



An Unusual Case of Partially Thrombosed Right Hepatic Artery Pseudoaneurysm Following Laparoscopic Cholecystectomy: A Case Report.

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Abstract

Background:

Laparoscopic cholecystectomy in most cases does not cause vascular complications, but when it does, these can be serious and life-threatening. Hepatic artery pseudoaneurysm is a rare iatrogenic complication caused by thermal injury, clip erosion, vascular trauma, or infection. Early diagnosis prevents rupture, hemobilia, biliary obstruction, and hemorrhagic shock.

Case Presentation:

A 67-year-old female patient came to hospital with a persistent abdominal pain and a lump palpable in the right upper quadrant, four weeks after undergoing a Laparoscopic cholecystectomy for cholelithiasis at an outside hospital. She did not have any of the following: jaundice, gastrointestinal bleeding, fever, or hemodynamic instability. Ultrasonography showed anechoic collections in the gall bladder fossa which was approximately 71.2 × 40 × 35 mm with the presence of peripheral mural thrombus in the collection. Color Doppler showed turbulent arterial flow with a characteristic “yin-yang” sign, which showed a partially thrombosed pseudoaneurysm. Contrast-enhanced computed tomography (CECT) revealed a focal outpouching with progressive enhancement in the arterial and venous phase that showed contrast material. Peripheral thrombus was depicted by a surrounding non-enhancing component. The lesion was located outside the liver above the surgical clips. MRI and angiography confirmed a partially thrombosed right hepatic artery pseudoaneurysm compressing the bile duct. The patient was successfully treated with coil embolization, with complete resolution on follow-up ultrasound.

Conclusion:

Post laparoscopic cholecystectomy pseudoaneurysm of the right hepatic artery is a rare, but serious complication. Doppler ultrasonography is a useful first-line diagnostic tool, and computed tomography angiography, MRI, MRCP and digital subtraction angiography are useful for detailed characterization. Quick recognition and endovascular embolisation provide excellent clinical results and reduce catastrophic hemorrhagic complications.

Keywords: Hepatic artery pseudoaneurysm; Laparoscopic cholecystectomy; Color Doppler ultrasound; CT (Computed Tomography) angiography; MRCP (Magnetic Resonance Cholangiopancreatography); Digital subtraction angiography; Endovascular embolization.

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INTRODUCTION

Because of its low invasiveness, low pain, short hospital stay, rapid recovery, and many advantages, laparoscopic cholecystectomy is the preferred treatment for symptomatic cholelithiasis and other benign gallbladder diseases. The

procedure itself is safe, but there is a risk of complications in about 2-6% of the cases, such as the possible damage of the bile ducts, bleeding, infections, stones remaining in the gallbladder, and damage to blood vessels. These include relatively uncommon vascular complications which can



have a high morbidity and mortality rate if not recognised early. Hepatic artery pseudoaneurysm is one of the rarest vascular complications after laparoscopic cholecystectomy and has been reported in fewer than 1% of vascular injuries after cholecystectomy. [1]

Unlike true aneurysms, pseudoaneurysms have only 2 layers of the arterial wall. Rather, it is lost through a defect in the wall of the vessel, where it is kept up by the surrounding tissues and forms a pulsating hematoma, which retains a connection with the parent artery. After laparoscopic cholecystectomy, the causes of pseudoaneurysm include direct vessel damage during dissection, thermal damage from electrocautery, damage through surgical clips, postoperative infection, or isolated inflammation within the surgical bed/operating field. The right hepatic artery is most often involved, due to its close proximity to Calot's triangle and the gall bladder fossa, where it is most likely to be damaged during surgical manipulation. [4]

The clinical signs and symptoms of HA pseudoaneurysm may be nonspecific and vague and are often delayed in diagnosis. Patients can present with abdominal pain, palpable abdominal mass, gastrointestinal bleeding, hemobilia, jaundice, and anemia, or hemodynamic instability due to rupture. Quincke's triad of right upper quadrant pain, jaundice and gastrointestinal bleeding is classically associated with hemobilia, but only seen in a minority of patients. Thus, imaging is a critical part of establishing the diagnosis.

