Imaging features and clinical management of mesenteric cavernous lymphangioma: A case report and literature review

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Abstract. Mesenteric cavernous lymphangioma (MCL) is a rare benign mesenchymal tumor arising from the mesentery. The current study presents the detailed clinical course and management of a patient with MCL. The patient underwent a complete resection of the mesenteric mass, a partial jejunal resection and a jejunojejunostomy in July 2021. On postoperative day 5, a low-output enterocutaneous fistula developed, which was successfully managed with conservative treatment. At the 4.5-year follow-up, the patient remained in stable condition with no evidence of disease recurrence. Although MCL is histologically benign, its locally infiltrative growth pattern can mimic malignant soft-tissue tumors, particularly liposarcomas, on imaging and clinical presentation, leading to diagnostic uncertainty and potential overtreatment. Therefore, accurate identification of the characteristic radiological features of MCL is essential not only for an accurate preoperative diagnosis but also for surgical planning and intraoperative decision-making. However, the existing literature consists predominantly of small case series and individual case reports, and comprehensive analyses of the clinical and imaging characteristics of MCL remain lacking. The current study presents a case of MCL and conducts a systematic review of the literature to comprehensively characterize its clinical and imaging manifestations, thereby providing evidence to support the accurate preoperative diagnosis of MCL.

Introduction

In 1887, Wegner (1) classified lymphangiomas into three histological types, namely, simple, cavernous and cystic, a classification that remains widely accepted today. The pathogenesis of lymphangiomas remains incompletely understood, although they are generally regarded as developmental anomalies (2,3). Consequently, most patients are diagnosed during early childhood. Lymphangiomas account for 4-6% of benign soft tissue tumors in children. The head and neck region (~75%) and axillary region (~20%) are the most common sites of involvement, whereas intra-abdominal lymphangiomas are relatively rare, accounting for <5% of all lymphangiomas (2,3). Among these, mesenteric cavernous lymphangiomas (MCLs) represent a particularly rare and underrecognized disease entity. Clinically, the more common abdominal cystic lymphangioma is usually discovered incidentally during asymptomatic physical examinations of middle-aged women (4,5). By contrast, according to published case reports, mesenteric cavernous lymphangioma seems to be more prevalent among male patients, and is often accompanied by clinical manifestations such as abdominal pain and abdominal distension. Owing to its locally infiltrative growth pattern, MCL often contains abundant fibrous stroma and adipose tissue, resulting in imaging features that may mimic malignant or intermediate-grade mesenteric tumors, including liposarcoma, desmoid tumors, inflammatory pseudotumors and extra-gastrointestinal stromal tumors, thereby increasing the difficulty of preoperative diagnosis. The etiology of MCL in adults may be associated with acquired factors, such as inflammation, trauma, surgery or radiotherapy. Owing to its lack of specific clinical manifestations, MCL is frequently misdiagnosed, which may result in unnecessarily extensive surgery or delayed treatment (6-9).

However, MCL has received limited attention in the surgical and pathological literature Since Viar *et al* (10) first described this lesion in 1961, the available literature has remained largely limited to isolated case reports, with no comprehensive analysis of its clinical and imaging characteristics. Accordingly, the current study presents a case of MCL and conducts a comprehensive review of the relevant literature to synthesize and analyze its demographic, clinical and imaging characteristics. The aim of the present study is to provide evidence that may facilitate the accurate preoperative diagnosis of MCL.

Case report

Patient presentation. A 55-year-old woman presented to the Zhuji People's Hospital (Zhuji, China) in July 2021 with a 3-day history of right upper quadrant abdominal pain that had

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progressively worsened over the preceding 13 h. The patient's medical history was notable for surgery for benign intestinal lesions 25 years previously. Upon physical examination, the patient's vital signs were stable. The abdomen was soft and distended, with no mildly palpable masses.

Laboratory investigations revealed a normal white blood cell count (3.5-9.5x10^9/l) and a mildly elevated C-reactive protein (CRP) level (45.32 mg/l; reference range, <5 mg/l). Serum tumor markers, including α-fetoprotein (AFP; reference range, 0-8.1 ng/ml), carcinoembryonic antigen (CEA; reference range, 0-5.0 ng/ml), cancer antigen 125 (CA125; reference range, 0-35 U/ml) and CA19-9 (reference range, 0-37 U/ml), were all within the normal ranges. Follow-up laboratory tests demonstrated that the serum total protein and albumin levels had decreased from 71.3 and 42.4 g/l at admission to 64.4 and 38.9 g/l, respectively.

