown lesion, with no capsule (Figure 3B). Microscopically, the neoplasm was composed of a clear ethmoid, sinusoid, and anastomosing vascular pattern, which was separated by fibers into lobules and had the appearance of the red pulp of the spleen. The vascular endothelial cells of the neoplasm looked like a hobnail, and the local vascular endothelial nuclei were enlarged, hyperchromatic, and slightly abnormal, but no mitotic figure was seen (Figure 3C and D). On immunohistochemical examination, the cytoplasm of the vascular endothelial cells were positive for CD31 (Figure 3E) and CD34 (Figure 3F), and the nuclei of the vascular endothelial cells were positive for ERG (Figure 3G), while only a few endothelial cells were positive for Ki 67 with a positive rate of 7% (Figure 3H). These characteristics were consistent with a diagnosis of AH. There were no signs of postoperative recurrence during the 2-mo CT follow-up.

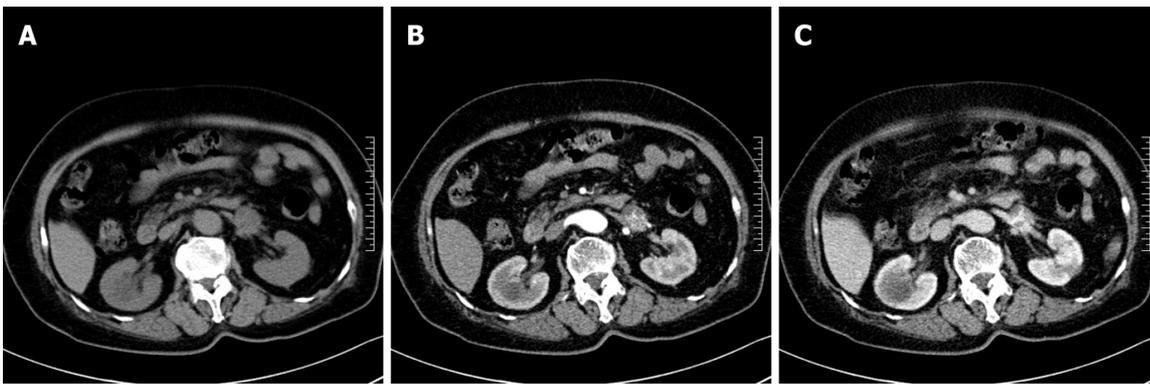


Figure 1 Anastomosing hemangioma of left renal vein on computed tomography. A: Non-contrast-enhanced scan; B: Arterial phase of contrast-enhanced scan; C: Portal phase of contrast-enhanced scan.

