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CASE REPORT

Ascites Due To Pseudomyxoma Peritonei (Pmp): A Rare Case Report

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Abstract

Introduction: Pseudomyxoma Peritonei (PMP), also known as "jelly-belly," is a rare condition characterized by the accumulation of mucinous ascites in the peritoneal cavity. It often originates from mucinous neoplasms of the appendix and presents with non-specific symptoms like abdominal bloating and discomfort. Diagnosis is often incidental through imaging, surgery, or histopathology.

Objective: To report the diagnosis and management of PMP in a 53-year-old woman presenting with abdominal enlargement.

Case Report: A 53-year-old woman was referred with a two-month history of abdominal enlargement. Initial ultrasound findings suggested ascites due to cirrhosis or ovarian carcinoma. However, further evaluation with abdominal CT revealed ascites and cholelithiasis without signs of cirrhosis or ovarian carcinoma. Diagnostic laparoscopy showed peritoneal carcinomatosis, and 8000 ml of hemorrhagic ascites was drained. Histopathological examination confirmed the diagnosis of PMP, and tissue resection was performed.

Conclusion: The management of PMP requires a comprehensive diagnostic approach, incorporating clinical history, physical examination, imaging, and histopathological evaluation. This systematic approach is crucial for accurate diagnosis and effective treatment of PMP.

Keywords: Pseudomyxoma Peritonei, mucinous ascites, abdominal enlargement, peritoneal carcinomatosis, diagnostic laparoscopy

INTRODUCTION

The term *pseudomyxoma* refers to the formation of gelatinous material within cysts or the peritoneal cavity. The etymology originates from the term *pseudomucin*, which is no longer used in molecular biology.¹ Pseudomyxoma Peritonei (PMP) also known as "jelly-belly," is a rare clinical condition characterized by the progressive accumulation of mucinous ascites within the peritoneal cavity.²

Pseudomyxoma Peritonei most commonly arises from mucin-producing neoplasms of the appendix and spreads intraperitoneally, resulting in extensive mucin deposition on peritoneal surfaces. PMP presents with varied and non-specific clinical manifestations, and many patients remain asymptomatic in the early stages. The most common symptoms include abdominal bloating, discomfort, and progressive abdominal distension.

Due to its indolent nature and non-specific presentation, PMP is frequently misdiagnosed as more common condition such as liver cirrhosis or ovarian malignancy. The diagnosis is often made incidentally during cross-sectional imaging, laparoscopy, laparotomy, or histopathological examination.³ Given its rarity and diagnostic challenges, PMP remains a significant clinical concern, particularly in gynecological practice.

This case report aims to describe a rare presentation of pseudomyxoma peritonei manifested as massive ascites and to highlight the importance of a systematic diagnostic approach for accurate diagnosis and management.

CASE REPORT

This study reported a 53-year-old woman was referred from Pariaman hospital with the main complaint of an enlarged stomach since 2 months ago. Regular menstrual history once a month with a duration of 5-6 days. The patient had 6 children with normal delivery. Menarche at the age of 13. From a physical examination, it was found that the stomach was enlarged and did not feel pain. On bimanual vaginal examination found no pain in the adnexa and obtained prominent Douglas cavum. Laboratory tests obtained normal results. On ultrasound examination (Figure 1), ascites is found as a result of suspicion of cirrhosis with differential diagnosis of ovarian carcinoma.



Figure 1. On ultrasound examination found the appearance of ascites. On abdominal CT, ascites and Cholelithiasis were found, and cirrhosis and ovarian carcinoma were not found (Figure 2).

