An Unusual Intra-abdominal Inflammatory Reaction to Intraperitoneal Chemotherapy

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A 65-year-old female with a history of ulcerative colitis, hypertension and diabetes presented to her primary care provider with dysuria, bloating, abdominal pain and decreased appetite and urination. She was treated with a 10-day course of antibiotics for presumed urinary tract infection. She presented 10 days later with abdominal pain and bloody diarrhea presumed to be suggestive of acute exacerbation of ulcerative colitis. She reported increased abdominal distention and bilateral lower extremity edema, which warranted routine labs and ultrasound that showed an 11-cm cystic adnexal mass in the left pelvis. Follow-up CT scan showed extensive abdominal ascites and thickened omental cake suspicious for ovarian carcinoma, which prompted referral to a gynecologic oncologist. Cancer antigen (CA-125) was found to be elevated, at 4926 U/mL.

She underwent exploratory laparotomy with evacuation of 5 liters of ascites fluid, bilateral salpingo-oophorectomy, omentectomy, lysis of adhesions, left ureterolysis, tumor debulking and cytoreduction with <1 cm residual disease, intraperitoneal port placement for subsequent chemotherapy, cystoscopy and proctoscopy. Frozen-tissue analysis showed high-grade serous carcinoma of the ovary. Final pathology was stage IIIC ovarian carcinoma. Her postoperative course was uneventful and she was discharged to transitional care and then home.

The patient’s initial CA-125 after surgery was 2034 U/mL. The treatment plan was to start eight cycles of IV/IP chemotherapy with cisplatin/paclitaxel. After three cycles of IV/IP chemotherapy, CA-125 decreased to 372 U/mL. However, between days 2 and 8 of the third cycle, she began to experience fatigue, incomplete bladder emptying and increased abdominal distention. After four cycles of IV/IP chemotherapy she presented to the clinic with increasing abdominal distention and pain, worsening nausea, diarrhea, inability to urinate and shortness of breath, and was admitted to the hospital.

During this admission, CT of the abdomen/pelvis showed left hepatic vein thrombosis and severe multiloculated abdominal ascites. Three interventional radiology paracentesis procedures removed 1350 mL, 370 mL and 2800 mL of ascites, respectively, which were sent for cytology and cell count.

The patient also was found to have leukocytosis and mild transaminitis; hepatic serologies were negative. She tested positive for Clostridium difficile colitis and was treated with oral flagyl. A gastroenterology consult for hepatic vein thrombosis and ongoing diarrhea recommended therapeutic lovenox for hepatic vein thrombosis, and IV flagyl and oral vancomycin for C. difficile colitis. After an infectious disease specialist was consulted because of concern about spontaneous bacterial peritonitis (SBP), the patient was started on IV ertapenem and IV flagyl was discontinued. At this time, the possibility of Budd-Chairi syndrome, peritoneal carcinomatosis or SBP was considered. However, all cultures of ascites fluid were negative and cytology was negative for malignancy. The patient improved and was discharged home with instructions to return for follow-up diagnostic laparoscopy and evacuation of ascites in one week if symptoms worsened.

The patient presented one day after discharge with continued diarrhea and failure to thrive at home. Her IP catheter was removed intraoperatively without event and she underwent IR paracentesis with minimal fluid evacuation. She subsequently had diagnostic laparoscopy (converted to mini-laparotomy for lysis of multiple intra-abdominal adhesions and loculations), removal of 7 liters of ascites fluid and IP drain placement. A frozen specimen showed necrotic inflammatory tissue consistent with diffuse resolving peritonitis. She improved, was discharged to a skilled nursing facility and completed the remaining four cycles of IV Taxol chemotherapy without event or recurrence of ascites.

Discussion

Epithelial ovarian cancer is a leading cause of mortality in women. To further complicate the disease, symptoms are vague and include abdominal bloating, early satiety and urinary problems. Thus, patients frequently present with advanced disease. Determining grade and stage can guide medical management. As was the case with our patient, optimal cytoreduction and combination intravenous/intraperitoneal (IV/IP) chemotherapy significantly improves survival for those with stage III to IV epithelial ovarian cancer compared with IV chemotherapy alone. The current standard of management of these patients includes IV therapy with a platinum agent in combination with paclitaxel.

Combination IV/IP chemotherapy has been shown to be advantageous compared with systemic therapy alone; however, it is important to be aware of the complications of IP chemotherapy. Most reasons for discontinuing IP chemotherapy include IP catheter infection, IP catheter blockage,
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access problems and major bowel complications possibly related to IP infusion or catheterization. Other toxic effects often reported with IP chemotherapy include abdominal pain, dose-related neuro- and renal-toxicities, neutropenia, thrombocytopenia, gastrointestinal and metabolic toxicities.

Extensive investigation into the etiology of this case using blood work, ascites fluid analysis and tissue specimen was unremarkable. After a lengthy evaluation, the conclusion was that this patient experienced an inflammatory reaction to intraperitoneal chemotherapy. Literature review found no documented cases similar to this one. With increasing evidence in support of combination IV/IP chemotherapy, there may be a future for standardizing this treatment. However, it is important to be cognizant of the risks and continue to investigate other causes of complications.

REFERENCES


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