CASE REPORT

Secondary Omental Infarction in a Patient with a Hypercoagulable State

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SUMMARY

Omental infarction is a rare cause of acute and non-specific abdominal pain. We report a case of a 46-year-old man who presented to the emergency room with right upper quadrant cramping pain that was of sudden onset. The patient's presentation was later diagnosed as an omental infarction, by an abdominal CT. After extensive work-up, it was revealed that the cause of the patient's omental infarction was secondary to a hypercoagulable state caused by antiphospholipid syndrome, based on his thrombophilia work-up. The patient was successfully managed conservatively and was started on lifelong anticoagulation. The patient was followed up with an abdominal CT after 2 months into therapy, which showed a decrease in the size of the omental infarction and a significant improvement in his state.

BACKGROUND

We report a case of an unusual presentation of omental infarction in a healthy young man with no significant medical history or comorbid conditions.

The patient presented with right upper quadrant cramping pain. On history and physical examination, the pain was not further explained, which warranted a CT of the abdomen. On imaging, it was reported that the patient had an omental infarction, in which the patient was later extensively worked up.

We are reporting this case to further expand the differential diagnosis for similar presentations in other individuals.

CASE PRESENTATION

This is a case of a 46-year-old man who presented to the emergency room of a tertiary hospital with sudden, acute right upper quadrant cramping pain. The pain was radiating to the flanks region, escalating in severity through the day, and there were no associated symptoms. Pain medication had no effect.

The patient has no significant medical history and has never undergone any procedures nor any surgeries. The patient was not taking any medications aside from occasional over-the-counter medications (for influenza or pain). The patient denies taking any herbal medications or undergoing any complementary medicine procedures such as acupuncture.

The patient was febrile with a temperature of 38.3°C. An abdominal examination revealed a symmetrical abdomen with no visible scars or discoloration nor any peristaltic or pulsating movements. On palpation, the abdomen was soft and lax, non-distended, with diffuse rebound tenderness more prominent over the right upper quadrant. The patient had normal bowel sounds.

INVESTIGATIONS

Blood investigations were all within normal ranges, including lipase and amylase. Abdominal ultrasound was initially performed, which showed no signs of acute cholecystitis and was only positive for fatty liver and multiple benign liver cysts. We elected to perform an abdominal CT with contrast, which showed right upper quadrant intermesenteric homogeneous fat stranding with a hyperdense rim compatible with omental infarction, along with multiple hepatic lesions likely representing a hepatic cyst (figure 1).

The patient was further investigated to rule out any secondary causes for ischaemia in an otherwise healthy individual. A full thrombophilia work-up showed high anticardiolipin IgM (performed twice, 12 weeks apart) in addition to antiphosphatidylserine IgM. The patient was later diagnosed with antiphospholipid syndrome (APLS) due to his laboratory work-up and clinical presentation.

TREATMENT

The patient was admitted through the emergency room as a case of omental infarction for conservative management under the haematology department. The patient was kept nil per os (NPO) on intravenous boluses of normal saline and was started on an intravenous antibiotic as prophylaxis and analgesia. The patient underwent daily monitoring of his complete blood counts with differentials and blood inflammatory markers. His tests showed an improvement that correlated with an improvement of his pain severity. On the third day of hospitalisation, the patient was started on an oral diet, which was well tolerated. The thromboembolic team was contacted to assess the patient's need for anticoagulants. The plan was to start the patient on aspirin 81 mg daily, and to perform a thrombophilia work-up to investigate his hypercoagulability state.

The thrombophilia work-up showed high anticardiolipin IgM (performed twice, 12 weeks apart) in addition to antiphosphatidylserine IgM, which

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Figure 1 Contrast-enhanced abdominal CT scan showing right upper quadrant intermesenteric homogeneous fat stranding with a hyperdense rim compatible with omental infarction.

along with his clinical history of thrombosis was sufficient to diagnose him with APS. For this reason, the patient was started on lifelong rivaroxaban 15 mg, as recommended by the thromboembolic team.