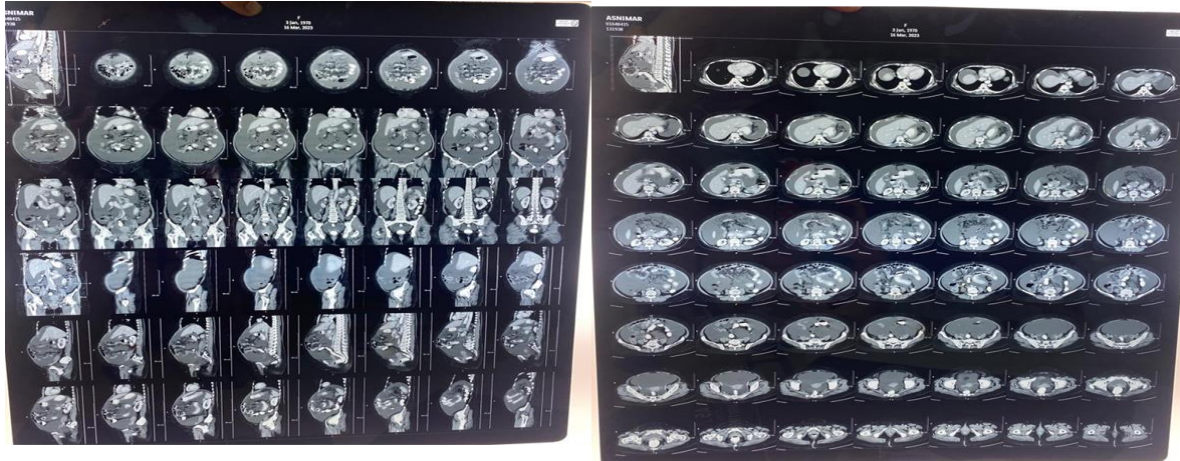


Figure 2. Ascites and cholelithiasis were found on abdominal CT.

In this patient, diagnostic laparoscopy and tissue biopsy were performed. Diagnostic laparoscopy showed peritoneal carcinoma and no mass in the uterus or adnexa (Figure 3) and obtained hemorrhagic serous ascites fluid as much as 8000 ml (Figure 4).

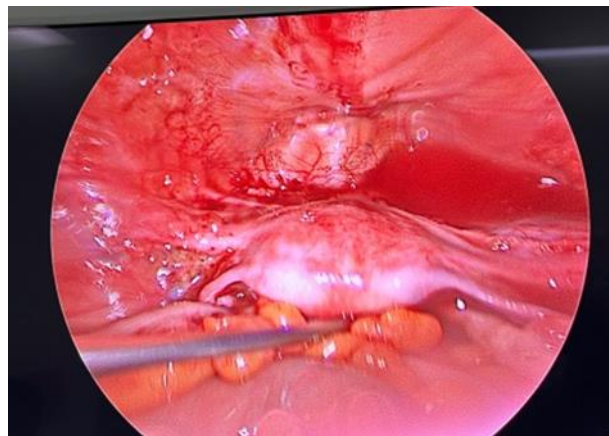


Figure 3. Laparoscopy showed peritoneal carcinoma



Figure 4. Ascites fluid from laparoscopy procedure

In this patient, PMP tissue resection was performed and PMP tissue was obtained as in Figure 5.

