SAS Journal of Surgery
Abbreviated Key Title: SAS J Surg
ISSN 2454-5104
Journal homepage: https://saspjournals.com/sasjs/

OPEN ACCESS

Hepatic Artery Dissection Revealed by Acute Pancreatitis: About A Case and Review of the Literature

Abdelouhab El marouni[1*], Manar Ghani[1], Assmae Maktoub[2], Karam Aziz[1], Ahmed Zerhouni[1], Tarik Souiki[1], Imane Toughrai[1], Khalid Mazaz[1], Karim Ibn Majdoub Hassani[1]

[1]Visceral surgery service, Hassan II university hospital, faculty of medicine and pharmacy of fez, sidi Mohamed Ben Abdullah University, fez, Morocco
[2]Hepato-Gastroenterology Department, Hassan II university medical center, Fez Morocco

DOI: 10.36347/SASJS.2019.v05i12.002 | **Received:** 30.11.2019 | **Accepted:** 07.12.2019 | **Published:** 16.12.2019

***Corresponding author:** Elmarouni Abdelouhab

Abstract **Case Report**

Spontaneous dissection of visceral arteries and more particularly of the hepatic artery is a rare event. We report an exceptional case of an isolated spontaneous dissection of the hepatic artery which occurred in a 64-year-old man seen in an emergency setting for suspected acute pancreatitis. Computed tomography enabled the diagnosis, revealing spontaneous isolated dissection of the common hepatic artery and its branches associated with aneurysmal dilation of the left hepatic artery, Treatment should prevent rupture and ameliorate cardiovascular risk. Surgery should be considered in patients with complications or those likely to have them in future. There is a paucity of data regarding hepatic artery dissection, limiting evidence for guiding management.

Keywords: Dissection; hepatic artery, CT angiography, vasculitis.

INTRODUCTION

The dissection of the digestive arteries is a rare entity since there are at present about fifty cases published in the literature since 1947 [1]. And almost There are (twenty cases) of dissection of hepatic artery [2, 3], the clinical diagnosis is difficult because the symptomatology is not very specific and can mislead the clinician. The severity of the disease is related to the occurrence of vascular rupture, ischemic or hemorrhagic complications requiring urgent treatment.

CASE REPORT

This is a 64-year-old man, chronic smoking, having as antecedent, hypertensive 8 years ago under treatment, operated 1 year ago for sigmoid polyp, with the histological examination, a dysplasia high grade required surveillance, admitted to emergency for abdominal pain of epigastric seat, radiating to the back, accompanied by two episodes of vomiting.

The patient was conscious, hemodynamically stable and respiratory, with a cardiopulmonary examination that is normal including an ECG without abnormalities; the abdominal examination found sensitivity at the level of the epigastrium, the rest of the somatic examination was without particularity.

The patient benefits from a biological assessment showing a lipasemia elevated 15 times too normal, with a leukocytosis at 13000 and a CRP at 150. Arterial blood gases were normal. as well as kidney function, by the way. Alkaline phosphatase and γ-glutamyl transferase were 352 U / L and 382 U / L, respectively. Alanine aminotransferase and aspartate aminotransferase (AST) were 4630 U / L and 3190 U / L, respectively. Acute pancreatitis was diagnosed, thoracic and abdominal radiographs were normal, abdominal CT was performed, showed pancreatitis stage C 2-ponitis gravity score, multilithiasis vesicle, with dissection aspect of common hepatic artery, and right and left branches, complicated with false aneurysms, with segmental hepatic infarction, and dilatation interesting the first branches of the superior mesenteric artery may be related to vasculitis (Figure1).

The patient was fasted and subjected to intravenous treatment, based on analgesic, hydration and gastric protector, as well as the antihypertensive, and LMWH for thromboembolism prevention, surveillance was in the middle of the resuscitation considering the risk of a cardiovascular complication later, his abdominal symptoms gradually resolved. An internal medicine opinion was solicited, and a

corticosteroid treatment was started before the suspicion of a polyarteritis nodosa, the patient remains asymptomatic, was released at the 7th day, it was followed in external consultation, with a clinical improvement and radiological resolution dissection of his hepatic artery.

