

A Rare Case of Fusiform Celiac Artery Aneurysm after Penetrating Trauma

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Introduction

- Visceral artery aneurysm (VAA) are an uncommon clinical problem with aneurysms of the celiac artery only making up a small percentage, 4% of all visceral artery aneurysms.
- The more common are splenic and hepatic artery aneurysm which are often symptomatic with pain or rupture
- Penetrating trauma is a common cause of visceral artery aneurysms
- Endovascular management is becoming commonplace for these lesions

Presentation of Case

We present a case of an otherwise healthy 30 yo male with an asymptomatic, posttraumatic arterial aneurysm of the celiac artery. He initially presented to our trauma center after sustaining multiple gunshot wounds which required multiple abdominal surgeries. He re-presented four weeks later with 3 days of flank pain and fever. Extensive workup yielded an incidental finding of 14mm fusiform aneurysm of the celiac artery with associated dissection. This was not present on imaging during his initial hospitalization. The patient underwent successful endovascular management.

Discussion

- Visceral artery aneurysms include both true aneurysms, limited by all three layers of the arterial wall which progressively dilate and thin, and pseudo aneurysms, where there is a tear of the vessel with associated peri-arterial hematoma.
- True aneurysms can be further categorized based on morphology as fusiform, saccular, or a combination of the two.
- The etiology of aneurysms can be congenital or due to underlying arterial disease, infection or injury.
- Those aneurysms resulting from traumatic injury are most commonly due to penetrating mechanisms.
- Splanchnic aneurysms are defined as those affecting the celiac, superior mesenteric, and inferior mesenteric arteries and their branches. Visceral artery aneurysms are relatively rare with a reported incidence of 0.1 to 0.2 percent.
- They do however carry a high mortality potential of 8.5% if they rupture, which has been reported anywhere between 10 - 100% in some series
- Celiac artery aneurysms are the rarest of these subtypes of aneurysms comprising 4 % of all visceral artery aneurysms.
- Though many visceral aneurysms are symptomatic at presentation, celiac artery aneurysms are often asymptomatic at presentation with approximately 85 percent discovered on incidental imaging studies.
- Our case of celiac artery aneurysm presented in an unusual manner. It was discovered incidentally as a 14mm fusiform celiac axis dilatation. This finding is unusual because it was discovered approximately one month after traumatic injury to the abdomen when no such findings were noted on initial imaging.
- After treating our patient for his chief complaint of a left flank abscess with incision and drainage and appropriate antibiotics, he was referred to vascular surgery for evaluation and management of his celiac artery aneurysm.



Figure 1. Axial view illustrating celiac artery aneurysm



Figure 2. Coronal view, illustrating celiac artery dissection

Conclusions

- Posttraumatic visceral artery aneurysms are rare with an incidence of 0.01 to 0.2%, however they have a potential for high mortality if undiagnosed or untreated.
- Celiac artery aneurysms are the rarest of the visceral artery aneurysms encountered in the clinical setting. The majority are asymptomatic unless they reach critical diameters.
- Etiologies can be difficult to assess on a patient to patient level but usually include atherosclerosis, congenital defects, intra-abdominal inflammation and trauma.
- Early recognition and intervention is paramount as mortality rates can reach up to 40 percent for ruptured vessels.
- Early endovascular management to be most effective.
- Overall management should focus on preventing these aneurysms from expansion and eventual rupture.

References

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