Disclosure

- The presenter makes the following disclosures:
  - Consults for CareFusion, (formerly Cardinal Health)
  - Paid an honoraria and travel expenses for this program by Mader Communications Group

Pathophysiology of Ascites

- Symptoms:
  - Abdominal pressure/discomfort
  - Shortness of breath, nausea/vomiting
- Causes of malignant ascites\(^1\):
  - 15% portal hypertension/liver invasion
  - 50% invasion visceral/parietal peritoneum
  - 15% combination previous two
  - Rest due to lymphatic disruption - chyloous exudate
Common therapies

- Large volume paracentesis (LVP)
- Diuretics/diet
- Non-tunneled drains (pigtail catheters)
- Tunneled drains
- Shunts

Optimal Patient Management

- Paracentesis is best first therapy
  - Can send for diagnostic studies
  - Assess for symptom relief
- Paracentesis should be utilized as a bridge between therapies.
  - Especially for ovarian cancer and other cancers that respond well to chemotherapy

Optimal treatment continued

- When paracentesis no longer effective, then more permanent options are necessary:
  - Pigtail catheter
  - Tunneled catheter
  - Abdominal ports
  - Shunts (Denver, Leveen)
Pleurx® catheter

Common Complications

- Infection
  - Tunnel tract
    - Usually treated easily with antibiotics
  - Peritonitis
    - Can sometimes be treated with antibiotics like peritoneal dialysis catheters.

Complications, cont

- Occlusion
  - Fibrin sheaths, clot, peritoneal “stuff”
  - Tumor ingrowth
- Loculations
  - More common with sanguineous ascites
- Patient issues
  - Obesity, resolution of fluid, diuretic use, not draining enough
Malignant Pleural Effusions - pathophysiology

- 5 to 10 liters pleural fluid made q day\(^2,3\)
- Several tablespoons between pleura
- Fluid produced, monitored, filtered by lymphatic system.
- Tumor blockage cause of most effusions, small percentage are chyous
- Symptoms typically include SOB (especially with exertion), fatigue, dry cough, and occasional tachycardia

Treatment Options

- Thoracentesis
- Chest thoracostomy/pleurodesis
- Thoracoscopy/talc poudrage
- Tunneled catheter/auto pleurodesis (PleurX\(^\text{®}\) has FDA indication and multiple studies)

Optimal management

- Thoracentesis always first treatment
  - Assess labs, malignancy, relief of sx, and re-expansion of lung
- Recurrent effusions should be treated sooner than later (unlike ascites)
  - Risk of re-expansion pulmonary edema, development of loculations, procedural discomfort
Optimal management, cont

- Best definitive treatment choices are tunneled chest tube or thoracoscopy with talc poudrage pleurodesis
The “Rules”...

- Ascites
  - Paracentesis only until all therapies fail

- Effusions
  - Pleurodesis sooner than later

The “Rules” cont.

- Ascites
  - For patients with more than 2 weeks life expectancy
  - Drain for comfort, try to keep total volume less than 2 liters to avoid stress on tunnel

- Effusions
  - Drain q day until volume less than 300cc, then QOD for duration. When volume less than 50 cc for three consecutive drainages, stop for 1 week - get cxr and remove. * Exception - trapped lung.
Stuff they don’t tell you about...

- Nursing education
  - IR nurses
  - Floor nurses
  - Hospice/Nursing Home staff
- Supplies
  - IR stock for patient to take home
  - Hospital for readmissions

Case History

- Grossly obese patient (GF), required Pleurx® catheter removal due to fenestrations in subcutaneous flank tissues
Case History

- SK, female with ovarian cancer
  - First LVP - 12/30/99
    - 121 total LVP (4 to 6 liters per LVP)
    - APD drain 10/00 (peritonitis)
    - Pleurx® 10/01 until death 2/02

- MKK, female with breast cancer
  - Failed talc pleurodesis, presents with SOB, tachycardia

AS, Mesothelioma

- Right pleurx® x 2 placed by surgeons at Mayo Clinic
- Sx = SOB, catheter draining little, severe pain up along whole right back when trying to drain.
JF, Adeno CA unknown 1°

- Ascites, bilateral pleural effusions
MP Ovarian Ca, JC unknown 1º

- Recurrent, intractable ascites
- Puncture high by liver, tunnel obliquely, place catheter into pelvis
STA Pancreatic CA, JL Lung CA

- Walled-off area of ascites secondary to surgery.
- Go where the fluid is...

- If fluid is low in the pelvis, a “C” tunnel works well
Non-oncology uses

- CHF effusions
- CHF/ESRD ascites
- Cirrhosis ascites/effusions

The bottom line...

- It's all about the patients, their families, and effective palliation
  - AF, malignant melanoma, end stage with only days to live and recurrence of massive ascites. Normally a candidate for pigtail catheter...
  - JR, osteosarcoma, massive overgrowth of tumor in his left chest...
References

