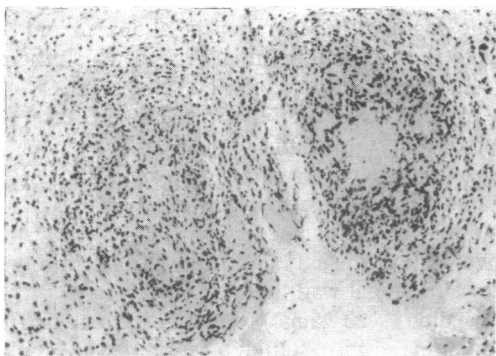


TAPPING ASCITES (1)



Tapping ascites is a simple, safe procedure for which the indications are as follows: (1) to investigate the cause of ascites and when necessary take a specimen of peritoneum for biopsy; (2) to assess bacterial infection of ascitic fluid; and (3) to treat by (a) removing fluid to relieve abdominal discomfort or severe dyspnoea or (b) introducing chemotherapeutic agents.

Tapping the abdomen is used principally as an aid to diagnosis. With modern drugs fluid rarely has to be removed from the peritoneal cavity to relieve severe dyspnoea or the pain of abdominal distention. Occasionally, in a patient with liver disease, fluid may be removed from the abdomen, ultrafiltered, and reinfused into a systemic vein as an adjunct to treatment with diuretics.

Detecting ascites



The clinical signs of fullness in the flanks, shifting dullness, and a fluid wave require the presence of at least 500 ml of free fluid. If the patient can get on to his hands and knees smaller volumes of fluid gravitating to the periumbilical area may be detected, thereby allowing the "puddle" sign to be elicited. Ascites may be diagnosed when none exists, especially in patients who have fluid-filled viscera (for example, fluid in loops of small intestine or in large, lax ovarian cysts), and, conversely, may not be detected when it is localised by peritoneal attachments.

Ultrasound appears to be the most useful investigation in detecting small quantities of fluid especially when these are localised. Table I shows the principal causes of free fluid in the abdomen.

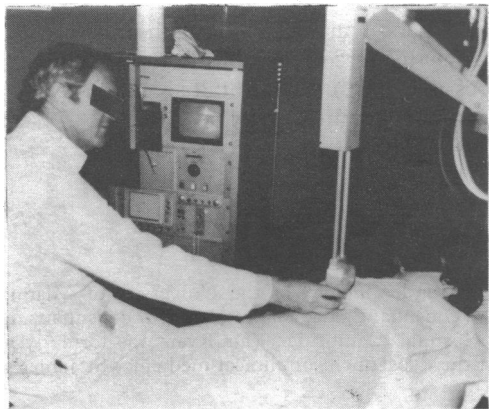
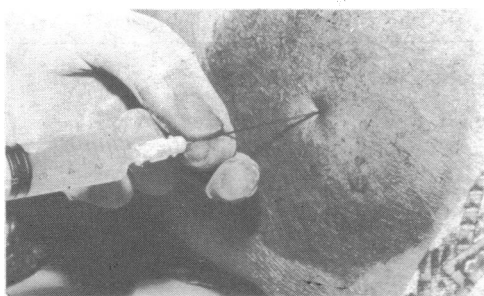


TABLE I—Causes of ascites

Associated with chronic disorders	Associated with acute abdomen
Common causes: Cirrhosis of the liver Abdominal cancer Tuberculous peritonitis Heart disease (especially constrictive pericarditis)	Bacterial peritonitis Trauma (haemoperitoneum) Acute pancreatitis Strangulated viscera (especially intestine)
Rare causes: Liver disease without cirrhosis Hepatic vein occlusion Severe hepatitis Chronic pancreatic disease Myxoedema Chronic renal disease Polyserositis (for example, systemic lupus erythematosus) Other inflammatory conditions (for example, Crohn's disease)	In the neonate (extremely rare) Renal abnormality (with leakage of urine) Intestinal abnormality (for example, obstruction with perforation) Cardiac failure Cirrhosis Infection (for example, toxoplasmosis)

