Arterial dissection is defined as a cleavage of the arterial wall by an intramural hematoma between 2 elastic layers [1]. Isolated arterial dissection occurs without aortic dissection and has been shown in carotid and renal arteries but rarely in visceral arteries [2]. Spontaneous dissection of a visceral artery, including the superior mesenteric artery, inferior mesenteric artery, and the celiac artery (CA) without aortic dissection, is an uncommon occurrence. The isolated CA dissection is the least commonly reported. We describe an isolated spontaneous dissection of the CA with aneurysm formation. It was identified by multidetector computed tomography (CT) in a man with acute onset abdominal pain and a history of hypertension and hyperlipidemia. The patient was successfully managed medically. Although endovascular treatment or surgical intervention is the procedure of choice for complex cases, medical management with close observation is an acceptable management strategy for stable and uncomplicated cases of spontaneous CA dissection.

CASE REPORT

A 51-year-old male was admitted into the emergency department for abdominal pain for 1 day. The non-rebounding pain was located in the mid-umbilical and epigastric regions. He experienced no muscle guarding, felt indigestion, and had no fever, no nausea, no vomiting, and no diarrhea. Furthermore, the patient had a history of hypertension, hyperlipidemia, and dry eye syndrome without known adverse drug reactions. However, he had no history of trauma, heart disease, or smoking.

A general examination indicated that his pulse rate was 80/min, and blood pressure was 130/82 mmHg. Serum amylase, lipase, and other routine blood laboratory data were checked at the emergency department, and the results indicated that everything was within reference limits. A contrast-enhanced computed tomography (CT) scan in the arterial phase showed linear luminal narrowing and an extending thrombosed false lumen from the origin of the CA to the proximal hepatic artery with vascular narrowing (Fig. 1a). The patient was admitted to the cardiovascular service and commenced anticoagulation therapy to maintain his international normalized ratio at 2-3. Thereafter,
the patient underwent a rheumatological workup and showed no evidence of connective tissue disease. A repeat contrast-enhanced abdominal CT after a month showed the resolution of the intramural thrombus with a delineation of

the linear intimal flap and an aneurysmal formation of the CA of approximately 1.3 cm in diameter (Figs. 1b, 2a, and 2b). Interval CT scans at 6 months and 9 months showed a persistent intimal flap with an aneurysmal formation of the CA without interval change (Figs. 1c and 1d). The patient was asymptomatic at follow-up and is performing well on anti-hypertension medications.

**DISCUSSION**

An arterial dissection is defined as the cleavage of the 2 layers in the arterial wall by intramural hematoma [1]. A spontaneous dissection of a visceral artery without associated aortic dissection is extremely rare. Extra-aortic dissections are listed in order of decreasing frequency: the renal artery, coronary artery, cerebral artery, carotid artery, vertebral artery, and visceral arteries [2, 3].

Most patients experience abdominal pain. There is normally a discrepancy between symptoms and physical

**Figure 1**

1a. Initial contrast enhanced CT, arterial phase showed linear luminal narrowing and a thromboses false lumen extending from the celiac artery origin (small arrow) to proximal hepatic artery (big arrow). Nonspecific infiltration of fat at the Lt retroperitoneal space (arrow head) noted. 1b. Repeat contrast enhanced CT at 1 month showed, resolution of the intramural thrombus and linear intimal flap (arrow). 1c-d. Follow-up contrast enhanced CT at 6 and 9 months showed, persistent intimal flap with aneurysmal formation of the celiac artery without interval change.
Isolated spontaneous dissection of the celiac artery

With advancements in the resolution of CT scanners, the contrast-enhanced dynamic CT scan has become one of the most useful diagnostic modalities for assessing visceral artery dissections and provides details regarding the course of dissection and its extension into the smaller branches of the arterial tree [4, 5]. Furthermore, CT scans allow for follow-up comparisons and measurements of the extent of the disease [5]. Several studies indicated that the contrast-enhanced dynamic CT scan is an accurate and less invasive alternative to angiography for diagnosis and follow-up serial images of arterial dissection [3-5]. Celiac artery dissection can be accompanied by a CA aneurysm [2]. Diagnostic imaging findings from a CT scan showed intimal flaps, which were identified in all patients of this series. This flap is a pathognomonic or eccentric mural thrombus in the celiac lumen, which should raise suspicion for dissection. However, the intimal flap is not always visible; thus, the mural thrombus may be the only clue to the presence of dissection. A misdiagnosis of dissection as thromboembolic occlusion in these circumstances can lead to unnecessary pharmacologic thrombolysis [6].

The optimal management of CA dissection remains controversial because of the rarity of this condition, and it may depend on hemodynamic status, involved vessels, response to conservative treatments, and the development of complications [7]. The complications may include spleen infarct, aneurysm, vascular rupture, bowel ischemia, or hemorrhage. Therapy with anticoagulant or antiplatelet agents for 3 to 6 months with a target international normalized ratio of 2.0-3.0 with strict blood pressure control [8] has been suggested for preventing thromboembolic complications. The immediate administration of an anticoagulant after a diagnosis induces the healing of the dissection with dissolution of the mural hematoma and prevents thromboembolic complications [5]. Our patient was treated with medical therapy that included anticoagulant or antiplatelet agents to prevent thromboembolic complications and control blood pressure to prevent progression of the dissection plane. Surgical or endovascular treatment was not performed because the patient was in a stable clinical condition. The modification of cardiac risk factors limits the propagation of the dissection and reduces the risk of rupture. Surgical or endovascular treatment may be reserved for patients with persistent signs of ischemia (despite adequate anticoagulation) or patients with uncontrolled hypertension or progression of dissection [3, 8]. Endovascular stent graft placement was performed successfully for visceral artery aneurysms. Intervention is typically suggested for larger aneurysmal dilatations of more than 1.5 to 2.0 cm [9].

CONCLUSION

Isolated spontaneous CA dissection remains a rare diagnosis. They are typically presented with abdominal pain...
and non-specific clinical signs. Normal laboratory findings of rare causes of abdominal pain should be considered. Visceral ischemia should be considered when abdominal symptoms are disproportionate compared to clinical signs. A CA dissection should be considered in the differential diagnosis of acute visceral ischemia. Although treatment strategies are relatively unclear, medical management and close observation is appropriate for uncomplicated lesions. Endovascular procedure, stenting, or surgical management may be a preferred treatment for patients with associated complications or recurrent symptoms.

REFERENCES