Imaging findings. Contrast-enhanced abdominal computed tomography (CT) performed on admission revealed an irregular, well-defined low-attenuation mass in the left mid-abdomen containing multiple traversing vascular structures. The lesion showed no appreciable contrast enhancement (Fig. 1A-D). Based on these imaging findings, the initial radiological diagnosis was liposarcoma. Upper abdominal MRI performed 3 days later demonstrated that the lesion was hypointense on T1-weighted imaging (T1WI) and hyperintense on T2WI (Fig. 2A and B), with patchy signal loss on in-phase imaging (Fig. 2D-F). DWI shows patchy hyperintense signals (Fig. 2C). The lesion showed no significant enhancement after contrast administration (Fig. 2G-I). A follow-up CT performed during hospitalization demonstrated new intralesional hemorrhagic foci (Fig. 1E and F). The location of the newly emerged hemorrhagic focus is consistent with the high-signal area on DWI (Fig. 2C).

Treatment and pathological findings. At 9 days post-admission, the patient underwent an exploratory laparotomy, a complete resection of the mesenteric mass, a partial jejunal resection and a jejunojejunostomy. Intraoperatively, a soft, milky-white mass measuring ~10x15 cm was identified within the jejunal mesentery. The lesion involved ~30 cm of the jejunum and extended to a previous intestinal anastomosis. Milky fluid exuded from the cut surface of the specimen. Intraoperative frozen-section examination revealed vascular-like structures and scattered lymphocytes within proliferating adipose tissue. The resected specimen was initially fixed using 10% neutral buffered formalin (ready-to-use) at 25˚C for 12 h. Subsequently, 3 μm-thick sections were prepared. The sections were stained with hematoxylin and eosin (H&E) at 25˚C for 45 min and examined using a Zeiss Axio Lab A1 bright-field light microscope. Representative images were captured at x100 magnification. Definitive histopathological examination confirmed the diagnosis of mesenteric cavernous lymphangioma (Fig. 3).

Postoperative course and follow-up. Postoperatively, the patient received antimicrobial therapy, fluid replacement and nutritional support. The patient's clinical condition remained stable during the first 4 postoperative days. On postoperative day 1 (POD1), 210 ml of pale red fluid was drained. On POD2, the drainage fluid became clear, gastrointestinal decompression was discontinued. On POD3, the drainage volume decreased to 70 ml. On POD5, the patient developed a fever of 39˚C, and bilious fluid was noted in the abdominal drain. On POD6, the patient resumed bowel function, with the passage of flatus and stool; however, the drainage volume increased to 650 ml, consistent with a high-output intestinal fistula. On POD7, the drainage fluid appeared enteric in nature, with a volume of 250 ml. On POD8, the patient developed a fever of 38.4˚C, and the drainage fluid became tinged with blood. On POD9, the patient developed lower abdominal pain and vomited blood-tinged fluid. The drainage fluid became turbid and blood-tinged, with a total drainage volume of 250 ml. Following the development of these postoperative complications, conservative management was initiated, including fasting, gastrointestinal decompression, parenteral nutritional support, fluid and electrolyte management, and anti-infective therapy. Due to persistent bloody drainage and suspected active intra-abdominal bleeding, the patient was transferred to a higher-level medical center for further evaluation. Mesenteric angiography revealed contrast extravasation from a branch of the superior mesenteric artery, and transcatheter arterial embolization was successfully performed. Following the intervention, the drainage volume gradually decreased, inflammatory markers improved, and the intestinal fistula was managed conservatively. Subsequent small bowel contrast examination demonstrated no communication between the intestinal lumen and the drainage tract, allowing removal of the drainage tube. The patient was discharged after 36 days of hospitalization and remained clinically stable without recurrence during 4.5 years of follow-up. The detailed postoperative clinical course and management strategies are summarized in Table I.

The patient was subsequently transferred to the First Affiliated Hospital, Zhejiang University School of Medicine (Hangzhou, China) for further management. Telephone follow-up and a review of the patient's medical records revealed that, on POD9, superior mesenteric angiography demonstrated contrast extravasation from a branch of the superior mesenteric artery. Emergency transcatheter arterial embolization was subsequently performed (Fig. 4). The fistula was considered likely to have originated from the jejunal anastomotic site. However, imaging studies were unable to precisely localize the fistulous opening. Hemostasis was successfully achieved following transcatheter arterial embolization.

