

Outcome of Septic Abortions : Impact of Tertiary Care

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OBJECTIVES - To study precedent factors, clinical features, management, complications and maternal mortality and morbidity in cases of septic abortion, particularly with reference to early intervention and high dose steroid therapy in severe cases. **METHODS** - Twenty seven cases of septic abortions were analyzed, in a retrospective study conducted over a period of 4 years. **RESULTS** - Mean age of the patients was 25.4 years. There were 11 primigravidas. Six women were admitted in a state of septic shock. Three women required hysterectomy. Maternal mortality was 29.6%. **CONCLUSION** - Increasing awareness and making legal abortion services easily available to the masses at cheaper cost with stringent law to contain practices of quacks is required to decrease incidence of illegal and septic abortion and related maternal morbidity and mortality.

Key Words : septic abortion, shock, mortality, treatment of septic abortion

Introduction

It is a matter of great concern that even at the beginning of the 21st century, maternal mortality in India continues to be alarmingly high. Sepsis is one of the direct causes of maternal mortality in India.

Although septic abortion has become an uncommon problem in developed countries and in countries where abortion is legal, it continues to be major a problem in developing countries, particularly so where abortion is not legalized^{1,2}.

In spite of India being one of the first few countries to legalize abortion through the Medical Termination of Pregnancy (MTP) act in 1971, it is unfortunate that incidence of septic abortion is high in India varying from 2 - 10%^{3,4}.

The common cause is attempting abortion by untrained personnel, dais and quacks. Poverty, nonavailability of legal abortion services and uncontrolled, unchecked growth of quacks, both in urban and rural areas contribute to the high incidence of illegal and septic abortions. Social situations like pregnancies in unmarried girls or widows can lead to indulgence in illegal abortion leading to sepsis. Even after occurrence of complications, these patients are mostly referred to hospitals very late, often in moribund condition leading to high maternal mortality and morbidity.

The present study was conducted to analyze the incidence of septic abortion in a tertiary teaching hospital, to study the resultant maternal morbidity and mortality, and to assess effects of tertiary care including proactive intervention and high dose corticosteroid therapy, in reducing morbidity and mortality.

Material and Methods

A retrospective analysis of 27 cases of septic abortion over a period of 4 years was done. All the cases were analyzed with respect to various demographic factors, clinical features, management, complications, maternal morbidity and mortality, surgical intervention and high dose steroid therapy. Data was collected from record books in the intensive care unit and the labor ward, indoor case papers, investigation charts and maternal mortality books.

Results

Over a period of 4 years, there were a total of 31239 confinements, out of which 4782 were for abortions. Twenty seven women had septic abortion giving an incidence of 0.57% (27/4782).

The mean age of these 27 patients was 25.4 years. There were 11 primigravidas and 16 multigravidas (Table I). Three were unmarried while 24 were married. Majority were from very low socioeconomic class. Twenty-two patients hailed from rural areas. Twenty-five were transferred or referred cases. The period of gestation at the time of abortion is shown in Table II.

In four patients, sepsis followed spontaneous incomplete abortion, while in the remaining 23 it followed instrumental termination of pregnancy. Untrained persons like quacks or traditional birth

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attendant, (dais) performed termination in 16 cases, while in four, it was performed by doctors, probably untrained, as their qualifications were not known. In the remaining three cases, information regarding this could not be elicited. The indication for termination of pregnancy was unwanted pregnancy in 18 cases. Four patients had spontaneous incomplete abortion at home and came later on to the hospital with features of sepsis. Of the 27 patients in the study three i.e., 11.2% were unmarried primigravidas.

Fever, pain in abdomen and foul smelling vaginal discharge were commonest symptoms seen in these patients. Examination revealed retained products with purulent discharge in majority of patients. In one patient the tip of a foreign body in the uterus could be felt. Four patients had distention of abdomen with free fluid in pelvis and abdomen while features of peritonitis were seen in 12 patients. Ultrasonography confirmed retained products in these patients. The blood culture was done in 17 cases. *E. coli* and *Klebseilla* were common organisms detected

After considering all features and investigations, depending on severity of infection, patients were categorized into four grades. Infection localized to uterus constituted grade I infection (7 patients), while infection spreading to pelvis and abdomen without showing signs of generalized sepsis was categorized as grade II (8 patients). Patients in septicemia with clinical evidence of infection viz, fever, hypothermia, tachycardia, tachypnea and evidence of inadequate organ perfusion constituted grade III (6 patients), while grade IV infection (6 patient) denoted patients in septic shock and septicemia with sustained decrease in systolic blood pressure to less than 90mm Hg for more than one hour after adequate infusion of fluids. Eight patients developed varying degrees of renal failure while two developed disseminated intravascular coagulation.