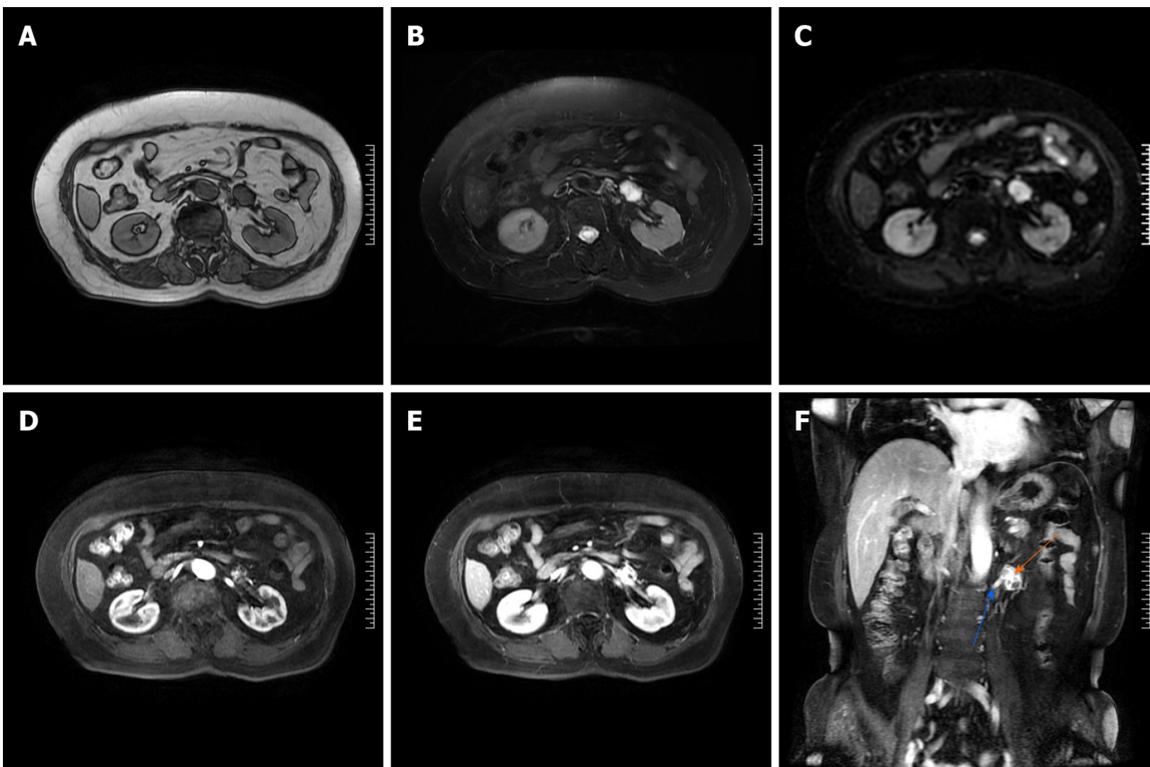


Figure 2 Anastomosing hemangioma of left renal vein on magnetic resonance imaging. A: T1-weighted image; B: T2-weighted image; C: Diffusion-weighted image; D: Arterial phase post-contrast T1-weighted image; E: Portal venous phase post-contrast T1-weighted image; F: Coronal portal venous phase post-contrast T1-weighted image. Orange arrow marks the anastomosing hemangioma, and blue arrow marks the left renal vein.

DISCUSSION

AH is extremely rare, and its etiology and pathogenesis remain unclear. It mainly occurs in the genitourinary tract; however, several cases have been reported in the liver, gastrointestinal tract, retroperitoneum, nasal cavity, and even the intracranial space^[3,4,8,9]. Although AH involving the left renal vein branches has also been reported^[10], we presented the first case of isolated anastomotic hemangioma arising from the left renal vein rather than the renal parenchyma.

AH is more common in middle-aged and elderly people, with a slight male predilection^[11]. Generally, its diameter ranges from 0.1 cm to 6.0 cm^[12]. AH has no special clinical symptoms or laboratory indicators, which is often found on accidental imaging examination. However, the imaging findings of AH show no specificity and are similar to most benign space-occupying lesions. On non-contrast-enhanced CT, the AH showed lobulated lesions, with soft-tissue attenuation, and on contrast-enhanced CT, it presented as a heterogeneous solid lesion with persistent enhancement^[11,13]. On

