An aid in diagnosis and management of acute abdomen -Paracentesis peritonii (A study on 123 cases)

*Dr. M. Shafique.**

M.B.B.S., M.S. (Gen, Surgery)

*Dr. B.C. Sinha,***

M.B.B.S. M.S. (Pat), MRSH. (London)

Introduction:

In modern surgical practice, Paracentesis peritonii plays a valuable role in lessening the morbidity and mortality rate in cases of acute abdomen. This procedure was looked upon with awe and abhorred by surgeons earlier but reports about its usefulness and safety has made this procedure of diagnostic aid more palatable to surgeons of newer generations. Every Surgical procedure, be it minor or major has its pit falls, but if done by experienced hands and using proper methodical steps may result into a boon in disguise. This procedure is in vogue in many other countries but was decried in India. and U.K. (According to Morris 1966).

An accurate peritoneal tap is very helpful in the diagnosis of intra abdominal pathology in cases of acute abdomen. It helps in detection of intraperitoneal haemorrhage in patients who have sustained trauma. It also helps in detection of acute pancreatitis, intestinal obstruction, peritonitis, tuberculous abdomen, carcinomatosis peritonii, burst liver abscess etc.

* Registrar, Department of Surgery, Bhagalpur Medical College Hospital, Bhagalpur, Bihar (India)

** Assistant Professor, Department of Surgery,
Bhagalpur Medical College & Hospital, Bhagalpur (Bihar) India

NOTE:- Any correspondence may please be done to author No. 1

A ureteral catheter was passed per trocar by Solomen in 1906 but a detailed report was published in 1926 by Neuhof and Cohen. Several workers like Keith et al (1950) Strickler et al (1958) Giacobine and Siler (1960) Drapanas and Mc Donald in 1960, Roots et al 1965, Morris (1966) published their findings.

Wengenstein 1942. Moretz and Erickson 1954 discussed about the possibility of intestinal puncture during this procedure and found no untoward effect or leakage, when these were explored later.

In the present study six quadrant tapping was performed as per necessity. 123 cases of acute abdomen, both traumatic and non traumatic were studied.

Method:-

In 123 cases of acute abdominal emergencies including traumatic abdomen, diagnostic paracentesis was performed from October 1982 to December 1983. The four quadrant tapping was done as advocated by Byrne (1956) and the bilateral flank taps were done as advocated by Drapanas and Mc Donald (1961). This later method was more easily performed and equally reliable.

The patients were catheterized and placed in supine position. After skin preparation with Betadine lotion and spirit, 1% solution of xylocaine was infiltrated subcutaneously. Then a 20 gauge, short bevelled spinal needle with 10 ml syringe containing saline was used. The needle was inserted at the sites shown in the figure 1 & 2. Gentle suction was applied. The direction of the needle was changed as per requirement and gentle advancement done. The saline in the syringe avoids accidental injection of air in the peritoneal cavity. If 0.5 ml or more fluid was aspirated then some intra abdominal pathology was indicated. Aspiration of blood, bile, purulent fluid or gastrointestinal content made the tap positive and the aspirate was sent for bile staining, estimation of amylase, smear and culture. Therefore fluid aspirated other than blood was sent for culture and microscopic examination.

Results:-

Frank blood, which did not clot on standing is indication of injury to liver, spleen, pancreas, mesentery and omentum etc. Blood stained fluid is suggestive of gangrenous pathology, malignancy or acute pancreatitis. To rule out acute pancreatitis, serum amylase estimation was done. High serum amylase report helped us in withholding our knife and instituting conservative treatment (Keith et al 1950). Turbid purulent or some times chocolate

colour pus, aspirated suggested either an inflammatory lesion like liver abscess rupture or perforation of the gut. To differentiate again amylase estimation of the aspirate was done. Absence of amylase suggests liver abscess and is interpreted alongwith radiological finding. Presence of amylase leads us to suspect perforation of a hollow viscus this too was linked up with radiological picture.

Turbid or sero sanguinous fluid leads us to deduce acute cholecystitis or ileocaecal tuberculosis with obstruction (Radiological findings, ESR and laparotomy confirmed the diagnosis).

Negative paracentesis does not mean that the patient has no intra abdominal pathology But it helps us in justifying conservative treatment if no acute emergency for laparotomy is indicated.

Our findings on the 123 cases studies are given in table I and II.

Discussion:-

The cases which showed frank blood on tapping were clear cut indication for laparotomy. Confirmation of our findings was done by laparotomy. Three cases had injury to liver where haemostasis and repair was done. Two cases had injury to spleen. Splenectomy was done in these cases. One case had injury to the region of head of pancreas. Haemostasis and over running suture were given. Nine cases had injury to omentum, haemostasis was done. Four cases had mesenteric tear leading to haemorrhage. This was also ligated and haemostasis done.

