

The Outcome of Septic Abortion: A Tertiary Care Hospital Experience

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Abstract

Objective To study the incidence of septic abortion, reasons for that, sociodemographic profile, abortion providers, complications faced, and treatment given and its outcome.

Methods All the women with septic abortion admitted at Government Maternity Hospital, Tirupathi, over a period of 2 years 4 months duration from July 2007 to October 2009 were studied prospectively.

Observations and results Incidence of septic abortion in our study was 6.78 %. 72 % of cases were performed by qualified medical personnel. Fourteen patients had complications, among them peritonitis, pelvic abscess, renal failure, and septic shock were common. Twenty-six patients had Grade-I sepsis, Grade-II: 8, Grade-III: 4, and Grade-IV: 4. Laparotomy was done in six cases. There was no mortality in our study.

Conclusion The tragedy of septic-induced abortion is totally preventable. It only needs definitive commitment to women's health by providing effective contraception, strengthening the family welfare services, and discouraging repeated terminations of pregnancy as contraceptive method.

Keywords Septic abortion · Incidence · Complication

Introduction

Sepsis can occur following spontaneous and/or induced abortion. Septic abortion may occur either by lack of adequately trained persons or in an environment lacking the minimal medical standards or lack of awareness regarding available medical services. Illegal abortions are frequently performed in India with disastrous results even today in spite of liberal Medical Termination of Pregnancy Act. Uncomplicated criminal abortions are never detected. Only complicated cases contribute to statistics. Whenever any complication has developed they are almost always referred to government hospitals as most private hospitals would deny admission to criminal abortion cases in moribund state. The main objectives of this study are to know the incidence, reasons for that, socio-demographic factors, clinical features, and morbidity and mortality caused by septic abortions; and to know the effect of treatment given and its outcome.

Methods

All the patients with septic abortion admitted at Government Maternity Hospital, Tirupathi, over a period of 2 years 4 months duration from July 2007 to October 2009 were studied prospectively after their written informed consent.

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The analysis was carried out on the basis of age, socio-economic status, religion, marital status, induced or spontaneous abortion, period of gestation, person performing the abortion, reason for abortion, mode of interference, and grading of abortion. The morbidity and mortality resulting from this condition and the management have been discussed; management was in the form of conservative, minor, and major surgical procedures.

Observations and Results

The present study was conducted in Government Maternity Hospital, Tirupathi from July 2007 to October 2009, i.e., 2 years 4 months duration. Total number of admissions during the study period was 31,664. Among these 25,498 were deliveries and 619 were abortions. Among 619 cases of abortions 42 had sepsis. Incidence of septic abortion in our study was 6.78 %.

Socio-demographic factors are given in Table 1. Majority (73.8 %) of patients were in the age group of 20–29 years with mean age being 23.4 years. Hindus formed the major group accounting to 88.10 %, 36 (85.72 %) women were married, 25 (59.52 %) women were illiterates, and 69.05 % of patients belong to below poverty line [1]. Multiparae (54.77 %) constituted the major part of this study. In our study six patients had previous history of one abortion, one patient had history of two abortions, and two patients had history of three previous abortions.

Profile of present abortion is listed in Table 2. In 25 (59.52 %) cases it was induced by medical and surgical methods outside. In 72 % of cases abortion was induced at private hospitals. In 25 induced-abortion cases women were not using any contraceptive method. 72 % of cases were performed by doctor with recognized qualification. In 72 % of induced abortion cases dilatation and evacuation was done. In 61.90 % of cases abortion was induced within 12 weeks of gestation. Table 3 gives details regarding induced abortion. Majority (56 %) of women developed clinical features within 5 days. In our study 52 % of cases were admitted within 7 days of induction. Family size (28 %), economic limitations (28 %), and unmarried (24 %) were the major reason cited for termination of pregnancy.

Table 4 gives details of presenting complaints, complications, and management: Abdominal pain (85.71 %), bleeding per vagina (69.04 %), and fever (57.14 %) were common complaints. Most of them had more than one complaint. On general examination all the septic abortion cases were anemic and in 33 cases there was elevated temperature. Majority of the patients in our study had taken antibiotics before admission. Lower abdomen tenderness was present in 31 cases. Abdominal distention with rigidity

and guarding, bowel sounds sluggish, or absent was seen in seven cases. On bimanual examination uterine size was normal in four cases. Tender cervical movements were present in 18 cases.

