

## MANAGEMENT — SEPTIC INDUCED ABORTION

### (Outside Hospital Interference)

by

M. V. PARIKH,\* M.D., D.G.O.

R. V. BHATT,\*\* M.D., D.C.H.

and

M. N. HAZRA,\*\*\* M.S., D.G.O.

#### Introduction

'Septic induced abortion—'outside hospital interference' is a global problem. Deaths from illegal and unskilled abortions play considerable role in the maternal mortality pattern of any country. Associated anaemia, low general condition coupled with the delay in taking hospital admission and known limitations of antibiotic therapy are some of the contributory factors that increase the mortality.

Unfortunately, treatment of such illegal septic cases is a 'No man's land'. The principles of treatment are not clearly defined. Scanning of the literature shows policy of ultraconservatism at one end to aggressive early surgical intervention at the other. We feel that early surgical intervention has certain advantages.

(1) Surgical intervention removes septic focus cause.

(2) Bag of endotoxin i.e. pockets of pus in paracolic gutter and subphrenic space can be opened and pus drained. Antibiotics have their own limitations in presence of pus. Emerging resistant strains

of organisms, poor penetration by antibiotics in abscess and continued growth of organisms in presence of remnants of placental and foetal tissue results in failure of antibiotics.

(3) Surgical intervention gives an opportunity to detect and treat undiagnosed bowel injuries and obstruction if any.

To achieve good outcome from aggressive surgery out of these hopeless cases, interference should be undertaken before the general condition of the patient becomes too low to stand a surgical intervention.

The purpose of the present study is to evaluate the role of early surgical intervention in illegal septic abortion.

#### Material and Methods

It is a retrospective study of 117 cases admitted to Shri Sayaji General Hospital, Baroda from January 1976 to December 1980 following illegal induced abortion outside hospital. Management was either conservative or minor surgical or major surgical.

Grading of the infection was done as follows:

Grade I—Infection restricted to uterus.

Grade II—Infection extended beyond the uterus but within pelvic cavity.

Grade III—Spread of infection outside pelvic cavity.

\*Senior Registrar.

\*\*Professor and Head.

\*\*\*Professor.

Department of Obstetrics and Gynaecology,  
Medical College, Baroda.

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Maternal mortality was considered important yardstick to evaluate the type of management in relation to grade of infection.

#### Observations

Table I reveals the correlation and the incidences of viable births, spontaneous abortions, MTP and induced abortions during study period. Table highlights that maternal mortality due to induced illegal abortion is 230.76 per 1000 i.e. 537 times higher than mortality of legally induced abortions. Since 1978, maternal mortality following illegal induced abortion has decreased from 40% to 16% in 1980.

Table III gives the protocol of management according to grade of infection. Only 25% cases were admitted with either grade 0 or grade I infection, while 75% were either having grade II or grade III infection. Out of 117 cases, 64.5% cases were subjected to major surgical procedure. Nearly 50% of major surgical procedure was done for grade III infection while 55% to 75% of infected cases i.e. either grade I or grade III were subjected to major surgical procedure.

Table IV exhibits outcome in terms of maternal mortality against grade of infection and type of management. Maternal mortality has obviously increased from

TABLE I  
Incidence

Year	Spontaneous abortion	Viable births	M.T.P.	Septic Induced abortion
1976	428 (4)	3404 (41)	980 (0)	23 (4)—(17%)
1977	407 (6)	3108 (45)	796 (0)	25 (6)—(24%)
1978	492 (9)	3192 (22)	878 (1)	20 (8)—(40%)
1979	467 (5)	3412 (63)	833 (1)	24 (5)—(21%)
1980	425 (6)	3418 (46)	1062 (0)	25 (4)—(16%)
Total	2219 (30)	16534 (214)	4549 (2)	117 (27)
Mortality per 1000	13.51	13.06	0.43	230.76

( ) Maternal Mortality.

Table II shows that in absence of facilities to culture anaerobic bacteria, 63% showed positive vaginal swab culture i.e. aerobic. *E. Coli* and *pseudomonas pyocyanous* were the most common organisms grown i.e. in 37% cases.

