Percutaneous Needle Biopsy in Exudative Ascites

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Abstract

Seventy-two patients with exudative as cites were subjected to percutaneous needle biopsy of peritoneum. The overall diagnostic yield was 64%, with the commonest finding being caseous granuloma (39%), followed by metastatic carcinoma (25%). The procedure was safe and easy to perform on the bed side. Peritoneal tissue was obtained in all cases, without any major complications (JPMA 46:260, 19%).

Introduction

As cites is commonly encountered in medical wards. Every year 150- 200 cases are admitted in our unit. Ascites can be exudative ortransudativc on the basis of the protein content and cell count. It is exudative when protein content is more than 3.0 G%. For transudativc ascites, a cause is easy to find as most cases show the stigmata of the underlying disease. Cirrhosis of liver is by far the commonest cause of transudate ascites. Though exudative as cites with an apparent evidence of the underlying disease is simple to diagnose, still in about 30% of cases, a cause is not obvious despite a thorough history, clinical examination and ultrasonography. These are the cases which need further diagnostic work up in the form of more invasive and complicated procedures like laparoscopy or laparotomy. In our country where diagnostic facilities are scarce, patients are in large numbers and technical knowledge limited to specialized centres, these patients become a diagnostic dilemma. In such conditions, needle peritoneal biopsy is an important diagnostic procedure for a conclusive diagnosis. It requires minimal tools and very little technical expertise. Pentoneal biopsy was first performed by Donohoe et al[1] using a modified Vim Silverman needle. Later Abrams and Cope needles were used[2]. In 1967 Levine[3] performed this procedure on 36 patients and diagnosed tuberculosis in 20, with no false negative results. The procedure has gained acceptance in USA arid India and many workers have utilized it with a high diagnostic yield and no complications[4-6]. This study reports our experience of percutaneous needle biopsy of pentoncum in the diagnosis of as cites.

Patients and Methods

Seventy-two patients with as cites, with undetermined etiology, of both sexes, were studied. Histories were recorded and all patients examined clinically. Blood count, ESR, urinalysis, blood urea, blood sugar, LFTs and x-ray chest were done in all cases and abdominal ultrasound performed for confirmation of ascites and to identify a possible cause. Patients prothrombin time (PT), platelet count and bleeding time were also done prior to needle biopsy. Diagnostic aspiration of ascitic fluid was done and samples collected in two bottles. One was sent for biochemistry, gram staining, ZN stain and cells type and number. The other was examined for malignant cells in 10% formalin as preservative. Fluid was considered exudative when its protein content was 3.0 G% or more and a cell count 200/cm or more. Informed consent was obtained for percutaneous needle biopsy and procedure explained to patients. Patients were asked to lie supine with one pillow under the head. Left lower quadrant of abdomen was cleaned and draped. 2%Lignocaine was used for local anaesthesia and it was infiltrated

as far deep as the peritoneum. A small skin incision (0.5 cm) was given with a disposable surgical blade. Abrams needle was pushed into the peritoneum with rotatory movement and fluid aspirated after reaching the peritoneal cavity. Abrams needle was withdrawn as far, as to engage the peritoneal surface. An assistant pushed the abdominal wall against the needle Lip to facilitate engagement of the needle as employed by Jenkins[6]. After this the procedure followed the same steps as taken during a pleural biopsy and 2-3 pieces of peritoneum were obtained. Skin incision was closed with absorbable catgut. If any leak was found, anotherdeep stitch was givenand dressing done. Patients were advised to apply pressure on the operation site and were observed in the ward for 24-48 hours.

Results

A total of 72 patients were subjected to peritoneal biopsy of which 43 were females and 29 males. The age ranged from 18 to 65 years with a mean of 44 years. All fluids were exudative and 10 of them showed malignant cells. Peritoneal tissue was obtained in all 72 cases. Twenty-eight (3 9%) cases showed caseating granuloma suggestive of tuberculosis, 18 (25%) metastatic carcinoma, 16 (22%) non-specific inflammation and 10 (14%) cases did not reveal any change in the peritoneum. Results of the type of cells and malignant cells in the fluid are tabulated in

Table I. Peritoneal fluid cytology.

Type of cells	Number of patients	Percentage
Predominantly neutrophils	5	7
Predominantly lymphocytes	57	79
Malignant cells	10	14
Total	72	100

Table I and those of histopathology of peritoneal biopsies in Table II.

Table II. Peritoneal biopsies results.

Histological findings	Number of patients	Percentage
Caseous granuloma	28	39
Metastatic carcinoma	18	25
Chronic non-specific inflammation	16	22
No significant change	10	14
Total	72	100

No serious complications were encountered. One patient developed ahematoniaat the site of incision that resolved with conservative treatment in a weeks time. Pain at the site was reported by 7 patients

which responded to simple analgesics.

Discussion

The results of the study showed a conclusive tissue diagnosis in 46 (64%) cases with exudative ascites, in whom otherwise, a more traumatic procedure would have been required. The procedure was also found to be very safe and simple to perform on bed side without the need of sophisticated and expensive instruments. The technique was very effective in diagnosing caseous granulomas, most likely tuberculous and the results of the study are comparable to those reported by others[1]. In these cases a bacteriological diagnosis is inconclusive and culture studies require a period of 4 to 6 weeks. Malignant cells were detected in 14% of fluids whereas metastatic carcinoma was reported in 25% of the peritoneal biopsies. This gives an 11% improved diagnostic yield. Similar observations were reported by Jenkins[6].

It could be concluded from the study that percutaneous peritoneal biopsy is a simple and safe bedside procedure in selected cases. It provides a quick and accurate diagnosis especially for tubercuolous peritonitis and malignancies.

References

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