



Systematic Review / Meta-analysis

Mesenteric panniculitis various presentations and management: A single institute ten years, experience



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ABSTRACT

Mesenteric Panniculitis (MP) is predominately a disease of the small bowel of unknown etiology. Characterized by Fibrosis and chronic inflammation of fatty tissue of the mesentery in the small bowel. It is commonly diagnosed based on computed tomography (CT scan) with IV contrast and biopsies in equivocal cases. We conducted a retrospective study from 2011 to 2020. We analyzed the medical records of 40 patients with Mesenteric Panniculitis. The most common presentation was vague abdominal symptoms. We successfully managed the patients medically with prednisone, azathioprine, colchicine, or a combination. Patients on prednisolone showed good responses clinically and radiologically during follow-up. One patient was operated on and didn't respond to medical therapy.

1. Patients and methods

We searched the literature regarding mesenteric Panniculitis in PubMed, Science - direct database. We analyzed the studies that were published between 2011 and 2020 to ensure our results were compatible with similar studies. The literature having different terminology mesenteric panniculitis was reviewed. (Panniculitis, peritoneal inflammatory Fibrosis, mesenteric adipose tissue, mesenteric Fibrosis). We searched about mesenteric Panniculitis, case report, and case series with literature review related to clinical presentation and management. We restricted our search to articles published in English. We review the medical records of 40 patients who presented with mesenteric Panniculitis from 2011-to 2020. and analyzed demographic data, clinical manifestations, and CT scan findings. Thirty-nine patients (97.5%) were managed conservatively. A single drug or combination therapy was used (prednisone, azathioprine, colchicine). One patient (2.5%) required surgical management and did not respond to medical treatment.

2. Data analysis and result

We reviewed patient charts and collected data from 2011 to 2020 who presented with mesenteric panniculitis We found that 60% of patients were admitted through the emergency department (ED), and 50% were males aged 50–80 years (mean age 65). 4% of cases were younger age group 28–36 years (mean age 32 years). The female patient's age

group was 53–68 years (mean 60.5 years). Based on CT scan findings and clinical manifestation, the diagnosis was made by excluding other causes of abdominal pain such as acute cholecystitis, acute pancreatitis, and appendicitis. CT scan of the abdomen was used as an imaging diagnostic modality. An essential blood investigations were done, including the white blood count, renal and liver panel, serum amylase, serum lipase, and inflammatory markers. Most patients (78.5%) presented with vague abdominal pain associated with nausea. Their symptoms increased progressively from 24 h to a few weeks and months. One percent of patients presented with bilateral pedal edema, back pain, fever, night sweating, shivering, and urinary frequency. Anorexia, Malesia, and weight loss were noticed in 10%. Clinical examination revealed palpable fullness/mass in LUQ, LLQ, and umbilical areas in 40% of cases. In 38 patients (95%), the diagnosis was confirmed by CT scan findings, which revealed typical mesenteric panniculitis features. 2 patients (5%) underwent laparoscopic diagnostic biopsy, where CT findings were misleading. Thirty-seven patients (92.5%) were managed initially with different drug combination therapy (prednisone and colchicine) or azathioprine used only when the initial combination therapy response failed. All patients were followed up in the outpatient. Seven patients (17.5%) were readmitted with recurrent symptoms, and they were treated with a combination of drugs prednisone, colchicine, or combination.

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3. Introduction

Mesenteric Panniculitis is a chronic inflammation of mesenteric fat, also referred to as mesenteric weber's disease or mesenteric lipodystrophy. The condition has been described in medical literature by various names. The incidence of mesenteric Panniculitis is 3% and 1.5% in males and females, respectively [1]. The clinical manifestation varies from case to case, and patients may present with abdominal pain, nausea or vomiting, anorexia, bloating & weight loss. And rarely as intestinal obstruction. It has been reported in patients with a history of abdominal surgery or trauma, gallstone, malignancy, vascular disease, mass, infections, and autoimmune disease [2]. Diagnosis is usually made by computed tomography scan with pathognomonic features such as greasy ring signal, pseudo capsule, and fat halo sign (Ring sign [3]). The misty mesentery is not specific for mesenteric Panniculitis. If the CT scan was inconclusive, PET/CT would show high uptake of FDG in mesenteric adipose tissue [4]. The biopsy is the gold standard for diagnosis, which is usually done during exploratory laparoscopy or laparotomy [5]. Treatment options are based on case reports as the condition is rare; however, the following have been tried with variable outcomes depending on the stage of the disease, asymptomatic inflammatory or fibrotic state, steroid, azathioprine, cyclophosphamide, colchicine, tamoxifen & radiotherapy. Spontaneous resolution of the illness has been reported mainly with the steroid only [6]. Surgery is indicated in those patients with compressive or obstructive symptoms.