TABLE II  
Vaginal Swab Culture

Negative	43 (37%)
Positive	74 (63%)
<i>E. Coli</i>	28 (24%)
<i>Pseudomonas</i>	15 (13%)
<i>Staph. Aureus</i>	12 (10%)
Others	19 (16%)

Anaerobic could not be cultured

4% in grade I to 45% in grade III. It is a serious concern that 33% of patients died who had no external evidence of infection. Maternal mortality following major surgical procedure is only 16% compared to 33% and 38% mortality (more than double) in conservative and minor surgical procedure respectively. Table V-A has an important aspect to reveal about the impact of admission—surgical intervention interval on maternal mortality. Only 19% of patients died who were operated within 24 hours of admission which increased to 42% when operated

TABLE III  
Grade of Infection-Management

Grade of infection	Conservative	Minor surgical	Major surgical	Total
Nil	03	00	00	03 ( 2.5%)
I	04	06	17	27 (23.0%)
II	07	10	21	38 (32.5%)
III	04	08	37	49 (42.0%)
Total	18 (15%)	24 (20.5%)	75 (64.5%)	117

Minor surgical— D and E, colpotomy, drainage of pyometra.

Major surgical—exploratory laparotomy with or without hysterectomy.

TABLE IV  
Maternal Mortality in Relation to Grade of Infection and Management

Grade of infection	Conservative	Minor surgical	Major surgical	Total
Nil	1/3	0/0	0/0	1/3 (33%)
I	1/4	0/6	0/17	1/27 ( 4%)
II	1/7	1/10	1/21	3/38 ( 8%)
III	3/4	8/8	11/37	22/49 (45%)
Total	6/18 (33%)	9/24 (38%)	12/75 (16%)	27/117

TABLE V A  
Admission—Surgical Intervention Interval Maternal Mortality

Time Interval	Minor Surgical		Major Surgical		Total
	No. of cases	Mortality	No. of cases	Mortality	
24 hours	20	7 (35%)	54	7 (13%)	14/74 (19%)
24 hrs.—1 week	4	2 (50%)	20	8 (40%)	10/24 (42%)
More than 1 week	0	0	1	1 (100%)	1/1 (100%)

within one week and 100% when operated after one week.

Table V-B correlates admission-death interval in relation to management. Maximum i.e. 41% deaths occurred within first 24 hours and 55% of them had undergone

major surgical procedure. 67% of deaths after conservative management or minor surgical procedures occurred after 24 hours. While 43% of deaths after major surgical procedures occurred after 24 hours.

TABLE VB  
Admission Death Interval—Management

Time Interval	Conservative	Minor surgical	Major surgical	Total
24 hours	2 (18%)	3 (27%)	6 (55%)	11 (41%)
24 hrs.—72 hrs.	0 (0%)	2 (67%)	1 (33%)	3 (11%)
73 hrs.—7 days	2 (29%)	2 (29%)	3 (42%)	7 (26%)
More than 7 days	2 (33.3%)	2 (33.3%)	2 (33.3%)	6 (22%)

Table VI spells the causes of deaths. Obviously septicemia or peritonitis was the leading cause of death i.e. 63%. 3 patients of pulmonary embolism were also having septicemia.

TABLE VI  
Causes of Death

Septicaemia/Peritonitis	17 (63%)
Tetanus	02 (7%)
Gas gangrens	01 (3.5%)
Hepatic coma	01 (3.5%)
Renal failure	01 (3.5%)
Pulmonary embolism	03 (10.5%)
Haemorrhagic shock	02 (7%)

#### Comments

Any procedure meant for inducing an abortion definitely impairs maternal health even when done under meticulous care. Only moribund and fatal cases of illegal induced abortion are reported coming for treatment to the hospital and here the primary aim of the obstetrician is the maternal salvage. It is very obvious that maternal mortality is the best yardstick of efficacy of management, either conservative or surgical interference.

Though our positive vaginal swab culture reports were only for aerobes, it has been realised all over the world that anaerobes are the main offending organisms in such cases of illegal induced abor-

tion. Use of intravenous or oral metronidazole for anaerobes since 1979 might have reduced the maternal mortality following illegal induced abortion from 40% in 1978 to 16% in 1980.

Early surgical interference is now gradually recognised useful in managing septic abortion cases. Against 64.5% in present series, only 7% were subjected to major surgical procedure in same institution in 1970-1972 (Bhatt and Soni 1973). In the present series, 76% cases of grade III infection were subjected to major surgical procedure while Pinto Rosario (1970) subjected only 15% of grade III infection to major surgical procedure. As expected, mortality of grade III infection is very high i.e. 45%. Pudubidri (1979), Malhotra (1979) and Ganguli (1978) have 100%, 15% and 42.25% mortality for grade III infection respectively.

Maternal mortality following major surgical procedure is quite low i.e. 16% compared to 36% following conservative or minor surgical procedure. In the present series, an autopsy was available in 3 patients who died following conservative or minor surgical management.