Because of its availability, non-invasive nature and ability to show characteristic vascular flow patterns, ultrasonography with color Doppler is often the modality of choice as the first-line imaging modality. The classic 'yin-yang' sign shows bidirectional turbulent flow within the pseudoaneurysm sac and is thought to be very suggestive of the diagnosis. The computed tomography angiography offers excellent anatomical detail of the pseudoaneurysm, detection of associated thrombus, assessment of surrounding structures and pre-procedural planning. Magnetic resonance imaging and magnetic resonance cholangiopancreatography also provide valuable insights into thrombotic components, exclude biliary leakage and obstruction, and characterize biliary involvement. Digital subtraction angiography is still the gold standard diagnostic modality as this enables simultaneous confirmation and therapeutic intervention. [7] Because of its minimal invasiveness and the high success rate, endovascular therapy is now the preferred treatment for HA pseudoaneurysms. In hemodynamically stable patients, coiling, covering stents, and thrombin injection have largely

replaced open surgical repair. Timely diagnosis and treatment is crucial to avoid rupture, massive bleeding, biliary complications and death. [8]

This report an unusual case of a large partially thrombosed extrahepatic right hepatic artery pseudoaneurysm which developed 4 weeks after laparoscopic cholecystectomy. The case highlights the complementary role of Doppler ultrasonography, multidetector CT angiography, MRI, MRCP, and digital subtraction angiography in diagnosis and demonstrates the effectiveness of endovascular coil embolization in achieving successful treatment. The objective of this study is to present a rare case of hepatic artery pseudoaneurysm following laparoscopic cholecystectomy, highlighting its imaging findings, diagnostic approach, endovascular management, and the importance of early recognition to prevent life-threatening complications.

CASE DESCRIPTION

A 67-year-old female presented to the Department of Radiodiagnosis with complaints of persistent right upper abdominal pain and gradual increase in the palpable lump in the right hypochondrium for about 4 weeks after the operation of laparoscopy cholecystectomy. The patient had been treated with laparoscopic cholecystectomy at another hospital for symptomatic cholelithiasis [2]. The immediate postoperative period was reported to be uneventful and no intraoperative complications were reported. Over the following weeks she had increased pain and discomfort in the right upper quadrant with a palpable mass. No fever, jaundice, gastrointestinal bleeding, hematemesis, melena or hemodynamic instability could be found in the history.

On clinical examination, the patient was hemodynamically stable. The abdomen was mildly tender and had a palpable mass in the right upper quadrant. Laboratory tests showed normal liver function tests, normal coagulation profile and no significant anemia. The serum bilirubin was normal. No biochemical evidence of biliary obstruction or cholangitis was found.

Abdominal ultrasonography was performed initially and showed a well-defined anechoic collection in the gall bladder fossa measuring about 71.2 × 40 × 35 mm. On color Doppler the lesion exhibited turbulent bidirectional flow in the arteries, with the typical "yin-yang" appearance characteristic of a vascular abnormality, with the maximum thickness of the peripheral wall being up to 14.3 mm. Arterial waveform characteristics were confirmed by spectral Doppler analysis and communication with the



hepatic arterial system was confirmed. Intrahepatic biliary radical dilatation was not found. From these findings a provisional diagnosis of a partially thrombosed HAPseudoAneurysm was made. [Fig 1 and 2]

Abdominal triple-phase computed tomography (CECT) was done for further characterization. Initial arterial phase imaging showed a focal outpouching in the region of the gallbladder fossa with contrast filling the outpouching from the right hepatic artery. During late arterial and portal venous phases, progressive opacification of lesion was noted. Peripheral enhancing thrombus was noted around the enhancing lumen in a large peripheral non-enhancing component. The pseudoaneurysm was located above the metallic surgical clips installed at the surgical bed. The lesion was mainly extrahepatic and caused mild compression of the common bile duct medially, while abutting the neighbouring portal venous structures laterally. There was no contrast extravasation, biliary leak, intrahepatic biliary dilatation or portal vein thrombosis noted. The pseudoaneurysm's source was clearly seen from the right hepatic artery by three-dimensional volume-rendered reconstruction. [Fig 3 and 4]

A subsequent magnetic resonance imaging (MRI) scan was conducted to further characterize the tissues. The hypointense patent aneurysmal lumen was hyperintense on T2-weighted images. The adjacent thrombosed component showed a variable intensity, which is indicative of organizing thrombus. Fat suppressed sequences ruled out the presence of macroscopic fat in the lesion. Balanced turbo field echo images further confirmed the vascularity of the

aneurysmal sac. The post cholecystectomy status was confirmed by Magnetic resonance cholangiopancreatography, which also showed that the common proximal bile duct was compressed laterally without bile duct obstruction or intrahepatic ductal radical dilatation. [Fig 5]

