



**MANAGEMENT OF SYMPTOMATIC MALIGNANT ASCITES WITH DIURETICS AND PARACENTESIS: CASE REPORTS**

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**ABSTRACT**

Malignant ascites is a widespread impediment of advanced cancer but to 20% of all cases of malignant ascites have unknown primary tumours. With the exception of ovarian cancer, the response of the ascites to treatment of the tumor is unsatisfactory and treatment related morbidity is common. The intent of most treatments for malignant ascites should be palliative with diuretics paracentesis were the common approach. A 53 years old, male patients who was admitted with history of abdominal distention for past 3 month associated with altered bowel habit and mucus per rectum and significant loss weight. Patients was diagnosed as malignant ascites with multicentric hepatoma with abdominal lymphadenopathy, lung, liver and vertebral body metastasis and left portal vein thrombosis. Patient was managed with temporary external paracentesis (pigtail catheter) and oral furosemide 40 mg daily and spironolactone 100 mg daily. Although abdominal paracentesis, diuretics and peritoneovenous shunting are commonly used procedures in management of malignant ascites, there are no randomized controlled trials evaluating the efficacy and safety of these therapies.

**Keywords:** hepatoma, paracentesis, furosemide, Cancer

**INTRODUCTION**

Malignant ascites is defined by the National Cancer Institute as a condition in which fluid containing cancer cells collects in the abdomen. This can occur by direct invasion of the peritoneum, such as in peritoneal carcinomatosis, or it can occur secondarily from the local biologic effect of tumors or vena caval compression. Approximately, 60% of patients with malignant ascites present with symptoms, which include abdominal swelling (55%), abdominal pain (53%), nausea (37%), anorexia (36%), vomiting (25%), and fatigue (17%).<sup>1</sup> Cancer accounts for approximately 10% of all cases of ascites and commonly occurs in ovarian, endometrial, breast, colon, gastric and pancreatic carcinomas. Below 15% of all patients with gastrointestinal cancer develop ascites at some stage of their disease whereas up to 20% of all cases of malignant ascites have unknown primary tumours.<sup>2</sup> With the exception of ovarian cancer, the response of the ascites to treatment of the tumor is unsatisfactory and treatment related morbidity is common. Thus, the intent of most treatments for malignant ascites should be palliative. Other than treatment of the underlying cancer, there are no generally accepted evidence based guidelines for the prevention or reduction of ascites. Approaches have included sodium-restricted diets, diuretics, serial paracenteses, peritoneal shunting and chemotherapy, both systemic and intraperitoneal.<sup>3</sup> We discuss the function of diuretic therapy as one of many approaches used to control this obstacle.

**Case presentation**

A 53 years old, Malay male patient was admitted to Hospital Universiti Sains Malaysia (HUSM) with history of abdominal distention for past 3 month associated with altered bowel habit and mucus per rectum. Patient also complained of irregular backpain, low of appetite and loss of 3 kg body weight in 2 months. Patients had history of diabetes mellitus and currently on oral hypoglycemic agents. The patient was found to have defined mass at right iliac fossa and no palpable lymphadenopathy. Colonoscopy showed external

compression 10-20cm with erythematous lesion at rectal area. The peritoneal fluid was chylous and cytology found to be positive for adenocarcinoma. The computerized tomographic (CT) scan of the abdomen revealed multicentric hepatoma with abdominal lymphadenopathy, lung, liver and vertebral body metastasis and left portal vein thrombosis. The patient was undergone peritoneal tapping and temporary external paracentesis (pigtail catheter) and currently was managed with oral furosemide 40 mg daily and spironolactone 100 mg daily. Furthermore, the patients also managed with other medication in the ward such as: Syrup Lactulose 15ml, oral gliclazide 160mg daily, intravenous pantoprazole 40mg twice daily, intravenous metoclopramide 10mg when needed, oral cloxacilin 500mg four time daily, subcutaneous fondaparinux 5mg daily, intravenous cefoperazone 1g twice daily, intravenous metronidazole 500mg thrice daily. Patient was undergone 1.5L/day fluid drainage by paracentesis managements on alternate day. Patient was discharge with marked response in bowel movement and resolution of ascites with diuretics and paracentesis treatments. No adverse effects of diuretics occurred and the blood pressure, electrolytes, blood urea nitrogen, and albumin all remained normal.

**DISCUSSION**

Ascites results either from overproduction of fluid from visceral capillaries in the peritoneum, impaired drainage by visceral or diaphragmatic lymphatics, or both.<sup>2</sup> Compared to ascites caused by cirrhosis, malignant ascites usually contains more white blood cells and a higher level of lactate dehydrogenase. Malignant cells are more often found in exudative ascites and positive cytology is demonstrated in almost 50% of the cases.<sup>4</sup> Endothelial permeability is increased in exudative ascites resulting in increased protein concentration in the fluid. Chylous ascites may result from extravasation of chyle into the peritoneal cavity due to lymphatic obstruction by tumor. The prognosis for these patients depends on the treatment of the underlying disease.<sup>1</sup>

Once the diagnosis of malignant ascites is established, treatment is largely palliative and aimed at symptom control however therapeutic success is often limited. There is no standardized protocol exists for treatment of cancer patients with rapidly reaccumulating ascites and approaches such as diuretics, paracentesis and peritoneovenous shunts are implemented empirically.<sup>2</sup>

Diuretic use in managing malignant ascites is inconsistent among physicians and no randomized trial was done to assess the efficacy of diuretic therapy in malignant ascites. The use of aldosterone antagonists, such as spironolactone 100-200 mg daily, either alone or in combination with a loop diuretic (e.g., furosemide 40-80 mg daily) may be able to provide adequate control.<sup>5</sup> studies were evaluated with a total of 113 patients with a variety of tumor types, and found that approximately 43% of patients attained ascites symptom relief with diuretic management.<sup>5</sup>

Recommendation was to use spironolactone, starting at a dose of 150 mg per day, and increasing the dose every few days until a response is achieved, or clinical features prevent further increase. During this titration, it would be important to monitor the urea and electrolytes regularly, and if hyperkalaemia were to develop, furosemide could substitute for additional spironolactone. Once a response is achieved, it may be possible to reduce the dose of diuretic required for maintenance therapy.<sup>1</sup>

Paracentesis is indicated for those patients with ascites who have symptoms of abdominal pressure such as nausea, vomiting, pain, dyspnoea or orthopnoea. Paracentesis produces temporary relief of these symptoms in approximately 90% of patients.<sup>4</sup> As the average life expectancy for patients with malignant ascites is less than 6 months<sup>7</sup>, repeated paracentesis often plays an important palliative role in those patients whom chemotherapy is fail.

The study recommended that the removal of at least 0.5 L is usually necessary to provide some degree of symptomatic relief.<sup>6</sup> Reports have suggested that rapid paracentesis can be safely performed, with up to 4 liter within 1-2 hours, providing that the intravascular volume is maintained with intravenous albumin and dextrose 5% in order to avoid renal and electrolyte disturbance.<sup>4</sup>

#### CONCLUSION:

The management of malignant ascites is unclear and there are no validated guidelines for the prevention or reduction of fluid re-accumulation. Abdominal paracentesis, diuretics and peritoneovenous shunting are commonly used procedures in management of malignant ascites, but need to explore the efficacy and safety of these therapies. Therapeutic paracentesis should be done if ascites is associated with respiratory distress or if symptomatic ascites is resistant to diuretics. However, paracentesis was superior to diuretics if the benefit outweighs the risk.

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