#### CASE REPORT

##### Case 1

Mrs. S.V.R. aged 30 years, O/H 6-0-0-5, was admitted with H/O D and C done by pri-

vate practitioner 20 days back for 5 months amenorrhoea. Patient presented with generalised distention of abdomen having grade III infection. She died after 17 hours of conservative management. On autopsy, unsuspected perforation of uterus and small bowel with pus in paracolic gutter were found.

Comments—Condition of the patient was moribund on admission and died within first 24 hours, major surgical interference would not have done much except for diagnosis.

#### Case 2

Miss D.S.S. aged 20 years, O/H 1-0-0-0- was admitted with H/O stick insertion by dais 3 days back for 2½ months amenorrhoea. Patient presented with generalise peritonitis (Grade III infection). Colpotomy revealed 50 cc of frank pus. Patient died on 4th day. Post-mortem revealed 3 litres of pus in paracolic gutter.

Comments—Colpotomy with breaking of septa only drained pus in pouch of dougles. Laparotomy might have saved the patient.

#### Case 3

Miss N.M.M. aged 21 years O/H 1-0-0-0 was admitted with H/O stick insertion by dais 12 days back for 4 months amenorrhoea. Patient presented with pelvic peritonitis. Colpotomy drained 1500 cc pus. Patient died after 37 hours. On autopsy, perforation of posterior surface of uterus was found with a stick of 9 inch lying adherent to loops of small intestine in peritoneal cavity.

#### Comments

Colpotomy failed to diagnose perforation and stick in peritoneal cavity. Laparotomy with hysterectomy might have saved the patient.

Along with poor show of conservative or minor surgical management, major surgical management has impressive show which would be clear with following two cases.

### CASE REPORT

#### Case 1

Mrs. A.S.R. aged 24 years O/H 3-0-0-2 was admitted with history of D and C done one day back for 2 months amenorrhoea. Patient's condition deteriorated after D and C. Laparotomy revealed perforation of uterus with pus around. Hysterectomy saved the patient.

Comments—Patient could not have been saved but for major surgical interference.

#### Case 2

Mrs. S.R.D. aged 24 years O/H 22-0-0-1 was admitted with H/O D and C done 5 days back for 2 months amenorrhoea. Patient presented with continuous vaginal bleeding. Evacuation of uterus under cover of antibiotics perforated the uterus. To err on safer side laparotomy done. Perforation of uterus with fresh injury to bowel were found. Hysterectomy with right hemicolectomy saved the patient.

#### Comments

Gentle evacuation is mandatory in soft uterus of septic cases. Recognition and prompt treatment of bowel injury saved the patient.

'Delay is dangerous' is very true for septic abortion cases. Mortality increases leaps and bounds as the period between admission and surgical intervention increases. Even with the best which can be achieved in teaching institution, 41% of the patients died within 24 hours shows the extent of interference and moribund condition of patient where fate of patient was already decided on admission. Ten patients of conservative and minor surgical procedures who died after 24 hours could have been probably saved with more aggressive major surgical procedure.

From 5 years experience with management of septic induced abortion—outside hospital interference—we have come to the following guide lines.

1. Conservative management should be restricted to

(i) Grade I infection/Grade 0 infection.  
(ii) Patients on conservative management should be subjected to major surgical procedure if condition of patients does not improve or deteriorate after 24 hours of treatment. In absence of suspected perforation by stick or curette, uterus should be evacuated under cover of antibiotics.

2. Minor surgical procedure like colpotomy should only be considered as diagnostic procedure. Presence of pus on colpotomy require regular laparotomy.

3. Major surgical interference should be restricted to

(i) Grade II and grade III infection.  
(ii) Suspected perforation by stick or curette. If uterus is found to be perforated, infected or harbouring infected gestation products, decision in favour of hysterectomy would be beneficial.

4. Decision for major surgical procedure should not be delayed once criteria are fulfilled. Delay increases the maternal mortality.

5. Metronidazole should be freely used to control anaerobic organisms which in many instances are leading ones.

6. Apart from major surgical interference, proper attention to nutrition of the patient, utmost postoperative management and correction of fluid and electrolyte balance should not be forgotten for better outcome.

With above observation and guidelines for management, we have started a prospective study since January 1981. Results of it would be published in due course of time.

### Summary

1. 117 cases of septic induced abortions, —outside hospital interference—were studied from management point of view.

2. 75% patients were admitted with either Grade II or Grade III infection.

3. E. Coli was found to be most common aerobe.

4. In 64.5% cases major surgical procedure was performed.

5. Mortality was found to be increased many fold in cases where surgical intervention was delayed.

6. 41% of total deaths occurred in first 24 hours of admission.

7. Septicaemia/peritonitis was found to be main cause of death i.e. in 75% cases.

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