Multimodality imaging led to a diagnosis of a large extrahepatic right hepatic artery pseudoaneurysm (RHA PseudoAneurysm) that developed following recent laparoscopic cholecystectomy. Subsequent DSA confirmed a pseudoaneurysm of the right hepatic artery. After multidisciplinary discussion with a radiologist, interventional radiologist and hepatobiliary surgeon, endovascular treatment was discussed. [Fig 6]

Trans-femoral angiographic coil embolization was performed successfully in the patient. A right hepatic artery was selectively catheterized and coils placed inside the pseudoaneurysm neck. Post embolization angiography showed the pseudoaneurysm was totally excluded from the arterial circulation and major hepatic perfusion was not compromised. There were no problems during the procedure.

Post procedural period was clinically stable. A follow-up assessment showed that the abdomen pain was completely resolved and the palpable abdominal swelling was slowly reduced. Recurrent bleeding, biliary obstruction, hepatic ischemia and aneurysm recanalization were not seen. The patient was discharged satisfactory and continued to be asymptomatic on follow-up visits.



FIGURE 1: 2D Gray scale images representing anechoic collection measuring upto 71.2x40x35 mm with peripheral thickened wall measuring up to 14.3 mm in GB fossa region.



FIGURE 2: 2D Gray scale doppler and pulse wave doppler shows an anechoic collection with internal arterial blood flow showing turbulent flow on color doppler (ying yang) and communication with hepatic artery likely pseudo aneurysm.



Figure 3.0: Axial CECT image in early arterial phase at the level of aorta showing a contrast filled outpouching in GB fossa region possibly arising from right hepatic artery and surrounding non enhancing area representing thrombus. Also note the metal artifact in form of surgical clip placement visualised at operative bed. Incidental finding – Left simple renal cortical cyst.

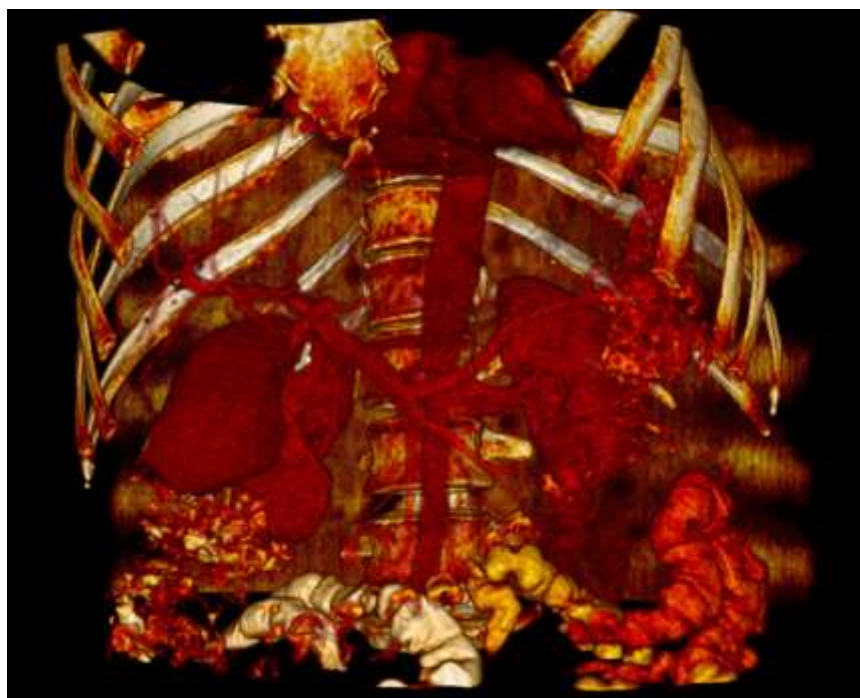


FIGURE 4: 3d VR image showing aneurysm originating from the right hepatic artery with surgical clip at operative bed.