Following the interventional procedure, the abdominal drainage output gradually decreased, with the fistula subsequently transitioning to a low-output fistula. On the first day after the interventional procedure, 530 ml of dark red fluid was drained. Laboratory tests showed that the serum total protein and albumin levels had decreased to 56.7 g/l (reference ranges, 65-85 g/l) and 35.3 g/l (reference ranges, 40-55 g/l), respectively, while the CRP level had increased to 83.4 mg/l (reference range, <5 mg/l). The patient received nutritional support, correction of the electrolyte imbalance and conservative management, including pharmacological therapy to reduce gastrointestinal secretions, acid suppression, gastric mucosal protection and antimicrobial treatment. By the third day after the interventional procedure, the drainage volume had

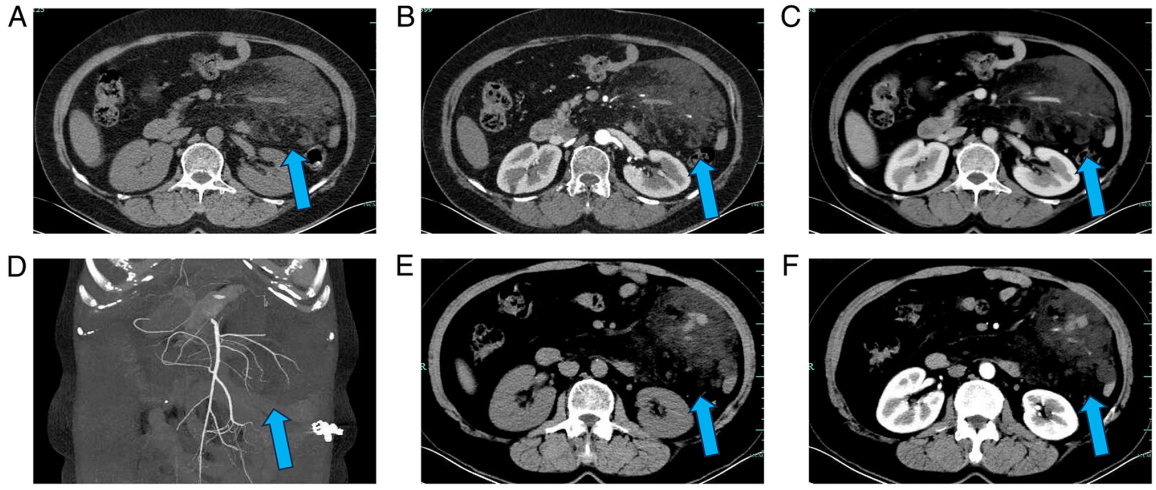

Figure 1. Serial contrast-enhanced CT findings of mesenteric cavernous lymphangioma. (A-D) Initial CT examination performed at admission. (A) Non-enhanced CT image demonstrating an irregular, well-defined, low-attenuation mass in the left middle abdomen (blue arrow). (B) Arterial phase CT image showing no notable enhancement of the lesion, with mesenteric vessels traversing through the mass (blue arrow). (C) Portal venous phase CT image demonstrating persistent absence of significant enhancement within the lesion, with preservation of the traversing mesenteric vessels (blue arrow). (D) MIP reconstruction image demonstrating the vessels passing through the lesion (blue arrow). (E and F) Follow-up contrast-enhanced CT performed 7 days after admission. (E) Non-enhanced CT image showing newly developed hyperattenuating foci within the lesion, suggesting intralesional hemorrhage (blue arrow). (F) Contrast-enhanced CT image demonstrating persistent absence of notable enhancement within the lesion, with the hemorrhagic components remaining visible (blue arrow). CT, computed tomography; MIP, maximum intensity projection.