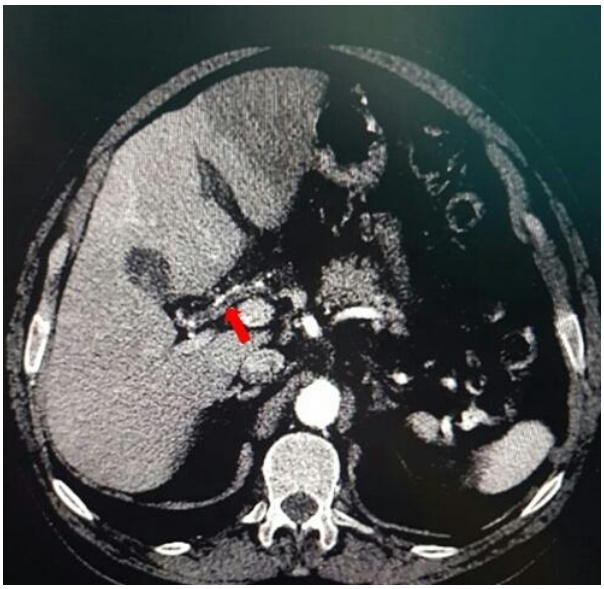

Fig-1: CT image showing dissection of the common hepatic artery associated with stage c pancreatitis

Table-1: Summary of all reported cases of hepatic artery dissection

Author	Year	Age/gender	Clinical	Etiology	Treatment
Foord and Lewis	1959	54/M	Incidental	Unknown	Autopsy
Patchefsky and Palpanus	1967	63/F	Hypertension, incidental	FMD	Autopsy
Callicott and Hoke	1968	51/F	Sudden rupture of h.a.	MD	Ligature of h.a.
Mikail and Danesh	1968	67/M	Unknown	MD	Autopsy
Boquist and Berg	1970	52/F	Epigastric pain, incidental	MD	Necropsy
Guthrie and Maclean	1972	46/F	Hypertension	Unknown	Laparotomy
Hill *et al.*	1974	65/F	Epigastric pain	CMN	Autopsy
James	1976	61/F	Abdominal cramps, hypertension	Unknown	Autopsy
Pinkerton *et al.*	1976	52/M	Right upper abdominal pain	FMD	10 mm knitted Dacron graft
Guerrero	1979	70/F	Hypertension, incidental	Anoxic medial damage	Autopsy
Larson *et al.*	1987	54/M	Hypertension	Unknown	Autopsy
Roh and LeSher	1989	65/F	Epigastric pain, hypertension	Unknown	Autopsy
Muller€ and Kim	1995	36/F	Hypertension, back pain	Unknown	Antihypertensive therapy
Muller€ and Kim	1995	61/M	Hypertension, abdominal pain, shock	Hemophilia, pancreatitis	Surgical repair with saphenous graft
Garcia *et al.*	1996	69/F	Abdominal pain, vomiting, fatigue	Elastic tissue dystrophy	Medical therapy (nicardipine)
Nakamura *et al.*	1998	51/M	Hepatic metastases, incidental	Unknown	Surgical repair with saphenous graft
Hashimoto *et al.*	1998	28/F	Epigastric pain, hereditary hemorrhagic telangiectasia	Unknown	Conservative management (analgesia)
Fayek	2001	32/F	32 week pregnancy, abdominal and back pain	Unknown	Autopsy
Takayama *et al.*	2008	57/M	Unknown	Unknown	Conservative management
Takayama *et al.*	2008	49/M	Bloody sputum, incidental	Unknown	Saphenous vein bypass from right external iliac to right h.a.
Emptoz *et al.*	2008	72/F	Gastrectomy, intestinal hemorrhage	Unknown	Autopsy
Current case	2010	65/F	Abdominal pain, acute pancreatitis	Unknown	Conservative management

M: male; F: female; FMD: fibromuscular dysplasia; h.a., hepatic artery; MD, medial degeneration; CMN, cystic medial necrosis.