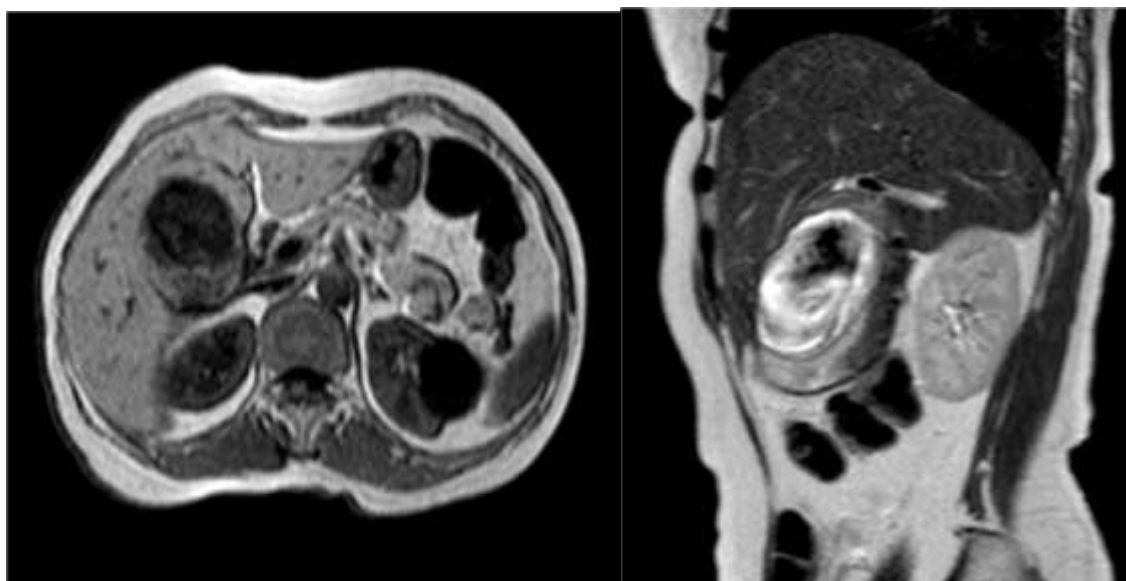


FIGURE 5: (a) On Axial T1W image shows a hypointense area of aneurysm with mixed intensity thrombus surrounding it. (b) On sagittal T2W image shows hyperintense area of aneurysm with mixed intensity surrounding thrombus involving hepatic and extrahepatic GB fossa region.

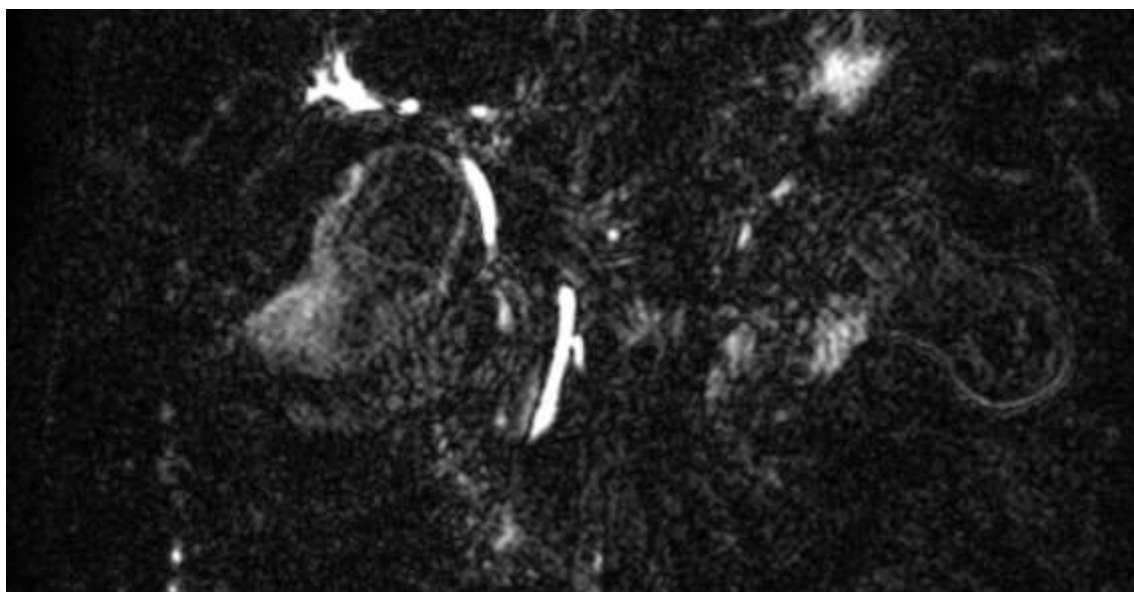




FIGURE 6: 3D MRCP (Magnetic resonance cholangiopancreatography shows Aneurysm compressing common bile duct laterally without any biliary radical dilatation.