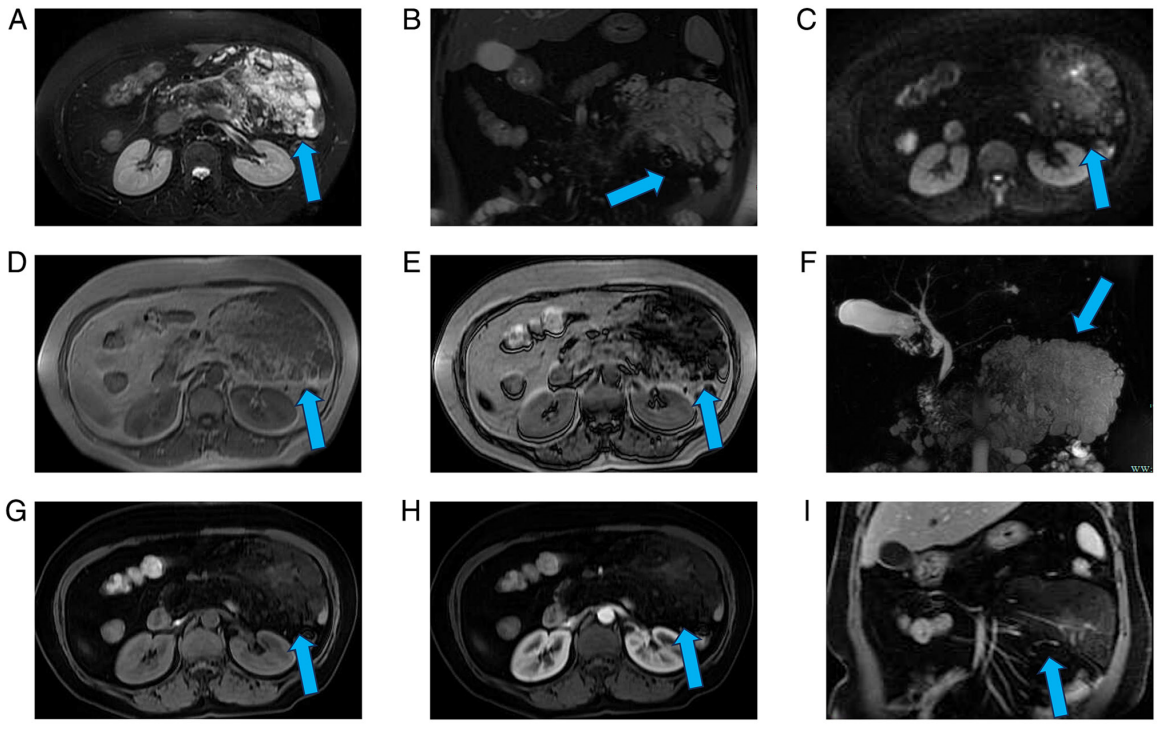

Figure 2. MRI findings of the upper abdomen performed 3 days after admission. (A) Axial T2-weighted fat-suppressed images demonstrating high signal intensity within the lesion (blue arrow). (B) Coronal T2-weighted fat-suppressed image showing the hyperintense appearance of the lesion (blue arrow). (C) DWI showing a small focal area of high signal intensity within the lesion (blue arrow). (D) In-phase T1-weighted image showing relatively homogeneous signal intensity within the lesion (blue arrow). (E) Opposed-phase T1-weighted image demonstrating patchy signal loss within the lesion (blue arrow). (F) MRCP image showing the biliary and pancreatic ductal systems. (G) Non-enhanced axial T1-weighted image demonstrating iso- to slightly hyperintense signal intensity of the lesion relative to the adjacent muscle (blue arrow). (H) Post-contrast axial T1-weighted image showing no notable enhancement of the lesion (blue arrow). (I) Post-contrast coronal T1-weighted image demonstrating persistent absence of notable enhancement within the lesion (blue arrow). MRI, magnetic resonance imaging; DWI, diffusion-weighted imaging; MRCP, magnetic resonance cholangiopancreatography.

decreased to 200 ml. Follow-up laboratory tests performed on the sixth day after the procedure showed that the serum total protein and albumin levels had increased to 62.7 and 38.4 g/l, respectively, while the CRP level had decreased to 61.9 mg/l. Conservative management was continued, consisting of supportive care with fluid replacement, nutritional support,

Table I. Course of patient treatment.

Time	General condition	Imaging study	Invasive medical procedure	Nursing and medication management	Drainage fluid color/volume
Admission	CRP, 45.32 mg/l; TP, 77.4 g/l; ALB, 43.1 g/l	Whole-abdomen contrast-enhanced CT	-	Anti-infective therapy (cefotiam 2.0 g IV infusion twice daily)	-
Hospital day 1	CRP, 24.7 mg/l; TP, 71.3 g/L; ALB, 42.4 g/l	Non-contrast chest CT	-	Anti-infective therapy	
Hospital day 3	-	Upper abdominal contrast-enhanced MRI	-		
Hospital day 8	TP, 64.4 g/l; ALB, 38.9 g/l	Upper abdominal contrast-enhanced CT			
Hospital day 9	-		Exploratory laparotomy	Level I nursing care, anti-infective therapy (piperacillin/tazobactam 4.5 g), analgesic therapy, hemostatic therapy and fluid replacement therapy	
Hospital day 10; postoperative day 1	-			Anti-infective therapy, analgesic therapy, hemostatic therapy and fluid replacement therapy	Light red fluid/210 ml
Hospital day 11; postoperative day 2	-			Hemostatic therapy was discontinued. The patient was downgraded to level II nursing care, and gastrointestinal decompression was discontinued	Light red fluid/350 ml
Hospital day 12; postoperative day 3	-				Light red fluid/ 70 ml
Hospital day 14; postoperative day 5	Body temperature 39˚C	Whole-abdomen non-contrast CT		The patient was upgraded to level I nursing care. Somatostatin therapy, anti-infective therapy (piperacillin/tazobactam 4.5 g every 8 h), and fluid replacement therapy were administered	Bilious fluid
Hospital day 15; postoperative day 6		Whole-abdomen non-contrast CT		Treatment was continued without modification	Bilious fluid/ 650 ml
Hospital day 16; postoperative day 7					Enteric-appearing fluid/250 ml

Table I. Continued.