Apart from routine intensive management and broad-spectrum antibiotic therapy, high dose steroid and

dopamine infusion were required in 12 patients in group III and IV. A significant observation was that higher doses of corticosteroid therapy proved more beneficial in grade II and III patients in preventing progression to septicemic shock. High dose frusemide and fresh blood and blood component were required in all patients in grade III and IV. Nine patients required ventilatory support for a period ranging from 8 hours to 17 days.

In 16 patients, evacuation of the uterus was carried out, while in two cases, laparotomy with hysterectomy and drainage of pus was done. In one of these cases, there were multiple perforations, with bowel injury requiring resection anastomosis. Two cases required laparotomy for drainage of pus; colpotomy drainage was done in two cases. Interval between admission and recovery or death ranged from 4 hours to 21 days.

Out of the 20 cases of severe sepsis of grade II, III and IV, five were treated conservatively with higher antibiotics, steroids, and blood and its products, with or without dialysis. All five died in a period ranging from 8 hours to 6 days. This included one woman with illegal abortion, coming with a foreign body in the uterus and abdomen. She died in a few hours. Of 10 women treated with conservative management along with uterine evacuation with or without colpotomy to drain pus, two (20%) patients ultimately died. In the subgroup of five patients who were treated aggressively with laparotomy to drain pus with or without hysterectomy, one patient (20%) died due to development of pulmonary complications after showing initial improvement.

Thus out of 27 patients 8 died giving an overall mortality of 29.8%. Majority of the patients who died belonged to group III and IV. Post-mortem in these patients confirmed features of septicemia. Apart from septic shock, renal failure and DIC contributed to maternal mortality.

A wooden stick perforating the uterus and bowel was found in the abdomen during post-mortem in one patient

Table 1 – Age and gravidity

Age in years	Primigravida	Multigravida
20 >	3	1
20-25	5	9
26-30	2	4
30 <	1	2
Total	11	16

Table II – Period of gestation at abortion

Period of gestation in weeks	No. of cases
6 >	2
7-10	7
11-14	10
15-20	6
> 20	2

Table III – Surgical treatment

Evacuation	16
Colpotomy	2
Laparotomy with drainage of pus	2
Laparotomy with hysterectomy	2
Hysterectomy with resection anastomosis	1

Table IV – Mortality according to the type of treatment

Grade	No. of Patients	No. of Patients / No. of Deaths (%)			
		Conservative treatment	Conservative treatment with drainage of pus	Radical treatment	Total
I	7	7/0 (0%)	NA	NA	7/0 (0%)
II	8	1/1 (100%)	4/0 (0%)	3/1 (33.3%)	8/2 (25%)
III	6	2/2 (100%)	3/1 (33.3%)	1/0 (0%)	6/3 (50%)
IV	6	2/2 (100%)	3/1 (33.3%)	1/0 (0%)	6/3 (50%)
Total	27	12/5 (41.66%)	10/2 (20%)	5/1(20%)	27/8 (29.6%)

Discussion

It is unfortunate, that even after all efforts at education and liberalization of MTP practices since three decades, the mortality and morbidity due to septic abortion has not declined significantly¹⁻⁵. Unawareness about availability and sometimes unavailability of MTP services free of cost, particularly in rural and tribal areas are some of the reasons for this. Also easy, unabated availability of quacks in the vicinity makes women vulnerable to illegal practices, which often prove fatal. The government should take strict action against such quacks. Easy availability of MTP services free of cost to poor women, even in rural areas along with increasing awareness among these women can help in decreasing the incidence of such cases and proper and adequate training of all doctors involved can greatly help.

Early referral of septic cases before complications set in is important. In patients who have already progressed to septicemia or septic shock, incidence of renal failure and DIC is very high which contributes greatly to maternal mortality. Also mortality is very high (8 to 25%) once the septic shock has set in these cases¹⁻³. Apart from deaths, incidence of morbidity is also high in those who survive. Complications like high fever, wound infections and dehiscence in operated cases, and pelvic thrombophlebitis are common complications seen³⁻⁵. Mathur et al⁶ have reported a case of pedal gangrene following septic abortion.