DISCUSSION

In the present case, the typical presentation, namely, 4 weeks after laparoscopic cholecystectomy, was demonstrated. It is rare that such occurrences are documented and that they are believed to be due to progressive weakening of the arterial walls, not to immediate disruption of the blood vessels during surgery. The right hepatic artery is the most frequently injured vessel due to its close proximity to Calot's triangle and the cystic artery. Injury to the artery may be progressive to pseudoaneurysms which, as in our patient, occur near the surgical clips.

The clinical symptoms and signs of HAP are often non-specific and non-constant, causing the diagnosis to be difficult. Symptoms include abdominal pain, jaundice, GI bleeding, anemia or hemodynamic instability. Quincke's triad (abdominal pain, jaundice and hemobilia) is classic, but only seen in a minority of patients. Thus, it is of utmost importance for the clinician to have a high index of suspicion in any patient with abdominal complaints that do not have an apparent source after hepatobiliary surgery. The clinical presentation in the present case was abdominal pain and a palpable right upper quadrant mass in the absence of jaundice or gastrointestinal bleeding, underscoring the wide spectrum of clinical manifestations.

Imaging is a key component in diagnosis. Doppler ultrasonography is often the first test to be performed because it is readily available, quick and non-invasive. The characteristic to-and-fro waveform and the well-known "yin-yang" appearance of the color Doppler are thought to be very suggestive of pseudoaneurysm, which is due to turbulent blood flow bidirectional movement inside of the aneurysmal sac. Mahmoud et al. noted that these Doppler findings were extremely useful in the differentiation of pseudoaneurysms from other cystic lesions and postoperative collections [14]. In the current case, Doppler ultrasound was the first indication that led to a further vascular evaluation.

Computed tomography angiography (CTA) continues to be one of the most useful imaging techniques for diagnosis and treatment planning. CTA offers a high spatial resolution and allows for a large amount of information such as lesion size, location, vascular source and associated thrombosis to be characterized. Cacciatore et al. showed that multiphasic CTA can accurately delineate the arterial anatomy and collateral circulation, which can help in planning

endovascular treatment of pseudoaneurysms of the hepatic artery. In our patient, triple-phase computed tomography (TPCT) clearly showed progressive contrast filling of the pseudoaneurysm lumen and the surrounding thrombosed component.

There are also other advantages of MRI and magnetic resonance cholangiopancreatography, such as excellent soft-tissue characterization and detailed analysis of the biliary system. With signal intensity characteristics, MRI could reasonably distinguish patent vascular channels from organized thrombus, and could help identify adjacent vascular/biliary relationships, Chadha and Ahuja reported. In this case, the MRI findings were similar to those previously reported in pseudoaneurysm, and MRCP was a good method for demonstrating the compression of the common bile duct without evidence of an obstruction [11]. Hepatic artery pseudoaneurysm should be considered in patients with persistent postoperative symptoms following laparoscopic cholecystectomy. Early imaging and prompt endovascular treatment can prevent life-threatening complications and improve clinical outcomes.

Hemobilia continues to be one of the most serious complications of hepatic artery pseudoaneurysm. Advanced cross-sectional imaging has been stressed as a means to early recognition of vascular causes of hemobilia and prevention of catastrophic hemorrhage in recent reviews. Campos Carmona et al. emphasized the importance of the CTA and angiography in the modern diagnostic approach because it not only helps to diagnose the disease but also in planning the therapeutic approach. Hemobilia did not occur in our patient; however, it should be kept in mind in patients with a prompt diagnosis and treatment.

Although there have been many advances in non-invasive imaging, digital subtraction angiography (DSA) remains the standard method for definitive diagnosis. Angiography allows accurate visualisation of the vascular lesion, evaluation of collateral circulation and an opportunity for therapeutic intervention at the same time. However, the authors pointed out that DSA will still be vital in the treatment of visceral artery aneurysms and pseudoaneurysms due to its diagnostic accuracy and therapeutic efficacy [15]. In the present case, the diagnosis was confirmed by angiography and treatment could be immediately carried out.