Time	General condition	Imaging study	Invasive medical procedure	Nursing and medication management	Drainage fluid color/volume
Hospital day 17; postoperative day 8	Body temperature 38.4˚C				Light red fluid
Hospital day 18; postoperative day 9	The patient presented with lower abdominal pain and hematemesis		Superior mesenteric artery angiography with embolization		Turbid bloody fluid/250 ml
Hospital day 19; post-intervention day 1	CRP, 83.4 mg/l; TP, 56.7 g/l; ALB, 35.3 g/l			Treatment was continued without modification	Dark red fluid/530 ml
Hospital day 21; post-intervention day 3				Level II nursing care, anti-infective therapy, somatostatin therapy, acid-suppressive therapy with gastric mucosal protection, blood transfusion, fluid replacement therapy and nutritional support	Brown drainage fluid/200 ml
Hospital day 24; post-intervention day 6	CRP, 61.9 mg/l; TP, 62.7 g/l; ALB, 38.4 g/l;			Treatment was continued without modification	
Discharge					Bilious fluid/50-200 ml
~2 weeks after discharge	-			-	Intermittent bilious fluid/5-50 ml
~1 month after discharge		Abdominal drainage catheter contrast study	Abdominal drainage catheter removal	-	Intermittent bilious fluid/ 5-10 ml
~5 weeks after discharge		Upper abdominal contrast-enhanced CT		-	

CRP, C-reactive protein; TP, total protein; ALB, albumin; CT, computed tomography; MRI, magnetic resonance imaging; IV, intravenous.

infection control, suppression of gastrointestinal secretions and acid suppression.

The patient underwent abdominal CT and contrast studies to evaluate postoperative complications and fistula healing. Although no definite intra-abdominal abscess was identified on imaging, recurrent fever and persistently elevated CRP levels suggested a localized postoperative inflammatory or infectious process. Sequential broad-spectrum antimicrobial therapy was therefore administered during the treatment course, including cefotiam, piperacillin/tazobactam, cefoperazone/sulbactam and cefuroxime. At the end of August 2021, a small bowel contrast study demonstrated the unobstructed passage of contrast medium through the small intestine. After 36 days of bowel rest, enteral nutrition was gradually resumed. The patient was discharged after 36 days of hospitalization at the tertiary referral hospital. At the outpatient follow-up visit at the end of September 2021, the abdominal drain continued to intermittently discharge bilious fluid, with a daily output of 5-50 ml. In October 2021, a contrast study via the abdominal drainage catheter demonstrated no passage of contrast medium into the intestinal lumen and no communication between the drainage catheter and the bowel, confirming fistula closure. The abdominal drainage catheter was subsequently removed. During 4.5 years of postoperative follow-up, no recurrence was observed, and serial CT examinations demonstrated stable postoperative findings (Fig. 3).

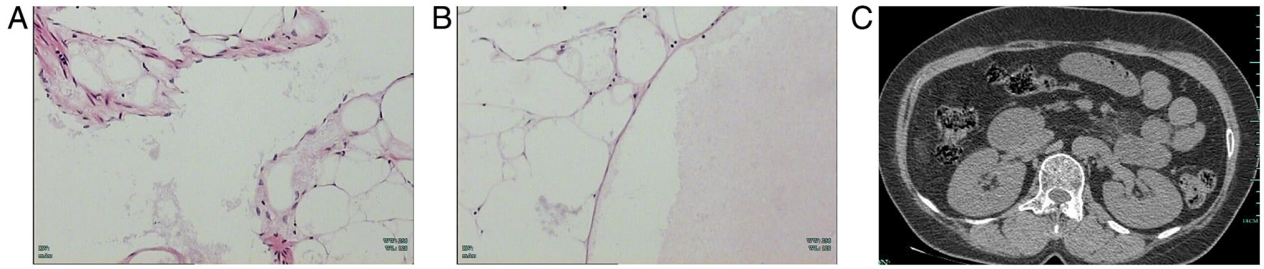

Figure 3. Histopathological findings of mesenteric cavernous lymphangioma. (A) H&E-stained section showing dilated lymphatic channels within mature adipose tissue and mild stromal lymphocytic infiltration (original magnification, x100). (B) H&E-stained section demonstrating a dilated lymphatic channel lined by flattened endothelial cells and containing lymphatic fluid, surrounded by mature adipose tissue (original magnification, x100). (C) Follow-up computed tomography findings 4 years after surgery. Follow-up computed tomography scan performed in November 2024, demonstrating no evidence of local recurrence or residual lesion H&E, hematoxylin and eosin.

