_____A CLINICAL DECISION _____

GUIDE TO

SYMPTOM RELIEF

IN

PALLIATIVE CARE

5th edition

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Ascites

Clinical decision and action checklist

1. **Is there doubt that this is ascites?**
2. **Is the prognosis short?**
3. **Is the condition causing distress?**
4. **Can the patient tolerate diuretics?**
5. **Is the ascites persisting?**

Key points

- Paracentesis offers immediate relief but poor long-term control.
- Combination diuretics offer useful long-term control in some patients.

Introduction

Ascites in cancer or liver disease usually carries a poor prognosis.[1] The commonest causes for malignant ascites are primary tumours of breast, ovary, colon, stomach, pancreas and bronchus. Symptoms of ascites include nausea, vomiting, abdominal distension or pain, oedema (legs, perineum or lower trunk), and breathlessness due to diaphragmatic splinting.[2]

Types of ascites: Four types can be identified.[3]
Raised hydrostatic pressure: caused by cirrhosis, congestive heart failure, inferior vena caval obstruction and hepatic vein occlusion.
Decreased osmotic pressure: caused by protein depletion (nephrotic syndrome, protein losing enteropathy), reduced protein intake (malnutrition) or reduced production (cirrhosis).
Fluid production exceeding resorptive capacity: caused by infection or neoplasms.
Chylous: due to obstruction and leakage of the lymphatics draining the gut.

Treatment

Diuretics and paracentesis are still the mainstay of treatment.[4, 5]

Diuretics

Patients with liver metastases (and resulting portal hypertension) are most likely to respond to diuretics,[6] and a serum-ascites albumen gradient >11g/l is a simple way of selecting such patients.[7, 2] The use of spironolactone and furosemide in combination is well established.[7, 8, 9, 10] However, diuretics can cause electrolyte disturbances and hypotension. They also need to be used with caution in patients with poor renal or hepatic function.

Paracentesis

Insertion methods vary from using a peritoneal dialysis (PD) catheter attached to a standard PD collection bag, to using a large bore IV cannula or a suprapubic trochar and catheter. The use of 0.5% bupivacaine as local anaesthetic (LA) for the puncture site allows pain-free drainage for up to 8 hours if necessary. Puncture sites should be away from scars, tumour masses, distended bowel, bladder, liver or the inferior epigastric arteries that run 5cms either side of the anterior midline. The best sites are in the left iliac fossa (at least 10cms from the midline) and in the midline suprapubically (the bladder must be empty). A lateral approach is advisable in patients with distended bowel- marked distension is a contraindication to paracentesis. As a precaution, the LA needle can be used to check if ascitic fluid is present before inserting the drainage tube. Ultrasound evaluation is only required when the diagnosis is uncertain or if it is suspected that the ascites is loculated.[5] In malignant ascites it is safe and effective to drain up to 5 litres over a few hours without intravenous fluid replacement, even in children.[4, 11, 12] Most symptoms can be relieved after only 2 hours drainage, although it may take breathlessness 72 hours before it improves.[13] Many patients can have their paracentesis done at home or as an outpatient.[14] Patients with other causes of ascites can have much larger volumes drained but this needs to be done over several days,[15] and may need an infusion of Dextran.[8] After removal of the catheter any leakage of ascites from the puncture site can be collected with a colostomy bag. Leakage usually stops after 2-3 days and so the patient is spared a suture.

Catheters and shunts

Peritoneal catheters can be inserted and left for periods of up to a month,[16] but are limited by complications.[6] Shunts can be inserted percutaneously,[17, 18] but the long-term use of shunts results in troublesome complications in both cirrhosis and cancer-related ascites.[19, 20] Using a shunt to drain ascites does not give a better quality of life than using regular paracentesis.[6] A disadvantage of repeated paracentesis is the steady loss of albumin.[21] This will result in a low serum albumin and increasing peripheral oedema.

Other treatments

In malignancy, systemic or intraperitoneal chemotherapy has been used,[22] but no large studies have shown a benefit, especially in advanced disease.[4] Intraperitoneal triamcinalone may have a role.[23] Octreotide has been reported to reduce ascites in cancer.[24] In mucinous ascites that is too viscous for tube drainage, an artificial fistula can be formed to drain the ascites.

Ascites

Clinical decision	If YES ⇨ Action
1. Is there doubt that this is ascites?	Signs of ascites: flank dullness, shifting dullness, fluid thrill. • Exclude: other causes of abdominal distension such as bowel obstruction, abdominal tumour or hepatomegaly. • If still uncertain, consider an abdominal ultrasound examination.
2. Is the prognosis short? (day to day deterioration)	• *If free of symptoms*: no further action required. • *If symptoms are troublesome:* Nausea and vomiting: see *Nausea and vomiting* p?? Abdominal stretch pain: -consider a brief paracentesis of 2 litres to reduce discomfort -paracetamol or diclofenac may help discomfort. Consider TENS Peripheral oedema: see cd-6 in *Oedema and Lymphoedema* p??.
3. Is the distension causing distress?	• *If dehydrated, hypotensive or the ascites is due to cirrhosis:* start IV infusion of Dextran 70. • *In the absence of gross bowel distension or abdominal tumour:* Carry out therapeutic paracentesis (see opposite for details): -drain 2 litres over 1 hour, then drain up to a further 3 litres over 3-4 hours (larger volumes will need drainage over 24 hours or more). -remove tube and place ostomy bag over puncture site. -if hypotension develops start IV infusion of Dextran. • *If no fluid is obtained:* the ascites may be loculated. Arrange for drainage under ultrasound control. • *If ascites is too viscous to drain* (eg. ovarian carcinoma): Consider paracentesis with suction. Alternatively ask surgeon to form an artificial fistula (see notes opposite).
4. Can the patient tolerate diuretics?	• *For patients able to take oral medication and with good renal function* Measure abdominal girth at a marked site each week. Start spironolactone 100 mg with furosemide (frusemide) 40mg PO once daily. Increase doses up to 300mg spironolactone and 80mg furosemide to achieve a weight loss of 0.5-1kg/day.[25] Patients with peripheral oedema may tolerate doses up to furosemide 160mg + spironolactone 400 mg daily for a limited period.[9, 26, 27] NB. spironolactone takes up to two weeks to reach a steady plasma level.[28] • *For patients with poor renal function*: Avoid diuretics. Use paracentesis to drain sufficient for comfort. • *If hypotension develops:* Start IV infusion Dextran and reduce diuretic dose. Check serum electrolytes weekly. Continue diuretics at lowest dose that will control symptoms.
5. Is the ascites persisting?	• Consider systemic octreotide or intraperitoneal triamcinalone. • Discuss options with oncologist, eg. systemic chemotherapy, immunotherapy • Discuss options with gastroenterologist, eg. peritoneovenous shunt

Adapted from Regnard and Mannix [29]

cd = clinical decision

B = book; C = comment; Ch = chapter; CS-n = case study-no. of cases; CT-n = controlled trial- no. of cases; E= editorial; GC = Group consensus; I = interviews; Let = Letter; LS = laboratory study; MC = multi-centre; OS-n = open study-no. of cases; R = review; RCT-n = randomised controlled trial-no. of cases; RS-n = retrospective survey-no. of cases, SA = systematic or meta analysis.

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