

# THE Journal of Obstetrics & Gynaecology of India

VOLUME XXVI, No. 4

AUGUST 1976

## ACTIVE TREATMENT IN SEPTIC ABORTION

by

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### Introduction

Controversy still exists on the indications of surgical exploration in septic abortion. The active treatments in septic abortion, so far generally accepted are, evacuation of uterus under antibiotic cover even in febrile condition and, drainage of pus from pouch of Douglas if there is any collection in this area. But there is a great deal of hesitancy in accepting the role of abdominal exploration in septic abortion complicated with peritonitis and hypotension.

The purpose of this report is to record and analyse experience with laparotomy on 8 cases of septic abortion complicated by peritonitis. These cases were treated by the authors at N. R. S. Medical College, Calcutta during the period from 1st January 1972 to 31st December, 1973. During the same period total number of

septic abortion cases admitted was 170, out of which 28 had grade III infection, or in other words were complicated with peritonitis or septic hypotension. Hence the incidence of laparotomy in relation to total number of septic abortion was 4.7% while the incidence in relation to cases in grade III was 28.5%.

### Analysis and Reports of Cases

TABLE I  
*Age, Marital Status and Parity*

TABLE I(a)  
*Age*

| Age Group            | No. of cases |
|----------------------|--------------|
| 20 years and below   | 2            |
| 21 years to 30 years | 3            |
| 31 years to 40 years | 3            |

TABLE I(b)  
*Marital Status*

| Marital Status | No. of cases |
|----------------|--------------|
| Unmarried      | 2            |
| Married        | 5            |
| Widow          | 1            |

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Accepted for publication on 11-1-1975.

TABLE I(c)  
*Parity*

| Parity      | No. of cases |
|-------------|--------------|
| Multiparous | 5            |
| Nulliparous | 1            |
| Unmarried   | 2            |

There was no unusual distribution of age; the minimum was 18 and the maximum 40. Amongst married women, all were multiparous except one who was nulliparous and was married for 2 months.

TABLE II  
*Duration of Pregnancy*

| Duration of pregnancy | No. of cases |
|-----------------------|--------------|
| 6 weeks               | 1            |
| 6 to 12 weeks         | 5            |
| 12 to 16 weeks        | 2            |

TABLE III  
*History and Nature of Interference*

| History of interference | No. of cases | Instrumental | Indigenous abortifacient root |
|-------------------------|--------------|--------------|-------------------------------|
| Admitted                | 6            | 4            | 2                             |
| Not admitted            | 2            | -            | -                             |

TABLE IV  
*Clinical Findings*TABLE IV(a)  
*General*

| (a) Systolic blood pressure in mm. of Hg. | 75 and below | 75 to 100       | 100 and above    |               |
|---|--------------|-----------------|------------------|---------------|
| No. of cases                              | 3            | 2               | 3                |               |
| (b) Pulse rate per minute                 | below 120    | 120 to 140      | 140 to 160       | Imperceptible |
| No. of cases                              | 1            | 3               | 3                | 1             |
| (c) Temperature                           | Below 98°F   | 98°F to 100.4°F | 100.4°F to 104°F | above 104°F   |
| No. of cases                              | 1            | 2               | 4                | 1             |

Only one patient married for 2 months had history of amenorrhoea of less than 8 weeks' duration. She concealed the true history and presented with clinical features resembling those of ectopic pregnancy. The diagnosis of interfered uterine pregnancy could be made only after laparotomy.

It is further observed from Table II that complicated septic abortion was more common when duration of pregnancy was 12 weeks or less. This proves that interference even in the earlier stages of pregnancy carries serious risk of septic complications. History of interference was admitted in 6 out of 8 cases and it is probable that patients disclose the information only under distress.