In the past, open surgical repair had been the treatment of choice for hepatic artery aneurysms and pseudoaneurysms. But surgery has a high morbidity, longer hospital stays and possible hepatic ischemia. Abbas et al. reported that in unstable patients, it may be necessary to intervene surgically but with a high risk of postoperative complications. In most clinically stable patients, therefore, minimally invasive endovascular therapy has become the treatment modality of choice [8]. Generalizability is the extent to which the findings of a study can be applied or extended to other populations, settings, situations, or time periods beyond the specific sample that was studied. Although based on a single patient, this case emphasizes the value of multimodal imaging and timely endovascular intervention in managing postoperative hepatic artery pseudoaneurysm [6]. These findings may inform the evaluation and management of similar rare vascular complications after laparoscopic cholecystectomy; however, broader applicability requires confirmation through larger clinical studies.

The treatment of pseudoaneurysm of a visceral artery has been revolutionized by the use of endovascular therapy. Embolization, covered stent placement and thrombin injection are techniques which have very high technical success rates and have a low procedural morbidity. Tulsyan et al reported that endovascular treatment of visceral artery aneurysms and pseudoaneurysms had excellent results, with high rates of aneurysm exclusion, and fewer procedural complications than surgical treatment. In the same way, Pyra et al. demonstrated the long-term effectiveness and safety of endovascular embolization procedures, concluding that they had an enduring effect and low recurrence rates [16]. Awareness of this rare postoperative complication is important for early diagnosis and management. Also, prompt intervention can reduce the risk of rupture, hemorrhage, and other serious complications.

In the present case, the trans-femoral coil embolization was performed with good success, which led to the complete exclusion of the pseudoaneurysm, while maintaining sufficient hepatic arterial flow [9]. There was no recurrence or complication after the procedure in the follow-up. These results are further evidence in favour of endovascular therapy as the preferred option for the treatment of haemodynamically stable HAP [10].

Important lessons from this case. Laparoscopic cholecystectomy should evoke a suspicion of delayed vascular complications if abdominal pain or a palpable abdominal mass persists. Second, multimodality imaging with Doppler ultrasonography, CT angiography, MRI,

MRCP and angiography allows a thorough evaluation of the lesions and enables optimal treatment planning. Last but not least, early diagnosis and early endovascular management are essential to avoid rupture, hemobilia, biliary obstruction, and even fatal hemorrhage while obtaining satisfactory clinical results [13]. This study was conducted using routine institutional resources and received no external financial support.

Data Availability

All data supporting the findings of this case report are included within the article. No additional datasets were generated or analyzed. Patient confidentiality has been maintained, and no identifiable information has been disclosed.

Limitations: This study is limited by its single-patient case report design, which restricts the generalizability of the findings. The absence of long-term clinical follow-up and comparative data limits assessment of treatment outcomes. Further multicenter studies with larger patient populations are required to validate the diagnostic and therapeutic observations reported in this case.

CONCLUSION

Delayed complications of laparoscopic cholecystectomy are rare but serious, such as right hepatic artery pseudoaneurysm. In the current case, it is crucial to have a high clinical index of suspicion in patients with persistent abdominal pain and a palpable mass of the right upper quadrant following hepatobiliary surgery. Doppler ultrasonography was useful for the initial diagnosis due to the presence of a characteristic “yin-yang” sign, and CT angiography, MRI, MRCP, and digital subtraction angiography helped to precisely characterize the lesions and aid treatment planning. Endovascular coil embolization was a safe, minimally invasive and highly effective therapeutic option. Prompt diagnosis and intervention are critical to avoiding rupture, haemobilia, biliary obstruction and eventual life-threatening haemorrhagic complications.

REFERENCES

1. Deziel DJ, Millikan KW, Economou SG, Doolas A, Ko ST, Airan MC. Complications of laparoscopic cholecystectomy: a national survey of 77604 cases. *Am J Surg.* 1993;165(1):9-14. doi:10.1016/S0002-9610(05)80397-6.



