Background  The natural history, presenting signs/symptoms, and diagnostic approach to the patient with malignant ascites are discussed in Fast Fact #176; readers are encouraged to read this Fast Fact to review the important role of determining the Serum Ascites-Albumin Gradient as a diagnostic and treatment aid. This Fast Fact will review treatment approaches.

1. **Diuretics:** Malignant ascites (SAAG < 1.1) generally does not respond to diuretic treatment although no randomized trials have been completed. Patients with evidence of portal hypertension (SAAG > 1.1) are more likely to respond to diuretics.

2. **Paracentesis:** Paracentesis can provide immediate relief of symptoms in up to 90% of patients. Drainage of uncomplicated large-volume ascites (4-6 L/session) can be done safely and quickly in the outpatient setting—including the home—or at the hospital bedside; ultrasound guidance is necessary only when there is loculated fluid.

3. **Drainage catheters:** For patients who require frequent paracentesis, external drainage catheters placed through the abdominal wall allow frequent or continuous drainage of ascites fluid without repetitive needle insertions. Patients or caretakers may perform the drainage, reducing visits to medical clinics. Several types of catheters are available:
   a. **Pigtail Catheter:** A simple, temporary all-purpose catheter; they are prone to complications when used over an extended duration (peritonitis, accidental removal, leakage, occlusion), hence are rarely used now.
   b. **Tunneled Catheter:** A catheter that prevents infection by promoting scarring around an antibiotic-impregnated Dacron cuff in subcutaneous tissue. Used conventionally for peritoneal dialysis, it is placed with ultrasound or fluoroscopic guidance and has lower risks of infection and leakage than the pigtail catheter. Complications are reduced by daily drainage for the first two weeks of cuff healing. The *PleurX catheter* is FDA approved for malignant ascites and features a one-way rubber valve to prevent leaks between draining sessions. Tunneled catheters are used in patients with life expectancy of at least one month.

4. **Vascular Shunts:**
   a. **Peritovenous shunt (PVS)** systems are designed to channel peritoneal fluid and proteins in benign ascites back into the circulation via the superior vena cava. PVS has not been shown to have clinically significant risk of disseminating tumor cells in malignant ascites. A PVS is placed by interventional radiology under conscious sedation, and patients typically require 24 hours of monitoring with a central venous line after the procedure. The best response to PVS (only about 50%) is in ovarian and breast cancers. PVS is recommended only in patients with a life expectancy of one to four months, considering that eventual occlusion rate is up to 24%.
   b. **Transjugular Intrahepatic Portosystemic Shunt (TIPS)** is a shunt between the portal vein and hepatic vein, designed to reduce portal hypertension and improve sodium balance. Most patients with malignant ascites do not have portal hypertension although TIPS might be helpful in the occasional cancer with evidence of increased portal pressures (SAAG > 1.1).

5. **Hyperthermic Intraperitoneal Chemotherapy (HIPEC):** This procedure is performed by surgical oncology specialists and entails warmed chemotherapy being infused into the peritoneal cavity for a short period of time. Most commonly this procedure is done along with tumor debulking or cytoreductive surgery (CRS). However, considering that recovery from HIPEC with CRS can take 3 to 6 months, CRS-HIPEC is typically reserved for low-grade appendiceal primary cancers seeing that these cancers are associated with a longer survival. For patients with anticipated shorter survivals, HIPEC without CRS can be done laparoscopically (and is therefore associated with less morbidity) with high rates of ascites control.
References


Version History: Current version copy-edited in May 2009; then again July 2015 by Sean Marks MD: references #10 and #11 were added and incorporated into the text.

Fast Facts and Concepts are edited by Sean Marks MD (Medical College of Wisconsin) and associate editor Drew A Rosielle MD (University of Minnesota Medical School), with the generous support of a volunteer peer-review editorial board, and are made available online by the Palliative Care Network of Wisconsin (PCNOW); the authors of each individual Fast Fact are solely responsible for that Fast Fact’s content. The full set of Fast Facts are available at Palliative Care Network of Wisconsin with contact information, and how to reference Fast Facts.

Copyright: All Fast Facts and Concepts are published under a Creative Commons Attribution-NonCommercial 4.0 International Copyright (http://creativecommons.org/licenses/by-nc/4.0/). Fast Facts can only be copied and distributed for non-commercial, educational purposes. If you adapt or distribute a Fast Fact, let us know!

Disclaimer: Fast Facts and Concepts provide educational information for health care professionals. This information is not medical advice. Fast Facts are not continually updated, and new safety information may emerge after a Fast Fact is published. Health care providers should always exercise their own independent clinical judgment and consult other relevant and up-to-date experts and resources. Some Fast Facts cite the use of a product in a dosage, for an indication, or in a manner other than that recommended in the product labeling. Accordingly, the official prescribing information should be consulted before any such product is used.