Methods and techniques

Biopsy of the peritoneum

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In various abdominal affections with ascites the peritoneal biopsy, as was shown by Donohoe, Shnider, and Gorman (1959) and Donohoe, Shnider, Uzer, and Matthews (1962) and Cope and Bernhardt (1963), is a very useful diagnostic procedure. Vim-Silverman, Abrams, and Cope biopsy needles were the instruments employed by these authors, but a new instrument and technique have been derived here for biopsy of the parietal peritoneum in patients with ascites, by which specimens of peritoneal tissue for histological examination can be easily and safely obtained.

INSTRUMENT

The biopsy instrument (Fig. 1)¹ consists of a 2.8 mm. cannula with a sharp cutting edge and, at its proximal end a metal disc which facilitates the handling of the instrument; a pointed stylet; and a biopsy mandrin fitting into the cannula, surpassing it for 8 mm., and having at the end part a lateral groove with a sharp cutting edge.

TECHNIQUE OF THE BIOPSY

The biopsy (Fig. 2) is performed in the left lower quarter of the abdominal wall at the point usually selected for paracentesis. The skin and other tissues down to the peritoneum are infiltrated with a local anaesthetic. After the skin has been pierced with a lancet, the cannula is introduced into the abdominal cavity with the aid of a stylet. The stylet is removed and an appropriate amount of fluid is obtained for laboratory studies. The cannula is then turned so that its end part comes in the parallel position with the parietal peritoneum. At this point, the biopsy mandrin, with the groove turned toward the inner surface of the abdominal wall, is inserted into the cannula. The biopsy mandrin is held firmly with one hand whilst, with a finger of the other, the abdominal wall is pressed against the tip of the instrument. By pushing the cannula forwards, the peritoneum that was pressed into the groove is cut off. The biopsy mandrin is then withdrawn and the fragment of the peritoneum removed from the groove. Varying the direction of the cannula the procedure can be repeated and several fragments obtained.

EXPERIENCE AND CONCLUSION

With the instrument and technique described, the peritoneal biopsy was performed with technical ease and without a failure in 68 patients. In each of them from four to eight fragments of the peritoneum were obtained. The specimens were sufficiently large and little distorted

¹Manufactured by Karl Storz Co., Tuttlingen, Germany.

FIG. 1. Instrument for peritoneal biopsy. Components: cannula, stylet, and biopsy mandrin.

(Figs. 3 and 4). A specific diagnosis was made in 10 patients out of 10 (100%) with peritoneal tuberculosis and in 18 patients out of 26 (69%) with peritoneal malignancy. No complications occurred.

Peritoneal biopsy, when properly performed, is a valuable, simple, and safe procedure. Possible accidents such as haemorrhage and injury of a viscus can largely be avoided by excluding from the procedure patients with a pronounced bleeding tendency; exploring the site of biopsy for the presence of blood vessels during the performance of anaesthesia; not inserting the cannula too deep into the abdominal cavity; and verifying that the cannula does not become blocked (free flow of fluid) after it has been turned.

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FIG. 2. Main sequence of the peritoneal biopsy: (1) cannula is introduced into the abdominal cavity, (2) cannula is turned, (3) biopsy mandrin is inserted into the cannula and the abdominal wall is pressed against the tip of the instrument, (4) by pushing the cannula forwards a sample of peritoneal tissue is obtained.

REFERENCES

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FIG. 3. Low-power view of a peritoneal biopsy specimen. Adenocarcinoma. Haematoxylin and eosin $\times 30$.

FIG. 4. Low-power view of a peritoneal biopsy specimen. Tuberculosis. Haematoxylin and eosin $\times 30$.