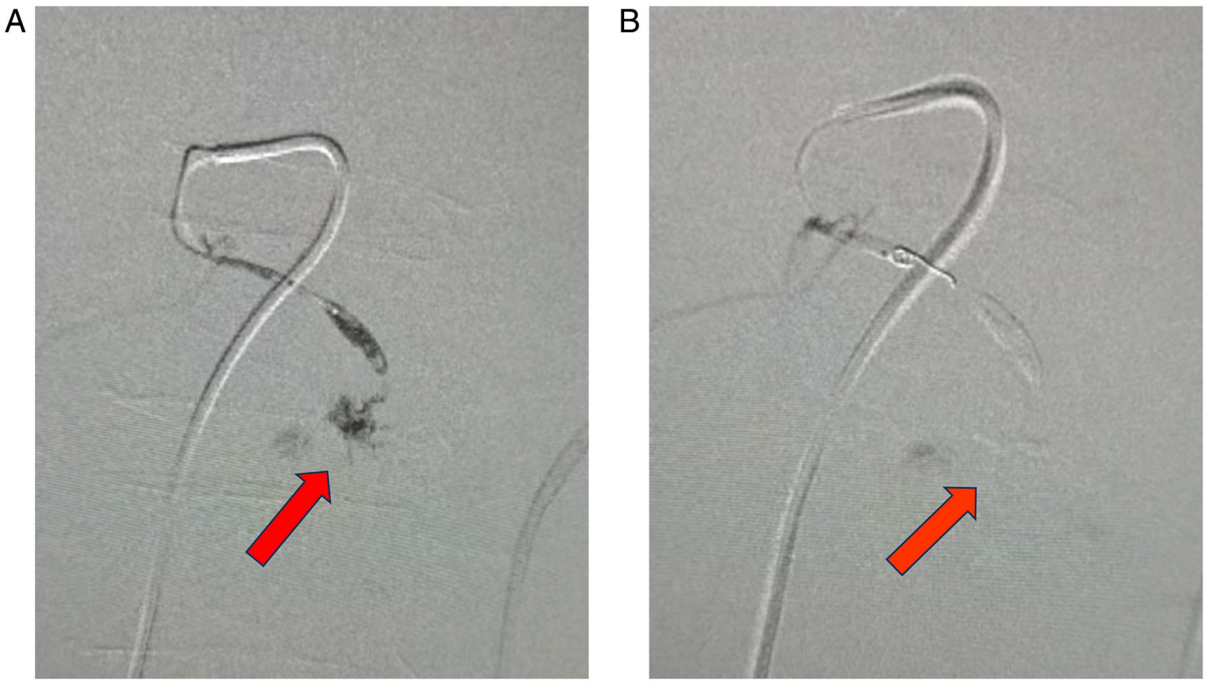

Figure 4. Digital subtraction angiography findings before and after embolization. (A) DSA demonstrating contrast extravasation from a branch of the superior mesenteric artery, indicating active hemorrhage (red arrow). (B) Post-embolization DSA demonstrating successful microcoil embolization with complete disappearance of contrast extravasation (red arrow). DSA, digital subtraction angiography.

Discussion

MCL usually presents with an insidious onset; the most common presenting symptom is abdominal pain, followed by abdominal distension (6). However, its clinical manifestations are non-specific. Xu *et al* (11) reported a case of MCL presenting with chronic gastrointestinal hemorrhage and persistent anemia. The patient lost ~10 kg over the course of 1 year and underwent two esophagogastroduodenoscopies and one colonoscopy; however, none of these procedures identified the source of the bleeding. Consequently, the patient required monthly blood transfusions. Given its clinical spectrum, which ranges from asymptomatic lesions detected incidentally to acute abdominal emergencies, the true prevalence of MCL is likely underestimated due to misdiagnosis and underdiagnosis (4,5).

A systematic search was performed in the following electronic databases: PubMed (https://pubmed.ncbi.nlm.nih.gov/), the China National Knowledge Infrastructure (CNKI) (https://www.cnki.net/) and the Chinese Biomedical Literature Database (https://www.sinomed.ac.cn/). The search included case reports and case series of mesenteric cavernous lymphangioma (MCL) published up to November 2025. The search strategy included combinations of the following keywords: 'mesenteric cavernous lymphangioma', 'cavernous lymphangioma', 'mesenteric lymphangioma', 'mesenteric tumor', 'lymphatic malformation' and 'lymphangioma'. The reference lists of the included studies were also manually reviewed to identify additional eligible publications.

