Role of Peritoneal Ports for Treatment of Intractable Ascites

Thesis

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INTRODUCTION

Ascites is a common complication of advanced malignancies (***Michael A, et al. 2005 and O'Neill MJ, et al. 2001***). It is also the most common major complication of cirrhosis (***Runyon BA, 1998***). Symptoms of marked abdominal distention, shortness of breath, diminished appetite, fatigue, and lower-extremity edema can significantly compromise a patient's everyday function (***O'Neill MJ, et al. 2001***).

Treatment options for intractable ascites include serial paracentesis, peritoneovenous shunting, liver transplantation, transjugular intrahepatic portosystemic shunt (TIPS) creation, and tunneled peritoneal catheters that may be external or, more recently, attached to subcutaneous ports.

In the past, permanent drainage catheters have not been considered viable treatment options for intractable ascites as a result of problems with infection, malposition, and occlusion (***Ross GJ, et al. 1989 and Belfort MA, et al. 1990***).

However, cuffed, tunneled peritoneal catheters have been used for many years for peritoneal dialysis with acceptable complication rates (***Allon M, et al. 1988 and Gloor HJ, et al. 1983***). In 1999, 27,000 people received peritoneal dialysis in the United States, constituting 9% of the dialysis population, with mortality rates similar to or lower than those in hemodialysis patients (***Georgiades CS, Geschwind JFH. 2002***). These catheters have generally been placed in operating rooms (***Allon M, et al. 1988***). Recently, 2-year catheter

survival rates with percutaneous placement have been reported to be 49%–82% (***Georgiades CS, Geschwind JFH. 2002***). Rosenblum et al (*2001)* described the use of a subcutaneous venous access port to treat refractory ascites with promising results in nine patients.

It is therefore appropriate to evaluate a port specifically designed for peritoneal access as a means of controlling intractable ascites. We present a minimally invasive treatment for palliative drainage of symptomatic ascites in patients with advanced malignancy or cirrhosis.

Aim of the work

The aim of this work is to evaluate the percutaneous implantable access system specifically designed for peritoneal access as a method to control intractable ascites as regards complications and patency.

ANATOMY

Compartmental anatomy of the abdomen and pelvis

Knowledge of the complex compartmental anatomy of the abdomen and pelvis is fundamental to understanding the effects of pathologic processes and to correctly interpret imaging studies. An understanding of the shape and extent of anatomic compartments and their normal variations may clarify imaging findings that would otherwise be incomprehensible or lead to misdiagnosis. Fundamental considerations include constant anatomic landmarks, ligaments and fascia that define compartments, and normal variations in size and appearance of the various compartments and recesses. Identifying the precise compartment in which an abnormality is located determines to a great extent the origin of the abnormality. (***Meyers MA.2000)***

The peritoneal cavity is divided into the greater peritoneal cavity and the lesser peritoneal cavity (the lesser sac) ***Fig (2.2)***. Within both portions of the peritoneal cavity are numerous recesses in which pathologic processes tend to loculate. ***(Coakley and Hricak, 1999)***

The right subphrenic space communicates around the liver with the anterior subhepatic and posterior subhepatic space (Morison pouch) ***Fig (2.1).*** The Morison pouch (the right hepatorenal fossa) is the most dependent portion of the abdominal cavity in a supine patient, and it collects ascites,

hemoperitoneum, metastases, and abscesses. The right subphrenic and subhepatic spaces communicate freely with the pelvic peritoneal cavity via the right paracolic gutter. ***(Coakley and Hricak, 1999)***

The left subphrenic space communicates freely with the left subhepatic space, but it is separated from the right subphrenic space by the falciform ligament and from the left paracolic gutter by the phrenicocolic ligament. The left subphrenic (perisplenic) space distends with fluid from ascites and with blood from splenic trauma. It is a common location for abscesses and for disease processes of the tail of the pancreas.

The left subhepatic space (gastrohepatic recess) is affected by diseases of the duodenal bulb, lesser curve of the stomach, gallbladder, and left lobe of the liver. ***(Healy and Reznek, 1999.****Fig (2.2)*

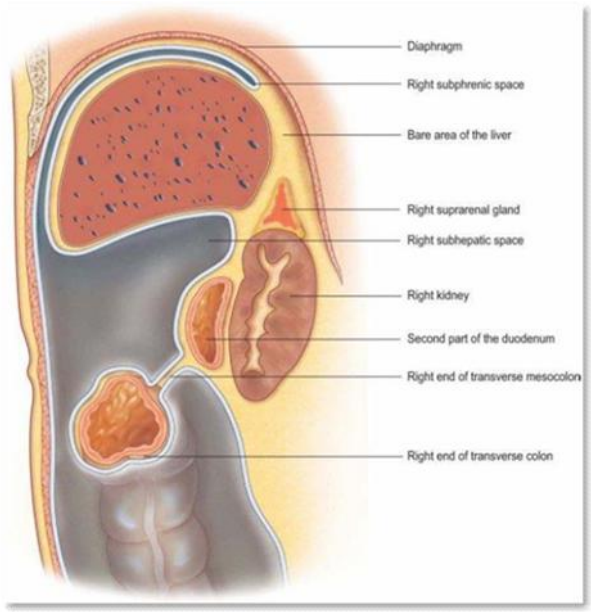

FIGURE (2.1) shows right subphrenic and right subhepatic spaces.
Quoted from Gray's Anatomy 2001

Free fluid, blood, infection, and peritoneal metastases commonly settle in the pelvis because the pelvis is the most dependent portion of the peritoneal cavity (in the upright patient) and communicates with both sides of the abdomen. (***Meyers MA.2000)***