Depending on the clinical findings, grading of septic abortion was done. Grade-I: Constituted infection localized to the uterus 26 (61.90 %). Grade-II: Constituted infection spreading to pelvis and abdomen without signs of generalized sepsis 8 (19.04 %). Grade-III: Patients who had septicemia with clinical features of fever, hypothermia, tachycardia, tachypnea, and inadequate organ perfusion 4 (9.52 %). Grade-IV: Patients with septic shock, BP less than 90 mmHg (systolic), and septicemia were included 4 (9.52 %).

Hemoglobin estimation, total count, differential count, ESR, blood grouping and Rh typing, ultrasonography, blood urea, serum creatinine, blood sugar, urine for albumin and sugar, culture and sensitivity, microscopy, bleeding time, and clotting time were done in all cases. Screening for HIV and HBsAg was done after consent. Plain erect X-ray abdomen, chest X-ray, serum electrolytes, serum bilirubin, and liver function tests were done as and when required. Hemoglobin level <4 gm% was seen in one case, between 4–6.9 gm% in 18 cases and between 7 and 9 gm% in 23 cases. High vaginal swab was taken prospectively in all cases for culture and sensitivity. No bacterial growth was obtained in 22 cases (52.38 %). In 47.62 % of cases organisms were isolated. In culture-positive cases *Escherichia coli* was isolated in majority of the cases followed by *Staphylococcus aureus*; wherein 75 % of cases, organisms were sensitive to Amikacin and Gentamicin. Blood test for culture and sensitivity and anaerobic culture was not done, due to lack of infrastructure. Urine test for culture and sensitivity was done in all cases and it was positive in 11.9 % cases. Antibiotics were given in all cases. Intravenous fluids, blood transfusion, and Heparin were administered as and when required. 80 % of septic abortion cases were in Grade-I and Grade-II. Complications following septic abortion were seen in 14 cases (33.33 %); among them peritonitis 7 (50 %), pelvic abscess 6 (42.85 %), renal failure 6 (42.85 %), septic shock 4 (28.57 %), uterine perforation 3 (21.42 %), and enterovaginal fistula 1 (7.14 %) were noted. Products of conception following dilatation and evacuation were sent for histopathological examination in 29 cases. In 96.55 % of cases, results were consistent with products of conception. Pelvic abscess was drained by colpotomy. Laparotomy alone was done in two cases with colpotomy done in four cases. During laparotomy pus was seen in peritoneal cavity in three cases; adhesions between intestines, omentum, and pelvic peritoneum was seen in four cases; uterine perforation was seen in three cases; organized mass in the adnexa was seen in two cases; and bladder injury was seen in one case.

Table 1 Socio-demographic characteristics ($n = 42$)

	No. of cases	Percentage
Age (years)		
15–19	4	9.52
20–29	31	73.80
30–40	6	14.30
>40	1	2.38
Marital status		
Married	36	85.72
Unmarried	6	14.28
Residence		
Rural	32	76.19
Urban	10	23.81
Religion		
Hindu	37	88.10
Muslim	4	9.52
Christian	1	2.38
Education		
Illiterate	25	59.52
Primary	2	4.76
Socio-economic status		
Below poverty line	29	69.05
Above poverty line	13	30.95

Table 2 Profile of present pregnancy ($n = 42$)

	No. of cases	Percentage
Parity		
Primigravidae	19	45.23
Multiparae	23	54.77
Period of gestation (weeks)		
<12	32	76.19
>12	10	23.81
Type of abortion		
Spontaneous	17	40.48
Induced	25	59.52
Place of abortion		
Government Hospital	4	16
Private Hospital	18	72
Domiciliary	1	4
Periphery	2	8
Person performing the abortion		
Doctor with recognized qualification	18	72
Unqualified persons	6	24
Herself	1	4
Methods used to induce abortion		
Surgical	18	72
Medical	5	20
Medical followed by surgical	2	8

Table 3 Profile of induced abortion ($n = 25$)

	No. of cases	Percentage
Interval between induction and onset of symptoms		
<5 days	14	56
5–15 days	6	24
>15 days	5	20
Duration between induction and admission		
<1 week	13	52
1–2 weeks	8	32
>1 month	4	16
Reason		
Family size	7	28
Economic limitations	7	28
Unmarried	6	24
Inadequate spacing	1	4
Unprotected sex	2	8
No response	1	4
Abandoned by spouse	1	4

Table 4 Complaints, complications, and management

	No. of cases	Percentage
Complaints on admission ($n = 42$)		
Abdominal pain	36	85.71
Fever	23	57.14
Bleeding per vagina	29	69.04
Foul smelling vaginal discharge	5	11.90
Brownish black vaginal discharge	2	4.76
Greenish yellow discharge	1	2.38
Decreased urinary frequency	3	7.14
Burning micturition	5	11.90
Complications ($n = 14$)		
Generalized peritonitis	7	50
Pelvic abscess	6	42.85
Renal failure	6	42.85
Septic shock	4	28.57
Uterine perforation	3	21.42
Enterovaginal fistula	1	7.14
Bladder injury	1	7.14
Management ($n = 42$)		
Conservative management alone	5	11.9
D&E	29	69.04
Colpotomy	2	4.76
Colpotomy and laparotomy	4	9.52
Laparotomy alone	2	4.76

Twenty-six cases were discharged after complete recovery, four patients were discharged against medical advice, nine patients were discharged at request, two

patients were transferred to surgical ward, and one patient was transferred to medical ward.