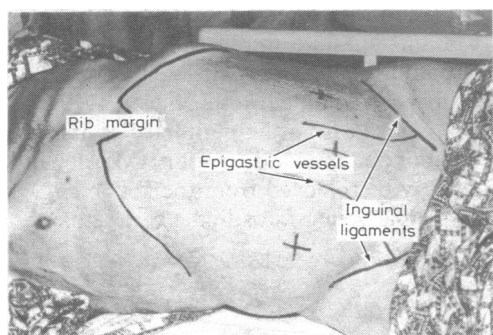
## Precautions

### Hepatitis



Provided sterile methods are used and a few precautions taken, passing a fine needle into the peritoneal cavity is totally safe even when fluid cannot be aspirated. The removal of large quantities of fluid is rarely necessary and may lead to hypovolaemia and, consequently, to oliguria and hyponatraemia. Special care must be taken in handling instruments and aspirated fluid when treating patients who have viral hepatitis or who give a positive reaction to hepatitis B antigen.

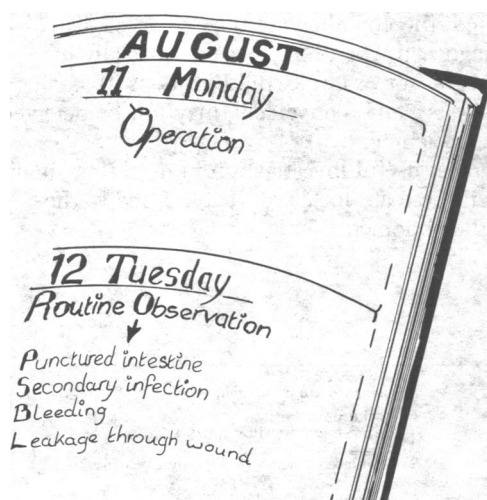
## Procedure



Explain the procedure to the patient and get him to empty his bladder. Ask him to lie relaxed in a supine position. Re-examine the abdomen and select a site for puncture. (Usually this site will be in an area in which there is shifting dullness and under which there appear to be no solid organs. The iliac fossae, away from the inferior epigastric blood vessels and scars, are the areas most often used, and it may be helpful for the patient to roll slightly to the side of the operation in order to maximise the area of dullness. Aspiration through the less-vascular linea alba is occasionally used for therapeutic procedures and before laparoscopy.)

Put on a mask and sterile gloves. Clean the skin and infiltrate 3-6 ml of local anaesthetic into the anterior abdominal wall down to the parietal peritoneum. Attach a long fine needle (19-23 gauge) to a large syringe and introduce the needle into the abdominal cavity. (Often a sense of give is felt in passing across the anterior and posterior fascial layers and, to a less extent, in perforating the peritoneum.) Aspirate gently. Fluid will flow easily into the syringe if the tip of the needle is correctly placed. If no fluid is obtained reposition either the patient or the needle. Remove up to 50 ml of fluid, withdraw the needle, and apply a simple dressing to the skin. In patients with suspected tuberculosis it is worth while taking much larger quantities of fluid and using the centrifuged deposit to isolate the causative organism.

## Aftercare and complications



Tapping ascites rarely leads to complications. Inadvertent puncture of the intestine is rare, and even if intestinal contents are aspirated secondary infection is most unusual. Routine observation for 24-28 hours is sufficient aftercare to detect the exceptionally rare complications of bleeding or infection. Scrotal oedema has been described after paracentesis, especially when tapping of ascites is associated with laparoscopy: it responds to simple management.

In patients with malignant ascites persistent leakage through puncture wounds is sometimes a problem. For this reason incisions in the abdominal wall should be kept as small as possible and sufficient fluid should be removed to reduce the pressure in the abdominal cavity.

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