DISCUSSION

Arterial dissection is defined as an intimal tear that results in intimomedial detachment and the creation of a true and false channel extending over a variable length of the vessel. Isolated dissection of visceral arteries, that is, not associated with aortic dissection and in the absence of obvious connective tissue abnormality, is extremely rare [4,1]. In order of increasing incidence, this type of isolated dissection may involve the renal, carotid, coronary, intracranial or visceral arteries [5]. In the latter case, the most common site of attack is that of the superior mesenteric artery [1]. Etiologies include atherosclerosis, fibromuscular dysplasia, medial degeneration, trauma, and connective tissue disorders; however, the cause of most dissections is never determined [6, 7] the pathogeneses of splanchnic artery dissection and aneurysm are considered similar, if not analogous. Thus, it is reasonable to postulate that other causes may include intra-abdominal inflammatory foci, autoimmune arteriopathies, and mycosis [8, 9]. Approximately 58% of splanchnic artery dissections arise from the superior mesenteric artery, whereas involvement of the hepatic artery is highly unusual [6].

A study that reported all cases of AH dissection described in the literature (table 1) [10], the mean age at detection of hepatic artery dissection is 55 years (range: 28-72 years). Interestingly, 62% have occurred in women. Etiologies have been identified in 38% of reports and have included medial degeneration, fibromuscular dysplasia, cystic medial necrosis, anoxic medial damage, and elastic tissue dystrophy. Hypertension has been documented in 40% of the cases.

Hepatic artery dissection has been symptomatic in 71% of cases, typically presenting with pain in the epigastrium and right hypochondrium. Rupture with abdominal pain and shock has been the presenting scenario in 43% of cases and has always rapidly caused death. CT is the preferred diagnostic modality [11]. It plays a major role both in the initial diagnosis of the disease and in the follow-up of the disease [12]. The examination not only examines the size, location and extent of the dissection, but also assesses complications such as visceral ischemia, ischemia of the intestinal wall or the appearance of intraperitoneal haemorrhage. The new techniques of digital angiography are also effective in assessing the location and extent of dissection. It remains a technique of choice to con fi rm the diagnosis by highlighting double light and to evaluate the collateral flow of the false channel and the relationship between dissection and downstream branches. Angiography may, however, fail to demonstrate dissection in the event of complete thrombosis of the false lumen and the apparent persistence of a regular caliber of the vessel. Because of this, and because of its invasiveness, angiography is currently reserved for patients whose condition is worsening and who would benefit from percutaneous angioplasty [1, 13].

Surgical and medical approaches have each been successfully applied in 4 cases. Saphenous vein grafting has been performed in three patients who were all alive at least 13 months later (range: 13 months-3 years), Medical therapy has focused on short-term analgesia, ameliorating cardiovascular risk, and managing concomitant hepatic ischemia. All patients were alive at least 5 months after presentation (range: 5 months-8 years). Muller *et al*. used intravenous propranolol and nitroprusside, followed by oral metoprolol and captopril for a hypertensive 36-year-old woman with back pain caused by hepatic artery dissection [14].

Conservative treatment is reserved for cases of limited, uncomplicated dissection [1, 15]. It combines anticoagulation, platelet antiaggregation and strict control of high blood pressure. In case of medical treatment, close supervision is necessary, based on clinical examination and CT scan.

In our case, the potential cause of dissection is intriguing. The patient had high blood pressure. It is plausible that atherosclerosis in the hepatic artery predisposes the vessel to dissection, as well as vasculitis which occurs during pain-related hypertension. Additionally, the acute pancreatitis could have contributed to the dissection through spread of the inflammatory process and elaborated proteolytic enzymes. This mechanism has been implicated in 9% of hepatic artery aneurysms and is not mutually exclusive with the first [16].