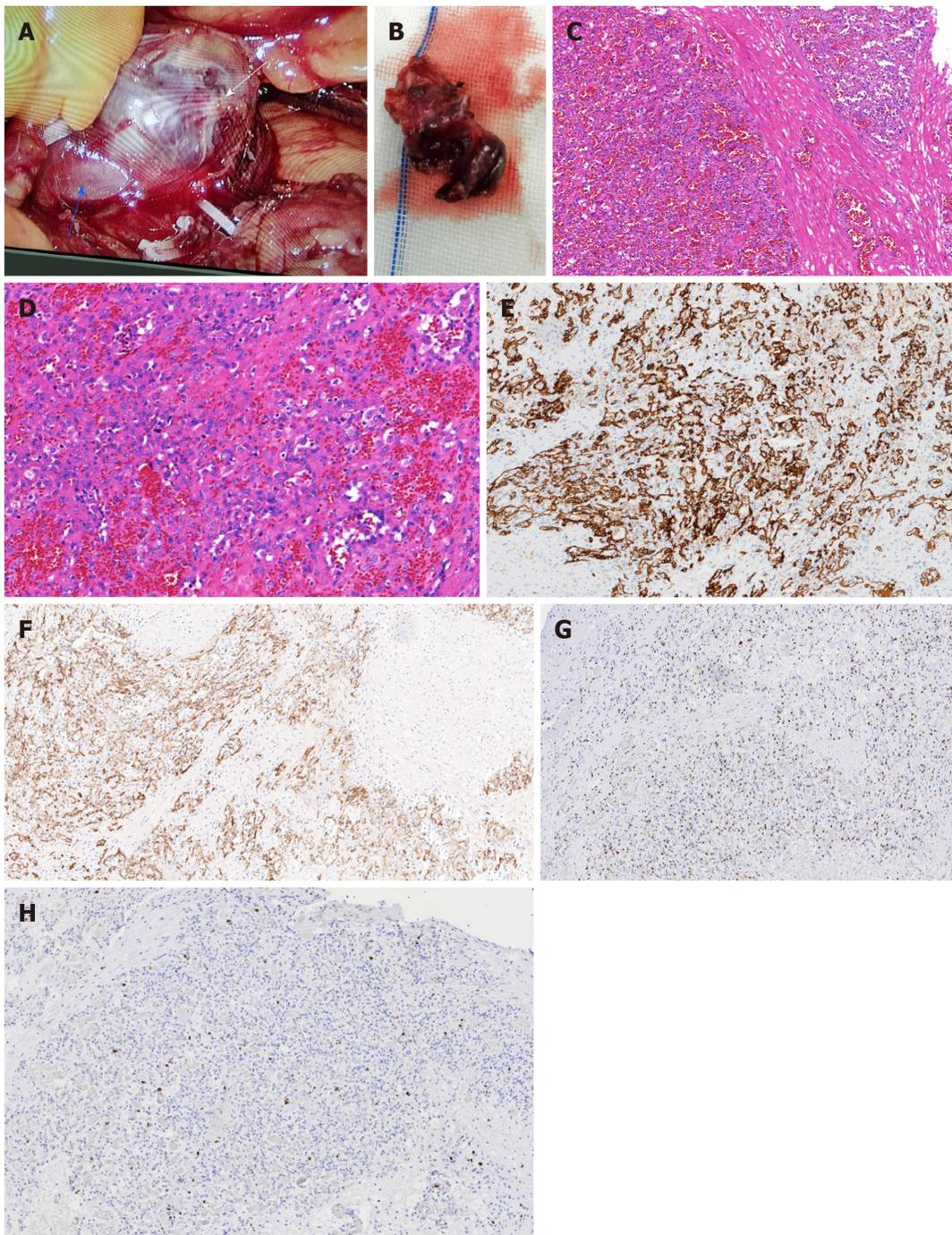


Figure 3 Histopathological findings of anastomosing hemangioma. A: *In situ* anastomosing hemangioma (AH, white arrow) and the left renal vein (blue arrow); B: Cut surface of the AH; C: Hematoxylin and eosin (H&E) staining (magnification: 100 ×); D: H&E staining (magnification: 200 ×); E-H: Immunohistochemical staining (magnification: 100 ×) for CD31 (E), CD34 (F), ERG (G), and Ki 67 (H).

non-contrast-enhanced MRI, the AH presented as a round, well-defined T1-hypointense and T2-hyperintense lesion, and on contrast-enhanced MRI, it presented with avid peripheral enhancement in the arterial phase, which persisted in the delayed phase without central enhancement^[14]. However, Merritt *et al*^[15] also described the characteristics of their AH on MRI. In their report, the lesion presented as homogenous enhancement in the arterial phase, both peripherally and centrally, which persisted in the delayed phase. In our case, the lesion showed heterogeneous septal enhancement in the arterial phase, which persisted in the portal phase.

The diagnosis of AH mainly depends on histopathological examination. Macroscopically, AH is usually a spongy neoplasm with no capsule, but with a clear boundary and mahogany-brown in color^[11,12,16]. Microscopically, AH is characterized by tightly packed capillary channels lined with hobnailed endothelial cells, which are similar in appearance to the red pulp of the spleen, have extramedullary

hematopoiesis, and lack endothelial atypia^[11,17]. Immunohistochemical staining revealed strong and diffuse CD31, CD34, and EGR positivity^[17,18]. It is important to note that there is no mitotic activity, no or slight cellular atypia, and a low Ki-67 index^[11,12,18].

AH should be mainly differentiated from angiosarcoma^[19]. Angiosarcoma is a rare, invasive, malignant tumor and radiologic examination is unable to differentiate it from AH. Histologically, it also presents with hobnailed endothelial cells and can mimic AH^[11]. However, angiosarcoma is characterized by high-grade cell atypia, multiple layers of endothelial cells, and obvious mitotic activity, none of which were present in our case. Therefore, based on these characteristic histopathological findings, our case was diagnosed as AH.

The treatment of AH is controversial because a diagnosis cannot be made from preoperative radiologic examination. When biopsy results are available, the treatment may vary depending on the lesion location, lesion size, and presence of symptoms, such as observation, embolization or radiofrequency ablation, and local or radical resection, to avoid overtreatment. However, some scholars are wary of percutaneous biopsies because of the risk of bleeding in some cases.