2. Stewart L, Robinson TN, Lee CM, Liu K, Whang K, Way LW. Right hepatic artery injury associated with laparoscopic bile duct injury: incidence, mechanism, and consequences. *Journal of Gastrointestinal Surgery*. 2004;8(5):523-531. <https://doi.org/10.1016/j.gassur.2004.02.010>
3. Christensen T, Matsuoka L, Heestand G, Palmer S, Mateo R, Genyk Y, Selby R, Sher L. Iatrogenic pseudoaneurysms of the extrahepatic arterial vasculature: management and outcome. *HPB (Oxford)*. 2006;8(6):458-64. doi: 10.1080/13651820600839993.
4. Machado NO. Biliary complications post laparoscopic cholecystectomy: mechanism, preventive measures and management. *Diagn Ther Endosc*. 2011;2011:967017. doi:10.1155/2011/967017.
5. Lee H, Han IW, Choi JE, Lee HK. Surgical risk calculator development for postoperative outcomes after laparoscopic cholecystectomy: a multicenter prospective cohort study. *Ann Surg Treat Res*. 2025 Jun;108(6):352-361. doi: 10.4174/astr.2025.108.6.352.
6. Machado NO, Al-Zadjali A, Kakaria AK, Younus S, Rahim MA, Al-Sukaiti R. Hepatic or Cystic Artery Pseudoaneurysms Following a Laparoscopic Cholecystectomy: Literature review of aetiopathogenesis, presentation, diagnosis and management. *Sultan Qaboos Univ Med J*. 2017 May;17(2):e135-e146. doi: 10.18295/squmj.2016.17.02.002. Epub 2017 Jun 20. PMID: 28690884; PMCID: PMC5488813.
7. Cordova AC, Sumpio BE. Visceral Artery Aneurysms and Pseudoaneurysms—Should They All be Managed by Endovascular Techniques? *Ann Vasc Dis*. 2013;6(4):687-93. doi: 10.3400/avd.ra.13-00045. Epub 2013 Nov 15. PMID: 24386016; PMCID: PMC3866356.
8. Casazza I, Guglietta MA, Argento G. Magnetic resonance cholangiopancreatography in the diagnosis of haemobilia. *Case Rep Radiol*. 2013;2013:792109. doi: 10.1155/2013/792109. Epub 2013 Dec 22. PMID: 24455379; PMCID: PMC3881441.
9. Mahmoud MZ, Al-Saadi M, Abuderman A, Alzimami KS, Alkhorayef M, Almagli B, Sulieman A. "To-and-fro" waveform in the diagnosis of arterial pseudoaneurysms. *World J Radiol*. 2015 May 28;7(5):89-99. doi: 10.4329/wjr.v7.i5.89. PMID: 26029351; PMCID: PMC4444605.
10. Cacciatore J, Gonzalez S, Briley K, Ali S, Molano MDPB, Viradia N. Hepatic artery pseudoaneurysms: Two cases, 2 novel solutions, and a brief review of current treatments. *Radiol Case Rep*. 2025 Nov 13;21(2):526-531. doi: 10.1016/j.radcr.2025.10.068. PMID: 41323178; PMCID: PMC12661396.
11. Chadha M, Ahuja C. Visceral artery aneurysms: diagnosis and percutaneous management. *Semin Intervent Radiol*. 2009 Sep;26(3):196-206. doi: 10.1055/s-0029-1225670. PMID: 21326564; PMCID: PMC3036493.
12. Campos Carmona T, Teran Hooper C, Abbagoni V, et al. (November 04, 2024) Hemobilia: A Narrative Review of Current Diagnostic Techniques and Emerging Management Strategies. *Cureus* 16(11): e73009. DOI 10.7759/cureus.73009
13. Loffroy R, Favelier S, Pottecher P, Genson PY, Estivalet L, Gehin S, Cercueil JP, Krausé D. Endovascular management of visceral artery aneurysms: When to watch, when to intervene? *World J Radiol*. 2015 Jul 28;7(7):143-8. doi: 10.4329/wjr.v7.i7.143.
14. Abbas MA, Fowl RJ, Stone WM, Panneton JM, Oldenburg WA, Bower TC. Hepatic artery aneurysm: factors predicting complications. *Journal of Vascular Surgery*. 2003;38(1):41-45. [https://doi.org/10.1016/S0741-5214\(03\)00090-9](https://doi.org/10.1016/S0741-5214(03)00090-9)
15. Tulsyan N, Kashyap V, Greenberg R et al. The endovascular management of visceral artery aneurysms and pseudoaneurysms. *Journal of Vascular Surgery*. 2007;45, 276-283. DOI: [10.1016/j.jvs.2006.10.049](https://doi.org/10.1016/j.jvs.2006.10.049)
16. Pyra K, Szmygin M, Sojka M, Drelich-Zbroja A, Jargiełło T. Endovascular treatment of visceral artery aneurysms and pseudoaneurysms - evaluation of efficacy and safety based on long-term results. *Pol Przegl Chir*. 2019;92(1):23-28. doi: 10.5604/01.3001.0013.5895.



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