Discussion

The incidence of septic abortion in our study was 6.78 % comparable to the incidence in a study by Roy et al. [2]. Incidence of septic abortion varies widely between developing and developed countries. It depends upon literacy, awareness about the facilities available, legislation, and socio-economic status of the population.

In our study majority of patients (73.80 %) were in the age group of 20–29 years similar to the findings of Kore et al. [3]. In our study, 76.19 % of patients came from rural area similar to the reports of Roy et al. [2]. Among people undergoing septic abortions 88.1 % were Hindus as found by Agarwal and Salhan [4] also. This observation reflects the demographic constitution of the population which our hospital caters to. Majority of the women undergoing septic abortions were from below poverty line in our study similar to the findings of Das et al. [5]. In our study 85.72 % of women were married similar to the findings of Jain et al. [6] where 90.4 % were married.

Majority of the married women followed termination of pregnancy as a contraceptive or spacing method. In our study the main reasons for termination of pregnancy were family size and economic limitations.

61.90 % of cases were first-trimester abortions similar to the findings of Jain et al. [6] and Kore et al. [3]. In this study majority of cases got admitted within 10–15 days of induction of abortion. The time elapsed between induction of abortion and hospital admission is an important risk factor for sepsis. In our study, 25 (59.52 %) cases had induced abortion and 80 % of them had surgical evacuation. Non-adherence to strict aseptic precautions and incomplete evacuation were the etiological factors in these cases. Roy et al. [2] and Sharma et al. [7] found instrumentation as the commonest cause for sepsis in 84 and 67.7 %, respectively. Grades of septic abortion: Our study results are compared with other Indian studies detailed in Table 5.

Among septic abortions, 25 cases were induced and 72 % of them had a qualified medical personnel attending to them in spite of which they progressed to sepsis. This could be because of inadequate skill among medical personnel and nonadherence to asepsis.

In our study, *E. coli* was the major pathogen isolated in the culture of high vaginal swab as seen in studies by Das et al. [5] and Roy et al. [2] also.

In our study complications were seen in 14 cases; among them, peritonitis (50 %), pelvic abscess (42.85 %), and renal failure (42.85 %) were more common complications, followed by septic shock (28.57 %), uterine perforation (21.42 %),

Table 5 Grades of septic abortion ($n = 42$) and comparison with other Indian studies

Author	Grade-I (%)	Grade-II (%)	Grade-III (%)	Grade-IV (%)
Kore et al. [3]	25.92	29.63	22.22	22.22
Guin et al. [8]	22.7	40.9	36.3	
Das et al. [5]	40.2	30.3	12.3	17.2
In our study	61.90	19.04	9.52	9.52

bladder injury (7.14 %), and coagulation failure (7.14 %). Singh et al. [9] reported that generalized peritonitis (62.5 %) was the most common complication. Maternal mortality due to septic abortions was not seen in the present study.

Management of septic abortion is shrouded in controversies. While there is a general agreement that women with infected abortion require intensive diagnostic scrutiny for extragenital infection and/or injury, and careful supportive management with blood, fluid and electrolytes and antibiotic therapy, there is disagreement as to the timing of surgical intervention. Another controversial aspect is the place of major surgical intervention in septic abortion. Laparotomy is indicated if there is no response to uterine evacuation and adequate medical therapy, uterine perforation with suspected bowel injury, bladder injury, and generalized peritonitis not responding to therapy.

More than 10,000 legally registered abortion facilities exist in India. Mostly they are based in urban areas and are inequitably distributed among states.

Conclusion

The tragedy of septic-induced abortion is totally preventable. It only needs definitive commitment to women's health, by providing effective contraception, by strengthening the family welfare services, increasing the awareness of various contraceptive methods, sex education, and discouraging repeated terminations of pregnancy (surgical as well as medical) as a method of contraception. Success in implementation of induced abortion services and safety of the procedure largely depends upon the availability of adequately trained physicians to provide quality services.

Conflict of interest The authors declare that they have no conflict of interest.

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