OUTCOME AND FOLLOW-UP

The patient was discharged in a good stable condition 4 days after his admission. The patient was maintained on aspirin 81 mg daily, as recommended by the thromboembolic team. The patient was assessed 2 months later by both the surgery and thromboembolic teams, and was found to have a significant improvement both clinically and on repeat CT of the abdomen (figure 2).

DISCUSSION

The accurate incidence of omental infarction has not been determined.¹ Although theoretically it can occur at any site where

Figure 2 Contrast-enhanced abdominal CT scan 2 months after diagnosis of omental infarction showing a decrease in the cross-sectional area of the omental infarct from 7×2.7 cm to 4×2.6 cm.

the omentum is located, omental infarction has been reported to occur frequently on the right side.²

Whether primary or secondary, infarctions without torsion have similar patterns of progression. The distal end of the omentum becomes congested and oedematous, associated with haemorrhagic extravasation into the interstitial tissue and thrombi formation in the omental veins, together with inflammatory cell infiltration of variable degrees that might proceed to gangrene if the process is of sufficient duration.³

While ultrasound can guide diagnosis towards omental infarction, it is subjective to interpretive error; thus, ultrasound would be helpful in ruling out other causes of abdominal pain especially on the right side, for example, acute cholecystitis and appendicitis. CT scan is considered to be the gold standard for diagnosis. The characteristic finding of the whirl/whirlpool sign (concentric hyperattenuated linear strands in the fat mass) has been described for omental infarction caused by torsion.^{2 4 5}

In our case report, the ultrasound was used to rule out other causes of right upper outer quadrant pain, and the abdominal CT with contrast confirmed the diagnosis of omental infarction.

Work-up to exclude any secondary cause and treatment should be implemented simultaneously. Although there are no established guidelines for the management of omental infarction, a short trial period of conservative management is recommended after establishing the diagnosis by CT. Surgical treatment (preferably laparoscopic) is another option to be considered especially if the symptoms are persistent or worsening on conservative treatment, taking into consideration that surgery can prevent complications involved in conservative management such as abscesses and adhesions.

We adopted conservative management in our patient, including NPO, intravenous fluids, antibiotics and analgesics, which resulted in an improvement in 3 days in terms of pain and inflammatory markers, and without the need for surgery.

In patients treated conservatively, follow-up with radiological studies should be done for 1–3 years to rule out any complication.^{1 6 7}

Three months after discharge, abdominal CT was done on our patient and showed a decrease in the size of the omental infarct.

Since thrombophilic work-up on our patient showed high phospholipids, the diagnosis of secondary omental infarction due to hypercoagulable status antiphospholipid syndrome (APS) was considered. The issue of secondary prevention with anticoagulation was addressed.

Multiple studies have evaluated the rate of recurrent thromboembolism after an initial event in patients with APS.^{8–10} Regardless of the presence or absence of warfarin therapy, recurrent events were seen in up to 11% of patients per year, while in two

Learning points

- ▶ There are no established guidelines for the management of omental infarction. After establishing the diagnosis by CT, a short trial period of conservative management is recommended as appropriate.
- ▶ Patients treated conservatively require follow-up with radiological studies for 1–3 years to rule out complications.
- ▶ In secondary omental infarction due to hypercoagulable status caused by antiphospholipid syndrome, the optimal duration of anticoagulation following a first event is uncertain; however, lifelong therapy is warranted for most patients based on the increased risk of recurrence.

studies the rates of recurrence among untreated patients were 29% and 19% per year, respectively.^{8,9} The optimal duration of anticoagulation following a first event is uncertain in patients with APS. Lifelong therapy is warranted for most patients with APS based on the increased risk of recurrence.

The risk of recurrence of thrombosis can be predicted from measuring the anticardiolipin antibodies at the end of 6 months of treatment. This was evaluated in a prospective study of 412 patients with a first episode of venous thromboembolism; the presence of anticardiolipin antibodies at the end of 6 months of treatment was associated with a doubling of the risk of recurrent thrombosis (29% vs 14%).¹⁰

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