AH runs a benign clinical course. Previous studies have shown that there is no propensity for disease recurrence^[11,20]. Yet recent research suggests that a recurrence of AH is indeed possible^[21] and recurrent GNAQ mutations in the pathogenesis of AH^[22]. Although other capillary hemangiomas, especially congenital hemangioma, also have GNAQ mutations, the clinical setting (that is, the age and location of the patient) makes AH unique within this group^[22]. Moreover, GNAQ mutations are not found in angiosarcoma, which may play an important role in distinguishing AH from angiosarcoma. Currently, due to the rarity of AH, there are no established guidelines for its follow-up.

CONCLUSION

We report a case of AH arising from the left renal vein, which, as far as we know, has never been reported before. In light of the lack of specific clinical and radiologic manifestations, AH is easily misdiagnosed preoperatively. Awareness of this entity occurring in the left renal vein will not only help improve doctors' vigilance and reduce the probability of misdiagnosis but also can aid in determining the most appropriate treatment for the patient.

ACKNOWLEDGEMENTS

We wish to acknowledge Gang Jin (Urinary Surgery, The Second Affiliated Hospital of Jiaying University, Jiaying) for his assistance in the surgical technique, Ya-Wei Yu (Department of Pathology, The Second Affiliated Hospital of Jiaying University, Jiaying) for her support on this case in pathology, and Xiao-feng Chen (Department of radiology, The Second Affiliated Hospital of Jiaying University, Jiaying) for her comments on this case in radiology.

REFERENCES

- 1 **Montgomery E**, Epstein JI. Anastomosing hemangioma of the genitourinary tract: a lesion mimicking angiosarcoma. *Am J Surg Pathol* 2009; **33**: 1364-1369 [PMID: 19606014 DOI: 10.1097/PAS.0b013e3181ad30a7]
- 2 **Lunn B**, Yasir S, Lam-Himlin D, Menias CO, Torbenson MS, Venkatesh SK. Anastomosing hemangioma of the liver: a case series. *Abdom Radiol (NY)* 2019; **44**: 2781-2787 [PMID: 31069477 DOI: 10.1007/s00261-019-02043-x]
- 3 **Lin J**, Bigge J, Ulbright TM, Montgomery E. Anastomosing hemangioma of the liver and gastrointestinal tract: an unusual variant histologically mimicking angiosarcoma. *Am J Surg Pathol* 2013; **37**: 1761-1765 [PMID: 23887160 DOI: 10.1097/PAS.0b013e3182967e6c]
- 4 **Jayaram A**, Manipadam MT, Jacob PM. Anastomosing hemangioma with extensive fatty stroma in the retroperitoneum. *Indian J Pathol Microbiol* 2018; **61**: 120-122 [PMID: 29567900 DOI: 10.4103/IJPM.IJPM_259_16]
- 5 **Gunduz M**, Hurdogan O, Onder S, Yavuz E. Cystic Anastomosing Hemangioma of the Ovary: A Case Report With Immunohistochemical and Ultrastructural Analysis. *Int J Surg Pathol* 2019; **27**: 437-440 [PMID: 30522379 DOI: 10.1177/1066896918817148]
- 6 **Jin LU**, Liu J, Li Y, Sun S, Mao X, Yang S, Lai Y. Anastomosing hemangioma: The first case report in the