Finally, there remains little direct evidence to guide management of hepatic artery dissection. Rupture must be prevented. Conservative therapy would include aggressive minimization of cardiovascular risk and regular radiographic surveillance. Surgery should be considered for patients associated with an enlarging associated hepatic artery aneurysm, thrombosis of the true lumen, persistent symptoms or arterial complications such as rupture or liver ischemia [6, 17].

CONCLUSION

The dissection of the hepatic artery remains rare and carrier of serious complications, the crisis of acute pancreatitis is an uncommon mode of revelation, in the absence of sign of tomodensitometric gravity, a conservative strategy and a close surveillance represent the current attitude suitably adapted, Hepatic artery dissections should be reported to provide sufficient data to guide therapeutic decisions.

REFFERENCE

1. Ghuysen A, Meunier P, Van Damme H, Creemers E, D'orio V. Dissection isolée de l'artère mésentérique Supérieure. Ann Cardiol Angeiol.

2008;57:238-42
2. Foord A, Lewis RD. Primary dissecting aneurysm of peripheral and pulmonary arteries. Dissecting haemorrhage of media. Arch Pathol. 1959;68:555-577.
3. Emptoz J, Chambost M, Combe C. Dissection of hepatic artery aneurysm after gastrectomy. Ann Fr Anesth Reanim. 2008; 27:163-165.
4. Jason D, Woolard MD, Alex D, Ammar MD, Wichita Kan. Spontaneous dissection of the celiac artery. J Vasc Surg. 2007;45:1256-8.
5. So YH, Chung JW, Park JH. Balloon fenestration of iatrogenic celiac artery dissection. J Vasc Interv Radiol. 2003;14: 493-6.
6. Takayama T, Miyata T, Shirakawa M. Isolated spontaneous dissection of the splanchnic arteries. J Vasc Surg. 2008; 48:329-333.
7. Yasuhara H, Shigematsu H, Muto T. Self-limited spontaneous dissection of the main trunk of the superior mesenteric artery. J Vasc Surg. 1998; 27:776-779.
8. Shabana PF, Gloviczki P, Stanson AW. Splanchnic artery aneurysms. Mayo Clin Proc. 2007;82:472-479.
9. Stanley JC, Wakefield TW, Graham LM. Clinical importance and management of splanchnic artery aneurysms. J Vasc Surg. 1986; 3:836-840.
10. CROWHURST, Thomas D. HO, Phyllis. Hepatic artery dissection in a 65-year-old woman with acute pancreatitis. Annals of vascular surgery. 2011, 25(3) 386 e17-386. e21.
11. D'Ambrosio N, Friedman B, Siegel D. Spontaneous isolated dissection of the celiac artery: CT findings in adults. AJR Am J Roentgenol. 2007;188:W506-W511.
12. Glehen O, Feugier P, Aleksic Y, Delannoy P, Chevalier JM. Spontaneous dissection of the celiac artery. Ann Vasc Surg. 2001;15:687-92.
13. McGuinness B, Kennedy C, Holden A. Spontaneous coeliac artery dissection. Australas Radiol. 2006;50:400-1.
14. Muller MG, Kim D. Spontaneous dissection of the hepatic artery. Abdom Imaging. 1995; 20:462-465.
15. Chaillou P, Moussu P, Noel SF, Sagan C, Pistorius MA, Langlard JM. Spontaneous dissection of the celiac artery. Ann Vasc Surg. 1997;11:413-5.
16. Shanley CJ, Shah NL, Messina LM. Common splanchnic artery aneurysms: splenic, hepatic, and celiac. Ann Vasc Surg 1996;10:315-322.
17. Sparks SR, Vasquez JC, Bergan JJ. Failure of nonoperative management of isolated superior mesenteric artery dissection. Ann Vasc Surg. 2000;14:105-109.