## General contd.

| (d) Amount of urine during first 24 hours of admission | More than 1000 cc. | 500 to 1000 cc. | Less than 500 cc. |
|--|--------------------|-----------------|-------------------|
| No. of cases   | 5                  | 3               | Nil               |

*General*

It is observed from Table IV that systolic blood pressure below 100 mm. of Hg. was noted in five cases. In three cases, the systolic blood pressure was less than 75 mm. of Hg. With marked hypotension, the temperature was either normal or even below normal. In 3 cases, the urine output was less than 1000 cc. per day and two of them had marked hypotension.

patient except one (the case where diagnosis was mistaken for ectopic), was treated conservatively and when the general condition did not improve or started deteriorating exploratory laparotomy was performed.

Initial conservative management consisted of collection of vaginal discharge for bacteriological examination, blood for estimation of haemoglobin, total and

TABLE IV (b)  
*Local Signs*

| Abdominal distension | Generalised |                  | Localised (Lower abdomen) |          |
|----------------------|-------------|------------------|---------------------------|----------|
| No. of cases         | 7           |                  | 1                         |          |
| Bowel sound          | Normal      | Hyperperistalsis | Sluggish                  | Absent   |
| No. of cases         | Nil         | Nil              | 6                         | 2        |
| Vaginal discharge    | Purulent    | Offensive        | Sanguinous                | Blackish |
| No. of cases         | 2           | 5                |                           | 1        |

*Local*

All cases had moderate to gross abdominal distension. Bowel sounds were either sluggish or absent. One case had distension localised to lower abdomen. No case had collection in pouch of Douglas except one, who had localised distension in lower abdomen. Proper pelvic examination was not possible partly due to tenderness and partly due to abdominal distension.

Prior to surgical interference, every

differential count and urine for routine check-up. Intensive medical treatment was instituted in each one. This consisted of gastric suction, intravenous infusion and blood transfusion where necessary and antibiotics. Antibiotics of choice were parenteral chloramphenicol and streptomycin. Vitamins and hydrocortisone were used as supportive therapeutic measures. Mephentine was used where systolic blood pressure went below 70 mm. of mercury.

TABLE V  
Investigation

| Haemoglobin level | 5 gm.% or less | 5-7 gm.% | 7 gm.% and above |
|-------------------|----------------|----------|------------------|
| No. of cases      | 1              | 4        | 3                |

  

| Causative organism isolated | E. Coli | Strepto Haemolyticus | Staph. Pyogenes | Klebsiela | Report not available |
|-----------------------------|---------|----------------------|-----------------|-----------|----------------------|
| No. of cases                | 3       | 1                    | 1               | 1         | 2                    |

Minimum Hb% level was 5 gm. per cent. This low haemoglobin level was observed in the case who had mistaken diagnosis of ectopic pregnancy. E. Coli was isolated in the vaginal swab culture in 3 cases who had either marked hypotension or, oliguria.

Posterior colpotomy was performed in one case only, who had a collection in pouch of Douglas. She improved temporarily, but abdominal distension reappeared. Initially bowel sounds were 'Metallic' in nature but gradually sounds became sluggish and urine volume diminished. Laparotomy in this case was performed 120 hours after admission.

for laparotomy and tempted further to continue with the conservative treatment.

The case with 'Segmental Ileus' had the distension diminished within 48 hours with conservative treatment. But abdomen was not absolutely normal and at places peristaltic sounds were normal while at other places sounds were either sluggish or absent. Further conservative treatment for 24 hours did not bring about much change and laparotomy was performed.

The case with septic hypotension and oliguria was admitted with initial diagnosis of intestinal obstruction. Vaginal

TABLE VI  
Indications of Laparotomy and Duration of Conservative Treatment

| Indication                                      | No. of cases | Duration of Conservative Treatment  |
|---|--------------|-------------------------------------|
| Persistent Peritonitis                          | 4            | 48 hours—3 cases<br>96 hours—1 case |
| Evidence of mechanical Intestinal obstruction   | 1            | 120 hours                           |
| Evidence of 'Segmental ileus'                   | 1            | 64 hours                            |
| Persistence of septic hypotension with oliguria | 1            | 64 hours                            |
| Diagnosis confused with ectopic                 | 1            | within 6 hours of admission.        |