- bladder. *Mol Clin Oncol* 2016; **4**: 310-312 [PMID: 26893881 DOI: 10.3892/mco.2015.699]
- 7 **Zhou J**, Yang X, Zhou L, Zhao M, Wang C. Anastomosing Hemangioma Incidentally Found in Kidney or Adrenal Gland: Study of 10 Cases and Review of Literature. *Urol J* 2020; Epub ahead of print [PMID: 32281091 DOI: 10.22037/uj.v0i0.5514]
 - 8 **Huang ZY**, Chen CC, Thingujam B. Anastomosing Hemangioma of the Nasal Cavity. *Laryngoscope* 2020; **130**: 354-357 [PMID: 30963589 DOI: 10.1002/lary.27998]
 - 9 **Bodman A**, Goodman A, Olson JJ. Intracranial thrombosed anastomosing hemangioma: Case report. *Neuropathology* 2020; **40**: 206-210 [PMID: 31788869 DOI: 10.1111/neup.12624]
 - 10 **Omiyale AO**, Golash A, Mann A, Kyriakidis D, Kalyanasundaram K. Anastomosing Haemangioma of the Kidney Involving a Segmental Branch of the Renal Vein. *Case Rep Surg* 2015; **2015**: 927286 [PMID: 26435872 DOI: 10.1155/2015/927286]
 - 11 **Omiyale AO**. Anastomosing hemangioma of the kidney: a literature review of a rare morphological variant of hemangioma. *Ann Transl Med* 2015; **3**: 151 [PMID: 26244138 DOI: 10.3978/j.issn.2305-5839.2015.06.16]
 - 12 **Tao LL**, Dai Y, Yin W, Chen J. A case report of a renal anastomosing hemangioma and a literature review: an unusual variant histologically mimicking angiosarcoma. *Diagn Pathol* 2014; **9**: 159 [PMID: 25102914 DOI: 10.1186/s13000-014-0159-y]
 - 13 **Silva MA**, Fonseca EKUN, Yamauchi FI, Baroni RH. Anastomosing hemangioma simulating renal cell carcinoma. *Int Braz J Urol* 2017; **43**: 987-989 [PMID: 28727378 DOI: 10.1590/S1677-5538.IBJU.2016.0653]
 - 14 **Peng X**, Li J, Liang Z. Anastomosing haemangioma of liver: A case report. *Mol Clin Oncol* 2017; **7**: 507-509 [PMID: 28808574 DOI: 10.3892/mco.2017.1341]
 - 15 **Merritt B**, Behr S, Umetsu SE, Roberts J, Kolli KP. Anastomosing hemangioma of liver. *J Radiol Case Rep* 2019; **13**: 32-39 [PMID: 31558961 DOI: 10.3941/jrcr.v13i6.3644]
 - 16 **Al-Maghrabi HA**, Al Rashed AS. Challenging Pitfalls and Mimickers in Diagnosing Anastomosing Capillary Hemangioma of the Kidney: Case Report and Literature Review. *Am J Case Rep* 2017; **18**: 255-262 [PMID: 28286335 DOI: 10.12659/ajcr.902939]
 - 17 **Cheon PM**, Rebello R, Naqvi A, Popovic S, Bonert M, Kapoor A. Anastomosing hemangioma of the kidney: radiologic and pathologic distinctions of a kidney cancer mimic. *Curr Oncol* 2018; **25**: e220-e223 [PMID: 29962849 DOI: 10.3747/co.25.3927]
 - 18 **O'Neill AC**, Craig JW, Silverman SG, Alencar RO. Anastomosing hemangiomas: locations of occurrence, imaging features, and diagnosis with percutaneous biopsy. *Abdom Radiol (NY)* 2016; **41**: 1325-1332 [PMID: 26960722 DOI: 10.1007/s00261-016-0690-2]
 - 19 **Heidegger I**, Pichler R, Schäfer G, Zelger B, Zelger B, Aigner F, Bektic J, Horninger W. Long-term follow up of renal anastomosing hemangioma mimicking renal angiosarcoma. *Int J Urol* 2014; **21**: 836-838 [PMID: 24650180 DOI: 10.1111/iju.12433]
 - 20 **Zhang W**, Wang Q, Liu YL, Yu WJ, Liu Y, Zhao H, Zhuang J, Jiang YX, Li YJ. Anastomosing hemangioma arising from the kidney: a case of slow progression in four years and review of literature. *Int J Clin Exp Pathol* 2015; **8**: 2208-2213 [PMID: 25973131]
 - 21 **Burton KR**, Jakate K, Pace KT, Vlachou PA. A case of recurrent, multifocal anastomosing haemangiomas. *BMJ Case Rep* 2017; **2017**: bcr2017220076 [PMID: 28630244 DOI: 10.1136/bcr-2017-220076]
 - 22 **Bean GR**, Joseph NM, Gill RM, Folpe AL, Horvai AE, Umetsu SE. Recurrent GNAQ mutations in anastomosing hemangiomas. *Mod Pathol* 2017; **30**: 722-727 [PMID: 28084343 DOI: 10.1038/modpathol.2016.234]



Published by **Baishideng Publishing Group Inc**
7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA

Telephone: +1-925-3991568

E-mail: bpgoffice@wjgnet.com

Help Desk: <https://www.f6publishing.com/helpdesk>

<https://www.wjgnet.com>