The inclusion criteria were as follows: i) Cases with a definitive pathological diagnosis of MCL; and ii) studies reporting relevant clinical information, including demographic characteristics, clinical manifestations, imaging findings and treatment strategies. The exclusion criteria were as follows: i) Studies without pathological confirmation of

MCL; ii) lymphangiomas originating from sites other than the mesentery; iii) duplicate publications; and iv) studies lacking sufficient clinical, imaging or treatment-related information. After excluding duplicate cases, 26 cases identified from the literature (2,7-26) and 1 case from Zhuji People's Hospital (Zhuji, China) were included, yielding a total of 27 cases for descriptive analysis. The majority of patients were of East Asian ethnicity (70.4%), with a male-to-female ratio of 1.7:1. The patients ranged in age from 3.5 to 71 years, and only 3 (11.1%) were younger than 18 years. A total of 25 patients (92.6%) were symptomatic, with abdominal pain (63.0%) and abdominal distension (25.9%) being the most common presenting symptoms. A total of 4 patients (14.8%) had decreased serum albumin and total protein levels at the time of hospital admission after developing clinical symptoms (Table II). The small bowel mesentery was the most common site of involvement (77.8%), and lesions frequently extended into adjacent bowel segments (77.8%). Detailed demographic and clinical characteristics are presented in Table II.

Overall, 23 patients underwent CT and 4 underwent MRI. On contrast-enhanced imaging, most lesions demonstrated either no enhancement or enhancement confined to the internal septations. The vascular traversal sign was identified on contrast-enhanced imaging in 11 patients (40.7%). On pathological examination, chylous fluid was the most common cystic fluid content, occurring in 59.3% of cases. Detailed imaging and pathological characteristics are summarized in Table III.

All patients underwent surgical resection. Overall postoperative outcomes were favorable; however, 1 patient died on POD6 from a pulmonary embolism. In this cohort, 1 patient (the present case) developed a postoperative intestinal fistula. The serum tumor markers of the 6 patients were within the normal range Notably, 4 patients exhibited progressively decreasing serum albumin and total protein levels (Table III). Whether these laboratory abnormalities are directly associated with MCL remains unclear and warrants further investigation.

Histologically, MCL is characterized by proliferating, disorganized lymphatic channels embedded within connective tissue, containing serous fluid, blood or chylous fluid, with chylous fluid being the most common component. This finding is considered to result from communication between the abnormal lymphatic channels of cavernous lymphangiomas and the adjacent normal lymphatic system, allowing chylous fluid to leak into cystic spaces (6). Unlike cystic lymphangioma, cavernous lymphangioma often infiltrates the intestinal wall despite its benign histological nature. This infiltrative growth pattern may cause atrophy of the surrounding tissues and subsequent functional impairment, resulting in hemorrhage, necrosis, and acute inflammatory changes involving the mesentery and intestine (3,7,8,10).

From an imaging perspective, CT is generally the first-line imaging modality; however, it may have limited ability to delineate the cystic components of MCL, particularly when the lesion is predominantly microcystic (3,12). By contrast, MRI offers superior soft-tissue contrast and greater sensitivity to tissue water content, providing improved lesion characterization compared with CT. In predominantly microcystic lesions, CT may misinterpret the lesion as a solid mass, whereas MRI typically demonstrates homogeneous high signal intensity on T2WI, with no enhancement or only mild septal enhancement after contrast administration. Differences in signal intensity on T1WI and T2WI may also help characterize the composition of the cystic contents. MRI also facilitates assessment of bowel wall involvement. In some cases, multiple submucosal cystic lesions can be identified, further increasing diagnostic confidence (13).

Based on the present case and the literature review, we propose that the combination of 'no enhancement or only septal enhancement' and the 'vascular traversal sign' may represent a characteristic imaging feature of MCL. This imaging appearance is attributable to the characteristic histopathological architecture of MCL, which comprises clusters of dilated cavernous lymphatic channels embedded within lymphoid stroma. These dilated lymphatic spaces surround or are traversed by normal mesenteric vessels, rather than

Table II. Demographic and clinical characteristics of 27 patients with mesenteric cavernous lymphangiomata.

Characteristics	Value
Age, years	
Mean	39
Range	3.5-71
F/M ratio, n	1:1.7
Ethnicity, n	
East Asian	19
White	8
Clinical presentation, %	
Asymptomatic	7.4
Symptomatic	92.6
Symptoms, %	
Abdominal pain	63.0
Abdominal distension	25.9
Increased abdominal girth	14.8
Self-palpable mass	29.6
Nausea	7.4
Vomiting	11.1
Poor appetite	3.7
Diarrhea	7.4
Back pain	3.7
Constipation	7.4
Bloody stool	14.8
Fever	7.4
Difficulty breathing	7.4
Difficulty in urination	11.1
Weight loss	11.1
Site of onset, %	
Mesentery of the small intestine	77.8
Mesentery of the colon	7.4
Involvement of surrounding intestines	77.8
Other complications of abdominal organs	7.4

F, female; M, male.

