

# ENDOTOXIC SHOCK AND COAGULATION DISORDER FOLLOWING INTRA-AMNIOTIC INJECTION OF MANNITOL

by

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## Introduction

Since abortion has been legalised in India in 1972, experimentation and clinical trials by various methods to induce abortion are being carried out. In this respect, search for a safer and yet efficient method for induction of mainly second trimester abortion continues. We here report a case of maternal death due to endotoxic shock and coagulation disorder following intra-amniotic injection of 20% Mannitol.

## CASE REPORT

Miss S. R., 25 years old, unmarried, Hindu, primigravida was admitted in Gynaecology and Obstetrics Department of N.B. Medical College and Hospital on 9-4-79 seeking termination of pregnancy of 4 months. Size of uterus was about 16 weeks. Preoperative investigations showed—haemoglobin-11Gm% and examination of urine was normal. On 10.4.79, 200 ml. of 20% Mannitol was infused intraamniotically after taking all aseptic precautions in operation theatre. Amniotic sac was reached after two dry taps. In the post operative period she was given injections of Crystalline Penicillin and Streptomycin. On the next morning, about 20 hours after infusion, the patient complained of excessive thirst and she suddenly became restless, delirious, and started getting rigors. On examination, pulse-120/min., B.P.-systolic. 70 mm. of Hg., there was flushing all over the

body, Temperature-39°C., signs of dehydration were present, height of uterus had increased to about 26 weeks pregnancy and it was tender. Provisionally diagnosing the condition as one of endotoxic shock, intravenous infusion of fluids and high dose of intravenous steroid (dexamethasone) were started. Patient was put on Injection Gentamycin (40 mgm. I.M. 8 hourly). After about 4 hours, she started having severe vaginal bleeding. On vaginal examination cervix was closed and tubular. At the same time while sending blood for grouping and cross matching it was found that coagulation time was 40 minutes (see below). Samples were also sent for other studies. As the vaginal bleeding became excessive, decision for emergency laparotomy was taken. On laparotomy under G.A., patchy haemorrhagic areas were found on the wall of the uterus. At first hysterectomy was done. There were plenty of retroplacental blood clots. In spite of complete evacuation and oxytocics uterus failed to retract. At this time a quick subtotal hysterectomy was done and abdomen was closed. In the post-operative period patient remained in a state of semiconsciousness. Her blood pressure remained at 80/40 mm. of Hg. Although there was no bleeding from any of the orifices, patchy ecchymotic areas developed throughout the body. She was given intravenous fluid depending on measurement of central venous pressure and urine output, high dose of I.V. steroid and a total of 3 bottles of B + fresh blood was transfused. Gradually she developed renal failure and pulmonary oedema and died on 14-4-79 after about 96 hours of intraamniotic instillation and 72 hours of surgery.

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## Findings on Investigations

Blood-Coagulation time (Lee & White-40 minutes. Clot observation test—poor clot retraction and Fragile clot.

Platelet Count—80,000/cu.mm.

Fibrinogen—150 mgm/100ml.

Culture & Sensitivity—Klebsiella Aerogenes sensitive to Gentamycin.

Vaginal Swab for Culture & Sensitivity—same as blood.

Histopathological examination of section of uterine wall—showed focal degeneration of muscle fibres with oedema.

#### Discussion

The present case was first death in 12 cases of 20% Mannitol instillation, out of a total of 96 cases of intraamniotic hypertonic solution infusion since 1977 in this hospital. In this particular case the sequence of events and investigations suggest that the patient developed endotoxic shock. Growth of *K. Aerogenes*—a gram negative bacillus from vaginal swab culture as well as blood culture indicates endotoxic shock. Such organisms are sometimes present in intestines of normal individuals which may find their way up through genital tract by contamination and become pathogenic under favourable condition of sugar medium of mannitol. Endotoxic shock is known to produce disseminated intravascular coagulation (McKay, 1965). This is the reason why the patient developed bleeding disorder. Haematological investigations also suggest this. Hysterectomy was done to save the patient from death due to bleeding and it was thought that this might also be helpful to remove the reservoir of infection.

But, the patient could not be revived from shock ultimately leading to renal failure. Endotoxic shock can lead to renal damage. In such situations proper antibiotics, high doses of steroid, maintenance of fluid and electrolyte balance with C.V.P. monitoring and fresh blood transfusion remain the main forms of treatment. In such situations fresh blood transfusion is perhaps safer. This particular patient should have been transfused with more fresh blood, but this could not be procured in time. Rajan *et al*, 1978 met with 2 deaths out of 24 intraamniotic injections of 20% Mannitol. In their series of 533 midtrimester abortions with different solutions 2 deaths in only the mannitol series were due to endotoxic shock. In another series of Alwani *et al*, 1975, the only patient with intraamniotic Mannitol and concurrent abdominal tubectomy had severe infection and burst abdomen. So it appears that there exists a good chance of infection and endotoxic shock following intraamniotic Mannitol infusion.

#### References

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