Out of ten cases who emitted blood staining fluid on tapping, six cases, had strangulation of different parts of the gut due to bands, volvulus or intussusception. Resection and anastomosis was done in these cases. Two cases were diagnosed on laparotomy as malignancy viz, one of lymphosarcoma and one of primary cancer of liver. Again two cases had very high serum amylase and recovered on conservative treatment. They were treated for acute pancreatitis.

Out of 63 cases having turbid or purulent fluid on tap 58 cases had perforation of the gut. In most cases gas under the right dome of diaphragm was found on X-ray. Laparotomy and repair was done. In five cases of this group there was tenting of the right dome of diaphragm and responded to conservative treatment on the line of liver abscess.

Table I

Types of Fluid on Tapping	Provisional diagnosis	Confirmation of diagnosis
1. Frank blood	19	19
2. Blood Stained fluid	10	10
3. Turbid or Purulent	63	63
4. Yellowish or Serosanguinous	9	9
5. Negative tap	22	2
	123	103

Table II

Lesions	No. of cases
1. Injury of liver	3
2. Injury of spleen	2
3. Injury of pancreas	1
4. Injury of Omentum	9
5. Injury of Mesentery	4
6. Intestinal strangulation	6
7. Malignancy	2
8. Pancreatitis	2
9. Perforation of hollow viscus	58
10. Threatened rupture of liver abscess	5
11. Acute cholecystitis	4
12. Koch's abdomen	5
13. Laparotomy on negative tap	2
Total	103

Nine cases showed yellow or serosanguinous fluid in their tapping. In five cases, the X-ray chest showed tuberculous lesions and the E.S.R. was very high. Out of this, three cases showed evidence of obstruction and laparotomy revealed Neocaecal tuberculosis with stricture. Operative treatment was done. In the rest two cases treatment with antituberculous drugs gave good result. In this same group four cases on clinical examination were treated

on the line of acute cholecystitis by conservative means and they responded well.

Out of twenty two cases of negative tap, 20 responded with conservative treatment. In two cases though the tap was negative our clinical examination indicated laparotomy. Hence laparotomy was performed and the one case had perforation in the caecum and other had ragged tear in the left lobe of Liver. Repair was done in these cases.

Summary:-

Paracentesis peritonii is a useful safe and accurate procedure in patients with undiagnosed acute abdomen, with or without traumatic history. This procedure may also be practiced in rural area where facilities for radiological aid are absent. In our series, every positive tap showed an intra abdominal lesion, which resulted in early and proper treatment. A negative tap does not rule out intraperitoneal pathology and must be evaluated along with other clinical findings. We advocated the case of peritoneal tapping as a bedside procedure and must be extensively used without apprehension.

Figure I

Showing the site of tapping in the four quadrants of the abdomen.

Figure II

Showing the site for bilateral flank taps, mid way between costal margin and iliac spine.

Reference:-

1. *Byrnie R.V.* 1956 - Diagnostic abdominal tap S.G.O. 102, 362
2. *Drapanas T and Mc Donald J.* 1962 - Peritoneal tap in abdominal trauma. *Surgery* 50, 742.
3. *Giacobine J.W, and Siler V.E.* 1960 - Evaluation of diagnostic abdominal paracentesis with experimental and clinical studies S.G.O. 110, 676.
4. *Keith L.M. Zollinger R.M. and Mc Cleery R.S.* 1950 - Peritoneal fluid amylase determination as an aid in diagnosis of acute Pancreatitis. *Arch. Surg.* 61, 930
5. *Moretz W.H. and Erickson W.C.* 1954 - Peritoneal tap as an aid in the diagnosis of acute abdominal disease. *Amer Surg.* 20, 363.
6. *Moriss P.J.* 1966 - Diagnostic paracentesis of acute abdomen. *Brit J. Surg.* 53, 707.
7. *Neuhof, H. and Cohen, L.* 1926 - Abdominal puncture in the diagnosis of acute intraperitoneal disease. *Ann. Surg.* 83, 454.
8. *Root H.D. Hanser, C.W. Mckinley C.R. LaFave, J.W. and Mendiola, R.P. Jr,* 1965 - Diagnostic Peritoneal Lavage. *Surgery* 57:632.
9. *Strickler, J.H. Erwin, P.D. and Rice C.O.* 1958 - Diagnostic paracentesis. *Arch. Surg.* 77 859.
10. *Wangensteen O.H,* 1942 - Intestinal obstruction, 2nd Ed. Spring field, Illinois.