4. Discussion

Idiopathic mesenteric inflammation was first described by Jura et al., in 1924 as sclerosing mesenteritis [7]. Later on, in 1960, Ogden introduced the term mesenteric panniculitis [8]. This rare inflammatory condition has been reported in medical literature under several names, liposclerotic mesenteritis, mesenteric lipomatosis, lipogranuloma of the mesentery, retractile mesenteritis, and as a part of weber-Christian disease [9,10]. The exact cause of this disease is unknown, but there is a hypothesis that it is related to many factors such as drugs, mesenteric thrombosis, thermal and chemical injuries, vasculitis, abdominal surgery, and intraperitoneal bile or urinary leak, bacterial and viral infection [10]. Another hypothesis is that it may be related to cirrhosis, coronary artery disease, gall stones, peptic ulcer, abdominal aortic aneurysm, chylous ascites, and tobacco consumption. It also has been reported in association with malignant diseases, colon cancer, renal cell and gastric carcinoma, lung cancer, lymphoma, thoracic mesothelioma, and carcinoid tumor [11–13]. Emory et al. have reported that 84% of case of mesenteric Panniculitis has a history of trauma or abdominal surgery. The incidence of MP is higher in men; the male to female ratio is 2–3:1, and it is more common in individuals aged 50–60 years [14].

MP predominantly involved the small bowel mesentery in almost 90% of cases compared to large bowel mesentery. A few cases have been reported in the area of the mesocolon, omentum, peripancreatic area retroperitoneum, or pelvis, [15–17]. Diagnosis is challenging in such cases as the clinical manifestation varies, most of the patients are asymptomatic, or they may present with abdominal fullness, weight loss, abdominal pain, nausea and anorexia, diarrhea, and intestinal obstruction. On clinical examination of the abdomen, there may be palpable more than one mass. Rarely cases of MP presented with gastric outlet obstruction, jaundice, and rectal bleeding has been reported in medical literature [17–19]. The advanced imaging modalities, high-resolution CT scan MRI are handy tools for diagnosis [20]. The most consistent findings on CT scan in MP is the finding of localized masses in the root of mesentery adjacent intestinal loops with the thickened wall [21,22]. After reviewing the 7620 abdominal CT scans, Daskalogiannaki et al. reported that only (0.6) % of patients had positive findings., left-sided distribution, fat halo sign, nodules, and pseudotumor hypoattenuation [23]. MP is usually a self-limiting disease as a few case series have been reported that follow-up CT scan in 4–5-month

duration showed no changes. Horton et al. reported that CT scan findings are specific for the diagnosis of MP, A Fat Ring sign that reflects the preservation of fat around the mesenteric vessels and the presence of tumoral pseudo capsule [24–26].

In our study, we noticed that Panniculitis predominately affected the small bowel in 39% of cases. Incidence of disease was higher in men aged 50–80 years, male to female ratio was 3:1.5, similar to other studies. Female patients were younger than the male age group. Sixty percentage of patients were admitted through ED. The most common clinical manifestation was vague abdominal (78.5%), and nausea and vomiting in (2%). The course of symptoms was slow in progression. The most of the patients were diagnosed on CT scan findings which revealed typical features of MP, while diagnostic laparoscopic was performed only in two patients. Eighty-five percent of the patients treated with combination therapy (prednisone and colchicine) have a complete resolution. Ten percent of patients were treated with single-drug treatment, and prednisone in four percent of the patient's azathioprine was added. Only one patient required surgery who had a bowel obstruction. The duration of drug therapy varied from 2 to 6 weeks. Patients showed dramatic improvement in their symptoms as we followed up in outpatient for 3–6 months. Follow CT scan show CT abdomen revealed either the complete resolution of MP or the regression of abdominal mass. Up to 2 years of follow-up, patients remained in good health and had no recurrence. We believe that the combination of prednisolone and colchicine provides a better outcome. Anyhow, prednisolone alone or in combination is an effective medical therapy for mesenteric Panniculitis.

5. Conclusion

We are reporting a single institute ten years' experience, treating 40 cases of mesenteric Panniculitis. Which is a rare clinical entity with slow progression. Diagnosis is often challenging for gastroenterologists, radiologists, surgeons, and pathologists. Abdominal CT with IV contrast is the best diagnostic imaging modality. In general, treatment has been reserved for symptomatic cases. The most common finding is a soft tissue mass with a higher density than normal mesenteric tissue, fat halo sign (Ring sign), and mesenteric lymphadenopathy. Most of the patients successfully managed conservatively. Our results are almost similar to other studies reported in the medical literature. The mainstay of treatment is prednisolone alone or in combination. In our study, the combination therapy prednisolone with colchicine gave a better outcome. We added azathioprine only in resistance cases.

Ethical approval

IRB approval.

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Author contribution

Mohammed Alsuhami Corresponding author, wrote structured abstract, Rana Alshowaiey Reviewed Literature, Abdulrahman Alsumaihi Wrote introduction, Sahar M Aldhafeeri Retrospective Study, wrote discussion and References.

Registration of research studies

1. Name of the registry: Research registry 7987
2. Unique Identifying number or registration
3. Hyperlink to your specific registration (must be publicly accessible and will be checked): <http://www.researchregistry.com/browse-the-registry#home/>

Guarantor

Mohammed Alsuhami.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request”.

Provenance and peer review

Not commissioned, externally peer-reviewed.

Declaration of competing interest

No conflict of interest and there was no funding or financial assistance in this case.

Appendix A. Supplementary data

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