The use of corticosteroids for septic shock remains extremely controversial⁴. Although Schumer⁷, reported beneficial effect of steroids, with mortality of only 10% in the study group as compared to 38% in the placebo group, Sprung et al⁸ found beneficial effect

only in early stages. The possible beneficial actions of corticosteroids in patients with septic shock include stabilization of lysosomes and cell membranes, inhibition of complement-induced granulocyte aggregation, improved myocardial performance, a right-ward shift in the oxygen-hemoglobin dissociation curve, and improvement in metabolic defects⁹⁻¹⁰. Apart from steroids, use of multiple higher antibiotics with intensive care unit management and multi-disciplinary approach in tertiary care centre can reduce mortality and improve the outcome.

It is logical that severe sepsis can be controlled only when the source of infection is removed. Surgery in the form of evacuation, laparotomy and hysterectomy should be performed to improve outcome. Infected retained products, microabscesses in the uterine wall, pyosalpax, infected tubo-ovarian masses and pus in the peritoneal cavity are required to be removed, depending upon severity of infection. Though only evacuation may help in early cases, hysterectomy may be required in severe cases of infection where the whole uterine wall contains microabscesses. Cases of uterine perforation sometimes require hysterectomy. In very serious patients not fit for surgery, drainage of pus by posterior colpotomy may be beneficial. Though Hawkins et al¹¹ reported a satisfactory outcome with antibiotics alone in cases with infected and gangrenous uterus, others have recommended a more aggressive approach. Reid¹² stressed that young women with septic abortion in whom the infection was localized were potentially salvageable if early surgical intervention was undertaken. Though issue of intervention, especially early radical surgery is controversial, studies by Singhal et al¹³ and Rivlin and Hunt¹⁴ have shown that early surgical intervention can significantly improve the outcome. Our study also showed similar results. In patients with severe sepsis, the mortality was 100% in the conservative group as compared to 20% in the surgery group. In severe cases with septic shock, intensive management, higher antibiotics and high dose cortico-steroids along with early surgical intervention can reduce mortality. Since our study is small, large randomized controlled studies are required to finally arrive at a conclusion.

Incidentally, the current concept of pathophysiology of sepsis emphasizes the important role played by infection in the smaller blood vessels of the system which liberate the macrophages along the endothelial lining. These macrophages produce cytokines which result in platelet aggregation and reduce perfusion due to endothelial damage. The danger to life is not so much because of the bacterial invasion but

because of the severe immunological activation which leads to multiorgan failure and death. Septic abortion, hence, needs prompt and aggressive treatment.

References

1. Kreger BE, Craven DE, McLabe WR. Gram-negative bacteremia IV. Re-evaluation of clinical features and treatment of 612 patients. *Am J Med* 1980; 68:344-55.
2. Ziegler EJ, McCutchan JA, Fierer J et al. Treatment of gram-negative bacteremia and shock with human antiserum to a mutant *Escherichia Coli*. *N Engl J Med* 1982;307:1225-30.
3. Hiralal K. Changing trends in septic abortion. *J Obstet Gynecol Ind* 1992;42:266-92.
4. Rana A, Pradhan N, Singh M. Induced septic abortions, a major factor in maternal mortality and morbidity. *J Obstet Gynecol Research* 2004;30:3-4.
5. Sharma JB, Manaktala AK, Malhotra M. Complications and management of septic abortions. A five year study. *J Obstet and Gynecol Ind* 2001; 51:74-6.
6. Mathur V, Mathur RK, Singh S et al. Pedal gangrene: an unusual complication of septic abortion. *J Obstet Gynecol Ind* 1998;48:88-9.
7. Schumer W. Steroids in the treatment of clinical septic shock. *Ann Surg* 1976;184:333-41.
8. Sprung C L, Panagiota V, Elleen H et al. The effects of high dose corticosteroids in patients with septic shock. *N Engl J Med* 1984;311:1137-43.
9. Weissman G, Thomas L. Studies on Lysosomes I. The effects of endotoxin tolerance and cortisone on the release of acid hydrolases from a granular fraction of rabbit liver. *J Exp Med* 1962;116:433-50.
10. Motsay GJ, Alho A, Jaeger T et al Effects of corticosteroids on the circulation in shock: experimental and clinical results. *Fed Proc* 1970;29:1861-73.
11. Hawkins DF, Sevitt LH, Fairbrother PF et al. Management of septic chemical abortion with renal failure. *N Engl J Med* 1975;292:722-5.
12. Reid DE. Assessment and management of seriously ill patients following abortion *JAMA* 1967;199:805-7.
13. Singhal P C, Kher V K, Dhall G I et al. Conservative Vs surgical management of septic abortion with renal failure. *Int J Gynaeco Obstet* 1982;20:189-94.
14. Rivlin ME, Hunt J A. surgical management of diffuse peritonitis complicating obstetric / gynecologic infection. *Obstet Gynecol* 1986;67:652-5.