Table III. Summary of imaging findings, pathological features, treatment and outcomes in 27 patients with mesenteric cavernous lymphangiomata.

Parameter	Variable
Inspection method, n	
CT	23
Low density	11
Mixed density or mixed echo	11
Solidity	1
MRI	4
TIWI low-signal and T2WI hyperintensity	4
Strengthening method, n	
No reinforcement	7
Mild reinforcement	1
Moderate reinforcement	1
Partition sample strengthening	2
Blood vessel traversing, n	
Intralesional vascular traversing	11
Not mentioned	16
Content of the cyst, n (%)	
Serous	1 (3.7)
Chylous	16 (59.3)
Hemorrhagic	4 (14.8)
Hybridity	3 (11.1)
Not mentioned	3 (11.1)
Laboratory examination, n	
Tumor marker-negative	6
CA125 increased	1
Albumin decreased; total protein decreased	4
Treatment, n	
Surgical resection	27
Follow-up status, n	
Stable	22
Death	1 (day 6 pulmonary embolism)
Not mentioned	4

CT, computed tomography; MRI, magnetic resonance imaging; WI, weighted imaging; CA, cancer antigen.

containing abundant neovascularization. Consequently, the lesion itself demonstrates little or no enhancement on contrast-enhanced imaging (3,7). These imaging features may help distinguish MCL from hypervascular tumors and liposarcomas, both of which can present as low-attenuation masses on CT. Furthermore, the 2024 Chinese Society of Clinical Oncology (CSCO) Clinical Practice Guidelines recommend that positron emission tomography (PET)/CT may serve as an adjunctive imaging modality for differentiating MCL from malignant mesenteric tumors by assessing glucose metabolism and the extent of systemic involvement (27). However, PET/CT findings were not reported in either the cases included in the present study or the published cases identified in the literature review.

Complete surgical resection remains the standard treatment for MCL; however, preoperative misdiagnosis may result in unnecessarily extensive surgery. In the present case, the preoperative diagnosis of suspected liposarcoma led to an extensive surgical resection, which was complicated by a postoperative intestinal fistula and required >2 months of conservative management. Previous studies have reported that incomplete resection is associated with an increased risk of local recurrence (14). Although complete resection remains the optimal treatment goal, residual disease may remain stable over long-term follow-up when complete excision is not feasible (2,28). In the present case, the main tumor mass was completely resected. Postoperatively, persistent fluid accumulation was observed at the mesenteric root. This gradually resolved during follow-up, and the residual lesion has remained radiologically stable upon follow-up. Accurate preoperative recognition of the characteristic imaging features of MCL may facilitate a more precise and limited surgical resection, thereby reducing the risk of postoperative complications.

The present study has several limitations. First, it is a retrospective analysis based on published case reports and case series. Second, not all relevant data, including clinical presentation, imaging findings, gross pathological findings, histopathological features and immunohistochemical results, were comprehensively reported in the included studies.

In conclusion, although MCL is a rare entity, it exhibits characteristic imaging features that may facilitate its diagnosis. MCL should be considered when CT or MRI demonstrates a well-defined mesenteric mass with locally infiltrative growth, no enhancement or only septal enhancement on contrast-enhanced imaging, and the vascular traversal sign, particularly in patients presenting with non-specific abdominal pain or hypoproteinemia. Contrast-enhanced abdominal MRI is recommended to further characterize the lesion, evaluate the extent of disease and facilitate preoperative surgical planning.

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Availability of data and materials

The data generated in the present study may be requested from the corresponding author.

Authors' contributions

ZZ and EC designed the study and participated in the literature search. ZZ and TZ collected, reviewed and analyzed the medical images, contributed to the literature review, and prepared the draft manuscript. JF and TZ critically revised the manuscript for important intellectual content and provided

general supervision. ZZ, EC, JF, and LG were instrumental in revising the manuscript, participating in data analysis and providing treatment recommendations for the patient. TZ and LG confirm the authenticity of all the raw data. All authors read and approved the final version of the manuscript.

Ethics approval and consent to participate

The study was conducted in accordance with the Declaration of Helsinki. The present study was approved by the Ethics Committee of Zhuji People's Hospital [Zhuji, China; approval no. (2026) MedEthics no. (0120)].

Patient consent for publication

Written consent for publication was obtained from the patient.

Competing interests

The authors declare that they have no competing interests.

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