ASPIRATION FOR ASCITES

Paracentesis of the abdomen consists in puncturing the peritoneal cavity by means of a trocar and cannula and withdrawing the fluid therein contained. It is an operation attended by practically no risks and can safely be repeated many times in the same individual when necessary.

Indications.—The abdomen may be aspirated in cases of ascites when the physical signs show the presence of fluid, and distention

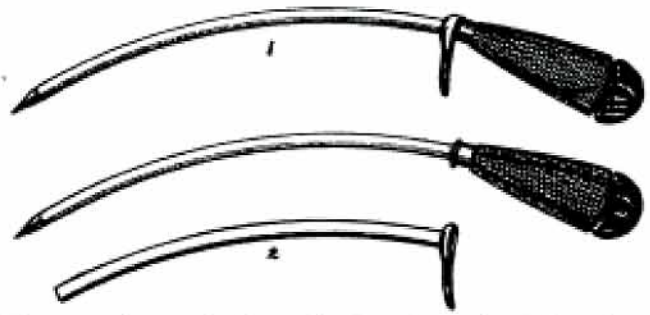

FIG. 297.—Trocar and cannula for aspirating the peritoneal cavity. 1, Trocar and cannula assembled; 2, showing trocar removed from the cannula.

becomes distressing from pressure upward upon the diaphragm. It should also be performed when the fluid reaccumulates after a previous tapping and gives rise to pressure symptoms.

Instruments, Etc.—A straight or slightly curved cannula and trocar of fair size—about 1/16 to 1/8 inch (1.5 to 3 mm.) in diameter—should be used. The trocar is spear-pointed and should fit the cannula perfectly so as to prevent the point of the latter catching in the tissues during its introduction (Fig. 297). An excellent form of

cannula, and one frequently used, contains a lateral opening about 1/8 inch (3 mm.) from its end, for the purpose of avoiding stoppage of the escaping fluid, should the intestines or omentum obstruct the end opening of the instrument.

If desired, the aspirating apparatus of Potain or Dieulafoy (page 286) may be used in place of the simple trocar.

In addition a scalpel to make a small preliminary incision, a sterile abdominal binder, a many-tailed bandage or large towel, and collodion and cotton or sterile gauze and adhesive plaster for the dressing should be provided.

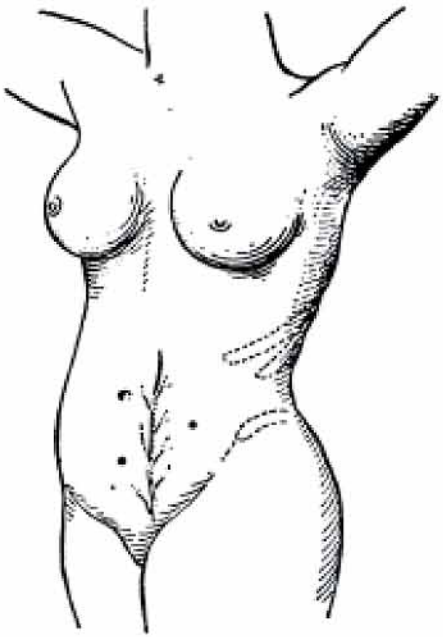

FIG. 298.—Sites for aspiration of the peritoneal cavity.

Site of Puncture.—The selection of a location free from vessels and where the abdominal wall is thin is desirable. Usually a point in the linea alba midway between the umbilicus and pubes is selected, but the puncture may be at a point in the linea semilunaris just outside the rectus muscle at the junction of the outer and middle thirds of a line between the umbilicus and the anterior superior iliac spine (Fig. 298). A puncture at either of these sites will avoid the deep epigastric vessels. Should repeated punctures be made, it will be of advantage to change the site a little each time so as to avoid entering adhesions which may have been produced by a previous puncture.

Quantity Withdrawn.—Whether all the fluid should be removed at once will be determined by the condition of the patient and the manner in which he bears the operation. As a general thing there is no harm in removing all the fluid, provided it is not evacuated too rapidly.

Position of Patient.—The patient should sit upright on the edge of the bed, if possible, or, if unable to do this, he may lie propped up in a semirecumbent position so as to favor gravitation of the fluid to

FIG. 299.—Aspiration of the peritoneal cavity. First step, application of the abdominal binder.

the lowest level of the peritoneal cavity. When the puncture is made in the linea semilunaris, the patient should lie upon the side on which the puncture is made.

Preparations.—*The bladder and bowels should always be empty before operation.* The abdominal wall is shaved and the site of puncture is painted with tincture of iodin. The operator's hands should likewise be sterilized, and the trocar is to be boiled.

Anesthesia.—Local anesthesia with ethyl chlorid, ether, ice and salt, or infiltration with a few drops of a 0.2 per cent. solution of cocain or a 1 per cent. solution of novocain may be used.

Technic.—A broad abdominal binder, or a Scultetus bandage with a central slit corresponding to the point where the trocar is to be introduced, is first fitted about the patient's abdomen (Fig. 299) and

is to be tightened at intervals during the operation, so that uniform pressure may be applied while the fluid is flowing off and a sudden overfilling of the abdominal vessels with blood prevented. With a scalpel the skin is incised for a distance of 1/4 inch (6 mm.) at the spot chosen for the puncture (Fig. 300), and the trocar is slowly and steadily inserted, with the index finger held along the instrument as a guide to the depth it is to enter, and to prevent it from being suddenly forced in too far (Fig. 301). As soon as it is judged that the peritoneal cavity has been reached, the trocar is withdrawn and the fluid is permitted to escape.

FIG. 300.—Aspiration of the peritoneal cavity. Second step, nicking the skin at the point of puncture.

The fluid should be evacuated slowly, and, if it flows too freely, it is well to stop the flow at intervals by placing the finger over the end of the trocar, in order to allow the abdominal contents to adapt themselves to the changed conditions. If the stream is suddenly stopped by the intestines or omentum occluding the end of the instrument, a slight turn of the cannula or a change in its position may be sufficient to relieve the obstruction; if not, it may be necessary to clear the lumen by passing a sterile probe through it. As the fluid is withdrawn, and the distention of the abdomen decreases, necessary support is given to the lax abdominal walls by drawing the binder tighter. Syncope may be thus avoided; should it occur, how-

ever, the escape of the fluid must be temporarily stopped by placing the finger over the end of the trocar and the patient's head must be lowered, care being taken to see that air does not enter the trocar while this is being done.

When fluid ceases to flow, the cannula is quickly removed and, if a large opening has been made by the trocar, the skin may be drawn together by a subcutaneous stitch and the line of incision sealed with collodion and cotton. If there seems to be a good deal of oozing of fluid along the track of the trocar, however, a sterile

FIG. 301.—Aspiration of the peritoneal cavity. Third step, showing the method of inserting the trocar.

gauze dressing, held in place with rubber adhesive plaster and changed as often as necessary, will be found more satisfactory. After the aspiration the patient should be kept in bed for at least twenty-four hours.