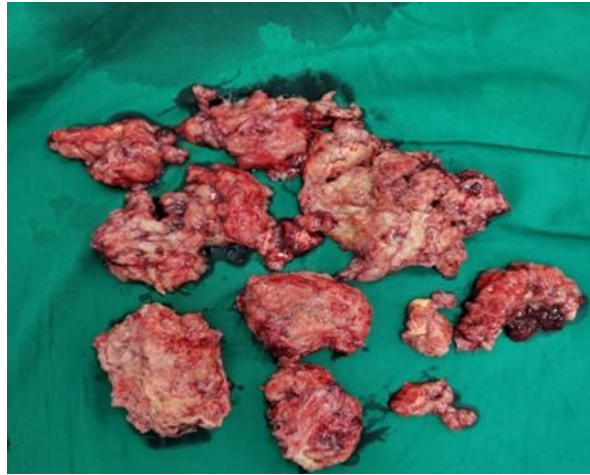


Figure 5. PMP tissues after resection procedure

DISCUSSION

Pseudomyxoma peritonei (PMP) is a rare clinical condition characterized by the accumulation of mucinous ascites within the peritoneal cavity. The disease originates most frequently from appendiceal neoplasms and is associated with peritoneal dissemination of mucin-producing tumor cells. The two primary classifications of PMP, first proposed by Oscar Polano in 1901, include mucinous cystadenoma peritonei simplex, representing a more benign form, and malignant cystadenoma pseudomucinosum peritonei, which is more aggressive and destructive in nature.¹

PMP is often challenging to diagnose due to its subtle presentation and the limitations of standard imaging techniques. In this patient, the initial diagnosis suggested cirrhosis with a differential of ovarian carcinoma based on ascites observed in the ultrasound. However, subsequent CT imaging revealed ascites and cholelithiasis, but did not confirm cirrhosis or ovarian malignancy, reflecting the difficulty in differentiating PMP from other abdominal pathologies without advanced techniques.^{2,3}

Laparoscopy with biopsy remains the gold standard for PMP diagnosis, allowing direct visualization of the peritoneal cavity and the collection of tissue samples for histopathological evaluation.^{4,5} In this case, diagnostic laparoscopy identified peritoneal carcinoma without any evident mass in the uterus or adnexa, with hemorrhagic ascites confirming the peritoneal involvement typical of PMP.⁶ Histopathological examination plays a crucial role in distinguishing PMP from other peritoneal carcinomatosis and helps guide management.⁷

Management of PMP depends on the extent of disease at presentation. Cytoreductive surgery (CRS) combined with hyperthermic intraperitoneal chemotherapy (HIPEC) is the standard treatment in eligible patients, offering improved survival rates compared to surgery alone.⁸ CRS aims to remove visible tumors and reduce mucin accumulation, while HIPEC addresses microscopic disease by delivering heated chemotherapy directly into the peritoneal cavity.¹⁰ However, in

patients with high tumor burden or poor surgical candidates, debulking surgery offers a palliative option to relieve symptoms and reduce tumor load.^{11,12}

The goal of debulking surgery is to minimize the tumor burden while avoiding unnecessary morbidity. In this patient, debulking was limited to omentectomy and small bowel resections to alleviate obstructive symptoms, a common strategy in patients with extensive peritoneal disease.^{13,14} Although complete cytoreduction offers the best outcomes, debulking can still provide symptomatic relief and improve the quality of life, especially when CRS and HIPEC are not feasible.^{15,16}

Prognosis in PMP largely depends on the histological grade of the tumor and the completeness of cytoreduction. Low-grade PMP (mucinous carcinoma peritonei) has a better prognosis compared to high-grade disease (mucinous adenocarcinoma).¹⁷ The patient in this case presented with a high volume of mucinous ascites, which complicates surgical resection and limits the potential for complete cytoreduction. Studies have shown that even in patients with incomplete cytoreduction, adjuvant therapies, including HIPEC and systemic chemotherapy, may offer some benefit in controlling disease progression.^{18,19}

While PMP is generally considered a slow-growing tumor, its ability to recur even after aggressive treatment remains a significant challenge. The patient in this case will require long-term follow-up with periodic imaging to monitor for recurrence.²⁰ Regular follow-up is critical, as recurrence rates after cytoreduction and HIPEC can be as high as 50%.²¹ This highlights the importance of an individualized treatment plan and the need for multidisciplinary management involving surgeons, oncologists, and radiologists.²²

CONCLUSION

In conclusion, the diagnosis and management of PMP require a combination of imaging, histopathological analysis, and surgical intervention. While CRS and HIPEC remain the standard of care, debulking surgery offers a valuable alternative for symptom control in patients with extensive disease. Long-term follow-up is essential due to the risk of recurrence and the potential need for additional treatments

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