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Case Report

Acute Mesenteric Ischemia as a Complication of Chronic Psoriasis, a Rare Pathogenesis

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Abstract

Background: Psoriasis is an autoimmune inflammatory dermatological disease that can have serious complications. Acute mesenteric ischemia is a rare complication that can present in cases of chronic psoriasis in which the blood supply to the superior mesenteric artery and the celiac trunk can be obstructed resulting in ischemia, bowel necrosis and can lead to gangrenous changes in multiple abdominal organs. In late diagnosis, this has a very poor prognosis and can lead to patient death.

Case Presentation: We report a case of a 49-year-old female who was a known case of psoriasis on medications. She presented with non-specific abdominal pain and vomiting for two days. CT scan showed occlusion of the celiac trunk and superior mesenteric artery with infarctions to multiple organs. She was diagnosed with mesenteric ischemia and underwent an exploratory laparotomy. Due to the late presentation, the patient quickly deteriorated and was put on end-of-life care.

Conclusion: Cases of AMI should be suspected in patients with chronic psoriasis who present with abdominal pain especially if there are other comorbidities that can predispose to thromboembolism. Early diagnosis and management can lead to better outcome.

Keywords: *Acute Mesenteric Ischemia; Psoriasis; Acute Abdomen*

Introduction

Psoriasis is increasingly being recognized as a multi-system chronic inflammatory skin disease with many comorbidities [1]. Patients with severe psoriasis have a higher mortality rate compared with the general population [2].

The celiac trunk and superior mesenteric artery (SMA) provide the majority of blood supply to the gastrointestinal system. Thrombosis of these main arteries can cause ischemia of the liver, spleen infarction and necrosis of the stomach, duodenum, small and large intestines, as well as other disastrous effects in the blood supply to abdominal organs [3].

Here, we are reporting a case of celiac trunk and SMA thrombosis in a patient with chronic psoriasis.

Case Presentation

A 49-year-old female patient, with a known case of diabetes mellitus type 2 and psoriasis on medications, presented to the emergency department with a history of generalized abdominal pain. She started having sudden onset pain that was getting gradually worse for a period of 2 days. The pain was constant, non-radiating, 8/10 in severity, and associated with 3 episodes of vomiting after eating. She did not complain of fever or melena.

On examination, the patient was conscious but a bit drowsy. She was fatigued and dehydrated. Her blood pressure was 170/100, otherwise she was vitally stable. The abdomen was soft, lax, with mild tenderness in the right iliac fossa, she did not have guarding or rigidity. A psoriatic rash was seen all over the abdomen (Figure 1).