In all cases conservative treatment was given a fair trial; in fact in two cases this was dragged too far (96 hours and 120 hours). Temporary improvement in these two cases delayed the decision

bleeding, low, urine output, persistent shock and cervical signs of recent interference established the diagnosis of septic abortion. Laparotomy in this case revealed Pyometra without any evidence

of mechanical intestinal obstruction Laparotomy findings of fundal avulsion (Table VII). and gangrene of the margin of the uterus

TABLE VII  
*Laparotomy Findings and Type of Operation Performed in Relation to Outcome*

| Laparotomy Findings  | No. of cases | Operation performed  | Outcome   |
|--|--------------|--|---|
| Pus in the peritoneal cavity   | 3            | Drainage through flanks                                    | One case died after 24 hours, 2 uneventful recovery.          |
| Uterine perforation and pus in the peritoneal cavity   | 1            | Drainage of pus through flanks and repair of uterine rent. | Uneventful recovery.  |
| Purulent exudate and "Bread and butter" adhesion of loops of small intestine   | 1            | Separation of adhesions and drainage of pus.               | Developed hypotension, oliguria and paralytic ileus-recovery. |
| Loop of small intestine adherent to a rent on the posterior wall of the uterus (rent was sealed by the adherent loop of intestine) | 1            | Separation of loop of intestine.                           | Died on 7th day (Paralytic ileus)                             |
| Fundal avulsion with gangrene of the everted margins of the uterus   | 1            | Hysterectomy   | Hypotension and paralytic ileus recovery.                     |
| Pyometra with intramural exudate   | 1            | Hysterectomy   | Uneventful recovery.  |

One case died within 24 hours following simple drainage of pus. In this case, conservative treatment was continued for 96 hours, though her condition started deteriorating after 48 hours. Vaginal swab culture revealed *E. Coli* infection. The other cases who had a loop of small intestine adherent to the uterine rent died on the 7th postoperative day due to paralytic ileus. Decision of laparotomy in this case was delayed for 120 hours because she showed temporary signs of improvement with posterior colpotomy.

Six cases survived. In 2 cases, the postoperative period was stormy. In one case decision was made hastily on the erroneous diagnosis of ectopic pregnancy.

entirely justifies the surgical procedure undertaken, but it must be admitted that reasonable antibiotic coverage with restoration of electrolytes prior to surgery would have made the prognosis better. In the other case perhaps, conservative treatment was prolonged a little too far. She had evidences of 'Segmental Ileus' and on laparotomy, adhesion amongst loops of small intestine was noted. Earlier laparotomy and drainage of pus, could have reduced the morbidity in the post operative period.

#### Comments

Peritonitis as a complication of septic abortion is a well recognised clinical en-

tity; yet its specific management has received little attention. Conventional conservative treatment is no doubt justified in the majority of cases, but generalisation of this form of treatment is not judicious.

The cases reported here bear ample evidences that there are more than one factor responsible for peritonitis and abdominal distension in septic abortion and all of them are not amenable to the usual conservative measures.

Two cases (Table VII) had uterine perforation and peritoneal sac had direct continuity with infected uterine cavity. In these cases peritonitis persisted because the traumatised uterus acted as a continuing source for spread of infection.

Primary or secondary bowel pathology may also be responsible for peritonitis and ileus in septic abortion. Pinto Rosario (1970) reported 2 cases of laparotomy for bowel injury.

Two cases (Table VII) in the present series had peritonitis followed by mechanical intestinal obstruction. In one, a loop of small intestine was adherent to an uterine rent; and in the other, coils of intestines were glued together in the form of 'bread and butter' adhesions. These were responsible for persistent distension in these cases.

