

UNANTICIPATED COMPLICATIONS OF INTRA AMNIOTIC SALINE

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Termination of pregnancy by intra-amniotic instillation of hypertonic saline solution is hazardous in cardiac patients because of the danger of pulmonary oedema developing secondary to sudden sodium overloading and an increase in blood volume. Unanticipated and fatal cardiac complications like pulmonary oedema and arrhythmias may occur in women with mild cardiac disease who have been asymptomatic clinically during the preceding pregnancies and during the procedure.

The records of 2 cases with clinically undetectable heart lesion, prior to instillation of saline, who developed pulmonary oedema subsequent to the introduction of hypertonic saline are presented with a view to highlight the point that each case must be critically evaluated for cardiac status before the commencement of this procedure.

Case 1:

Mrs. S., aged 30 years, G₄ P₃ was admitted on 3-4-77 for termination of 16 weeks pregnancy. Physical examination of the patient revealed mild anaemia and normal blood pres-

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sure. Systemic examination revealed mild tachycardia. There was no evidence of any organic cardiac murmur. Respiratory system was normal.

One hour after the introduction of 150 ml of 20% saline into the amniotic sac, the patient developed convulsions and pulmonary oedema which responded to Frusemide 60 mg intravenous, O₂ inhalation and diazepam 10 mg intravenous. The products of conception were expelled 60 hours after the instillation of saline. On re-evaluation of the cardiovascular system, a mild mitral stenosis was observed. Patient has not been aware of any rheumatic attack in the past or any episode of pulmonary oedema during her preceding pregnancies.

Case 2:

Mrs. J. K., aged 35 years, G₅ P₄ was admitted on 12-5-1978 for termination of 18 weeks pregnancy. On physical examination the patient was found to be normal. Cardiovascular system revealed no cardiac lesion. Respiratory system was normal.

Ten hours after the introduction of intra-amniotic saline, she developed severe pulmonary oedema. Examination of the chest revealed crepitations all over and marked tachycardia with gallop rhythm and a doubtful mid-diastolic murmur. Patient was administered morphine 1/6th gr. intravenously, Frusemide 80 mg intravenously, digoxin 0.05 mg and O₂ inhalation. The products of conception were expelled 10 hours after the instillation of saline. Re-evaluation of the cardiovascular system revealed classical signs of moderately tight mitral stenosis. She gave past history of rheumatic arthritis 14 years back. There has been no history of lung oedema during her preceding pregnancies.

Discussion

The efficacy of all the procedures which are employed for termination of pregnancy, is determined on the basis of (i) rate of immediate side effects. (ii) complications occurring after the completion of the abortion. (iii) instillation and expulsion interval and (iv) the rate of complete abortions. From the point of view of rate of complications whether immediate or late, the intra-amniotic saline has not gained favour and it has not been considered a safe method of induction of abortion in second trimester of pregnancy. The side effects and complications vary from mild vomiting, diarrhoea and headache to severe and fatal septicaemia, convulsions, postabortal haemorrhages, disseminated intra-vascular coagulation and pulmonary oedema.

On the basis of a diastolic murmur which originates within the heart, an abnormal heart rhythm, or clear cardiomegaly it may be easy to decide and indicate heart disease even in pregnancy. Women who may not have "tight" mitral stenosis remain unrecognized during the pregnancy. These women have regular heart rhythm and only slight cardiac enlargement. At times, it may be difficult to decide whether or not a patient has heart disease because systolic murmurs,

accentuated heart sounds and moderate tachycardia which usually accompany the hyperdynamic circulation of gestation in normal patients may be detected between 12 and 20 weeks of gestation and can confuse the issue.

British authors have emphasized the occurrence of acute pulmonary oedema often unanticipated and frequently fatal in cardiac women with a regular heart rhythm. Interruption of pregnancy by the introduction of hypertonic saline solution into the amniotic sac of such asymptomatic patients is hazardous because of sudden sodium overloading and increase in blood volume. Here we put a word of caution that an intense search for a organic lesion in the heart must be made prior to instillation of hypertonic saline into amniotic sac for induction of mid-trimester abortion.

We have not come across any report in the literature where such accidents have been reported. But we feel that it might have happened in the practice of so many physicians that the cardiac lesion remained undetected prior to the instillation of hypertonic saline into the amniotic sac and the true nature of the cardiac lesion was revealed only after the development of cardiac failure and lung oedema subsequent to instillation of hypertonic saline.