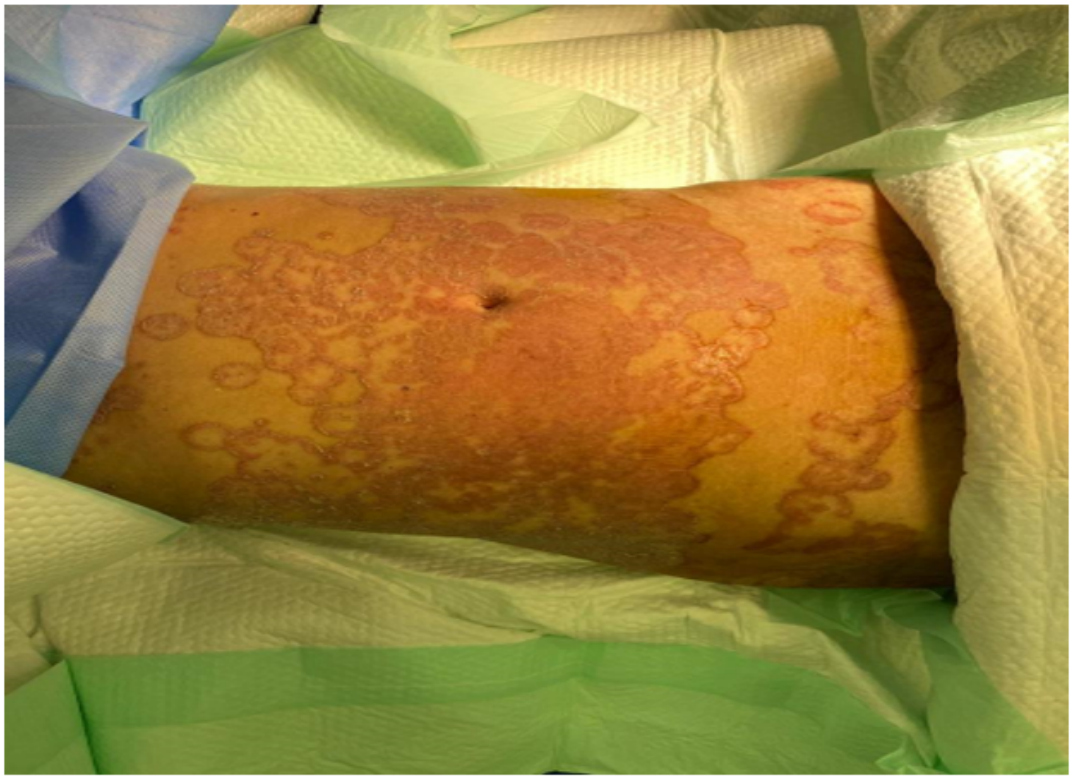

Figure 1: *Psoriatic rash in the abdominal area.*

The patient's lab results showed a white blood cell count of 11.23 x 10^9/L, hemoglobin 15 g/dL, Lipase 323 U/L, venous blood gas showed lactic acidosis in diabetic ketoacidosis. Chest and Abdominal X-rays were unremarkable. A CT abdomen with intravenous and rectal contrast reported total occlusion of the celiac trunk and the superior mesenteric artery as shown in figure 2. A thrombus was observed in the thoracoabdominal aorta and supra-renal aorta (Figure 3) with infarction of the spleen and parts of the kidneys and early ischemic bowel changes.

Figure 2: *Total occlusion of the celiac and superior mesenteric artery.*

Figure 3: *Thrombus seen at the thoracoabdominal aorta and supra renal aorta.*

The patient underwent mechanical thrombectomy of superior mesenteric artery (SMA) thrombi with catching of a large thrombus in the aorta performed by the interventional radiology team. The patient was then shifted for a laparoscopic exploration that converted into an open laparotomy, during which she underwent a resection of 30 cm of completely infarcted ischemic small bowel. A dusky aperistaltic small bowel of 110 cm from duodenojejunal junction was noted (Figure 4), along with a dusky spleen with signs of ischemia. The liver, stomach and large bowel were viable. She was put on full heparinization protocol as recommended by the vascular surgery team. The patient was shifted to the intensive care unit for further monitoring and management where she suffered from progressive shock and metabolic acidosis; she was started on norepinephrine, fluids, sodium bicarbonate and albumin infusion.

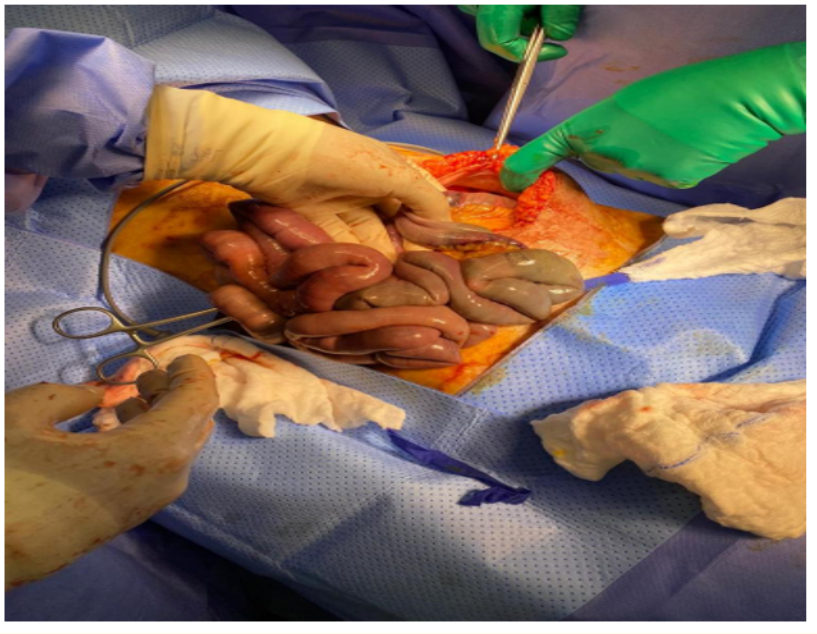

Figure 4: *Dusky aperistaltic small bowel.*

The following day, the patient was taken for a second-look laparotomy where she underwent further resection of 50 cm of necrotic small bowel from the distal jejunum to the proximal ileum, along with resection of the gallbladder as it was necrotic. A dusky spleen and left lobe of the liver were noted. The large bowel, stomach, and omentum were viable. The duodenum and pancreas were also inspected; the duodenum was found to be dusky but not necrotic, and the pancreas was healthy. The superior mesenteric artery was examined and a faint pulsation was present.

Two days later, the patient was taken for a third-look laparotomy. There was complete ischemia of all the small bowel from the duodenum onwards associated with an absent pulsation in SMA, black discoloration with an offensive odor and bloody collection in the abdomen. The whole segment of small bowel, liver, and spleen were gangrenous. It was agreed that no further procedure will be done. The family was counseled and agreed to put the patient on End-of-Life Care. Two days later, the patient deteriorated and was deceased.