Peritonitis without apparent uterine injury or bowel pathology could be purely due to spread of infection from the uterine cavity. According to Brian Little (1967), infection without interference might result from the lowered resistance of the host, virulent organisms and the presence of an unusually large number of bacteria. Any one of these in an apparently simple case of septic abortion could lead to severe complications, like peritonitis, hypotension or oliguria. Four cases in the present series (Table VII)

had no apparant evidence of injury or bowel pathology and yet they suffered from peritonitis with or without septic hypotension.

These illustrations therefore, adequately justify the scope of surgical intervention in cases of unresponsive hypotension or persistent abdominal distension complicating septic abortion. Moreover, the cases reported further indicate that exploratory laparotomy under such circumstances has three distinct advantages over purposeless conservative medical management.

In the first place, bowel injury or mechanical obstruction responsible for persistent distension is never diagnosed unless laparotomy is performed. Conservative treatment in these cases will inevitably lead to fatal termination.

Secondly, conservative treatment and administration of any amount of antibiotic would not be effective, if there is collection of pus in the peritoneal cavity. This can be drained by posterior colpotomy if the pus points through pouch of Douglas. But most often, this area is shut down by inflammatory adhesions and laparotomy remains the only solution for drainage of pus. Purulent exudate is not only the cause of severe grade of infection, but is also responsible for intestinal ileus, a condition, if not properly treated will lead to gross electrolytic imbalance. Baxi *et al*, (1971) admitted that radical treatment in the form of laparotomy and drainage of pus or hysterectomy could have saved some of the cases of grade III septic abortions in their series.

Lastly, apart from clostridium infection, persistent hypotension and sometimes oliguria may be due to massive infection of the uterine contents by Coliform organisms. Sometimes this type of shock and oliguria cannot be effectively

treated unless the uterus is removed by hysterectomy. Though difference of opinion still exists on the question of evacuation of uterus in septic abortion; opinion is becoming more or less crystallised on the indication of hysterectomy in endotoxic shock. Douglas and Beckman (1966) have recorded unresponsive septic hypotension as the major indication of Hysterectomy in their series. Duncan Reid (1967) is of the opinion that hysterectomy should be strongly considered in cases of persistence of shock and low urine output as the decidua spongiosa and myometrium contain large number of coliform bacteria, a containing source of infection.

The main reason why surgical treatment has been antagonised is the risk involved in these poor-risk subjects. Hence, to achieve some optimum results out of these hopeless cases, laparotomy should be performed before the patient's condition becomes too low to stand a surgical intervention. This timing in relation to progress of syndrome is therefore, vital. The experienced clinician has to evaluate each case individually and the decision will vary from case to case. Two cases in the present series died in the postoperative period. In both these cases decision for laparotomy was delayed. Moreover, one of these had features of endotoxic shock and in this case perhaps, hysterectomy would have been more rational rather than simple drainage of pus. In one case the decision for laparotomy was rather hasty. Though the patient survived, the postoperative period was very stormy.

#### *Summary and Conclusion*

1. Eight cases of septic abortion have been recorded and in all of them laparotomy was performed because of persistent abdominal distension or unresponsive

septic hypotension.

2. Laparotomy was performed not before conservative treatment was given a fair trial. The timing of laparotomy varied between 48 to 96 hours.

3. On laparotomy, uterine rent was detected in two, intestinal adhesion leading to mechanical obstruction in two, while in the remaining 4 cases, frank pus was found in the peritoneal cavity or in the uterus.

4. Surgical treatment following laparotomy consisted of simple drainage of pus in three cases, drainage with repair of uterine rent in one, separation of intestinal adhesions in two and hysterectomy in two cases.

5. Six patients survived and two died. The decision for laparotomy in these two cases, was delayed.

6. The timing and the extent of Surgery are vital in these poor-risk patients, where one expects something good out of this most aggressive form of treatment.

#### *Acknowledgement*

We are grateful to Prof. D. L. Poddar, Prof. Director, Dept. of Obst. and Gynaecology, and Surgeon Commodore G. C. Mukherjee, Principal-cum-Superintendent N. R. S. Medical College, Calcutta for their kind permission for publication of these cases.

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