Discussion

Acute Mesenteric ischemia (AMI) is a rare abdominal emergency that is associated with a high mortality rate [4]. The most common cause of mesenteric ischemia is thromboembolic events [5]. It was reported that patients with psoriasis have an increased incidence of

atherosclerosis and thromboembolic events [6,7], this is due to increased platelet aggregation in patients with psoriasis as well as elevated levels of platelet-derived microparticles which both increase the risk of thrombus formation [8]. Furthermore, inflammatory cell activation and the production of pro inflammatory cytokines play a key role in the development of psoriatic lesions, as well as the development and susceptibility of atherosclerotic plaque [9].

Patients with AMI may present with non-specific abdominal complaints or rapid onset abdominal pain. Angiography is the preferred approach in diagnosis as it can be used to determine the specific location of the obstruction, as well as the state of the collateral circulation [10]. Emergency angiographic imaging and early revascularization are life-saving measures if acute mesenteric ischemia is suspected [10]. Resuscitation, antibiotics and IV heparin should be started promptly as this disease has an extremely high mortality rate with a very poor prognosis [11]. Endovascular procedures can be conducted with minimal rates of complication and mortality in individuals who have been diagnosed and have no signs of intestinal infarction or acute abdomen [12]. If peritonitis signs are present, a laparotomy should be performed [13].

The goal of a laparotomy is to determine the viability of the bowel, revascularize it, and remove the necrotic bowel [9]. Resection of the gangrenous bowel was performed in our patient; however, during the third-look laparotomy, it was noted that the whole bowel was gangrenous, so no further intervention could be done. Mesenteric bypass surgery is another treatment modality that can be done in the absence of intestinal gangrene [14].

Conclusion

AMI can be associated with psoriasis which is a chronic inflammatory disease with increased risk of thrombotic events. AMI is a medical and surgical emergency that necessitates rapid medical and surgical treatment along with supportive intensive care to ensure patient survival, however, the mortality rate for this disease remains high.

Bibliography

1. Griffiths CEM Barker JNWN. "Pathogenesis and clinical features of psoriasis". *Lancet* 370.9538 (2007): 263-271.

2. Ryan C and Kirby B. "Psoriasis is a systemic disease with multiple cardiovascular and metabolic comorbidities". *Dermatologic Clinics* 33.1 (2015): 41-55.

3. Rajiv Jain., *et al*. "Rare Case of Celiac Trunk and SMA Thrombosis Presenting as an Isolated Gangrenous Cholecystitis: A Surgical Surprise". *Journal of Evolution of Medical and Dental Sciences* 4.91 (2015): 15697-15699.

4. Schoots IG., *et al*. "Systematic review of survival after acute mesenteric ischaemia according to disease aetiology". *British Journal of Surgery* 91.1 (2004): 17-27.

5. Romano N., *et al*. "Acute thrombosis of the superior mesenteric artery in a 39-year-old woman with protein-S deficiency: a case report". *Journal of Medical Case Reports* 5.1 (2011): 17.

6. Shapiro J., *et al*. "The association between psoriasis, diabetes mellitus, and atherosclerosis in Israel: a case-control study". *Journal of the American Academy of Dermatology* 56.4 (2007): 629-634.

7. Ryan C and Kirby B. "Psoriasis is a systemic disease with multiple cardiovascular and metabolic comorbidities". *Dermatologic Clinics* 33.1 (2015): 41-55.

8. Fan Z., *et al*. "Platelet dysfunction and its role in the pathogenesis of psoriasis". *Dermatology* 237.1 (2021): 56-65.

9. Grozdev I., *et al*. "Psoriasis as a systemic disease". *Clinics in Dermatology* 32.3 (2014): 343-350.

10. Keskin HA., *et al*. "Celiac artery thrombosis and superior mesenteric artery stenoses with essential thrombocythemia: a case report". *Case Reports in Medicine* (2012): 741653.

11. Hamza M., *et al*. "Mesenteric ischemia due to thrombosis involving the aorta, celiac artery, and superior mesenteric artery in a young female with protein C deficiency". *Cureus* 11.11 (2019): e6151.

12. Mercogliano G., *et al*. "Gastric ischemia treated with superior mesenteric artery revascularization". *Clinical Gastroenterology and Hepatology* 5.4 (2007): A26.

13. Mazzei MA. "Acute mesenteric ischemia: guidelines of the World Society of Emergency Surgery: a brief radiological commentary". *World Journal of Emergency Surgery* 13 (2018): 34.

14. Kirkpatrick IDC., *et al*. "Biphasic CT with mesenteric CT angiography in the evaluation of acute mesenteric ischemia: initial experience". *Radiology* 229.1 (2003): 91-98.

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