THERAPEUTIC ABORTION IN THE SECOND TRIMESTER OF PREGNANCY

by

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Among patients referred to our department for therapeutic abortion, there are pregnancies advanced beyond the first trimester. Needless to say that the conventional method of dilatation and curettage in such pregnancies is a rather dangerous and, at times, not feasible procedure. Therefore, these pregnancies have to be terminated in two or more stages. Such a procedure is not without danger and often it may be necessary to resort to other means, such as vaginal hysterotomy or even laparatomy. It must be realised that such operative procedures impose considerable risk and undue inconvenience to the patient.

Since January 1956, we have adopted a different and simple procedure, based on the method of Boero, for termination of pregnancies in the second trimester, in our department. In view of the simplicity and good results obtained, we consider the description of this method justified.

Material and Method

During the years 1956-1962 we terminated 85 pregnancies by this method. The patients' ages ranged from 14-48 years. The length of the pregnancies was 4-5½ months. The indications are listed in Table 1.

TABLE I

List of Indications for Therapeutic Abortions by Boero

Indications	No. of cases
German measles	26
Mitral stenosis	9
Hypertensive cardiovascular diseases	8
Thyrotoxicosis	[illegible]
Renal diseases	5
Pulmonary disease	2
Diabetes mellitus	2
Hepatic cirrhosis	2
Brain tumour	1
Mental diseases	9
Miscellaneous	14
Total	85

The following technique was applied: A sterile solution of 25% saline or 50% glucose is prepared. The urinary bladder is emptied and the uterine fundus located. The skin corresponding to the level of the fundus is disinfected and a point is chosen and infiltrated with a local anaesthetic. A long, widebore spinal needle, mounted on a 20 ml. syringe is introduced through the anaesthesised area into the amniotic sac. Eighty to one hundred and fifty ml. of amniotic fluid is removed in accordance with the size of the uterus and replaced with a similar quantity of one of the above mentioned solu-

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tions. The needle is then withdrawn. If blood is obtained when the needle is introduced, a slight manoevering brings it into the amniotic sac. When despite this, amniotic fluid is not obtained, the procedure should be abandoned and repeated a few days later.

This technique was applied to 80 cases. In the remaining 5 cases (with 2 additional cases in whom the abdominal route failed) we chose the vaginal route. The patient is put in the lithotomy position. The vagina is exposed and disinfected. The portio is grasped with a tenaculum and its posterior wall is infiltrated with a local anaesthetic solution; the needle is then introduced through the posterior wall of the portio, at the height of its juncture with the vaginal wall, into the uterine cavity and the amniotic sac. The rest of the procedure is carried out as above.

Generally uterine contractions ensue within 12-40 hours and a "spontaneous" abortion results in a few hours. Following the abortion we routinely carry out a digital exploration of the uterine cavity and a curettage with the aid of a blunt curette.

Results

Seventy patients of the 85, on whom this method of induction of abortion was applied, aborted within 18-48 hours (Table 2). Among the remaining 15 cases we failed in 13 cases to withdraw amniotic fluid and instead blood was withdrawn; therefore the procedure was abandoned. After the second attempt (one vaginal), two weeks later, 11 cases

TABLE II
Results of induction of abortion

Results	No. of cases
Abortion after 1st attempt	70
Abortion after 2nd attempt	11
Abortion after 3rd attempt	1
True failure	2
Technical failure	1
Total	85

aborted. In one of the remaining two, we had to repeat the procedure for the third time and this time the vaginal route was chosen. She aborted within 24 hours. In the other case no amniotic fluid could be withdrawn, the pregnancy was terminated in two stages through cervical packing followed by pitocin drip infusion. That leaves us with two more cases, which failed to respond to the above mentioned method. These pregnancies were terminated in two stages through dilatation, digital and instrumental, and removal of the conception products. It is worthwhile noting that the number of complications was very small. (Table 3). There were 7 cases

TABLE III

Complications	No. of cases
Mild temperature from 1-2 days ..	7
Elevated temperature for 3-5 days .. (One case with pelvic peritoneal irritation)	2
Post-abortal haemorrhage and shock	1
Total	10

which ran a mild temperature up to 37.8°C for 1-2 days. Two other cases had an elevated temperature for 3-5 days. One of the latter in

whom the vaginal route was chosen, developed pelvic peritoneal irritation. In all these cases the temperature and the inflammatory signs subsided after antibiotic treatment. One more patient had severe post-abortal hemorrhage and shock attributed to uterine inertia. She subsequently recovered after adequate hemotransfusion.

Discussion

Induction of therapeutic abortion by a similar procedure, in pregnancy advanced beyond the third month, was originally reported by Boero. It consisted in the introduction of a solution of 40% formalin into the amniotic sac. Despite good results obtained by Boero and Masson and Boero, other authors as Nölle, Luff, Werner and Sederl, reported serious complications, such as uterine necrosis and even fatalities with this procedure. Kovacs and Heim used a 25% glucose solution for an extra-ovular injection to induce abortion; however, in 30% of these cases negative results were obtained. Manstein injected a solution of Rivanol and sulphanilamide into the amniotic sac with good results.

As stated above 70 of the 85 cases thus treated aborted within 18-48 hours. In 11 cases we failed to get to the amniotic sac at first attempt. In one case we failed to withdraw the amniotic fluid at all. This failure, we feel, was rather a technical one.

There were only few cases in which we had to use pitocin drip infusion to augment the weak uterine contractions after they had started. There were only two cases who failed to respond to this method and we consider them the true failure since we had in fact introduced the solution into the amniotic sac. Thus the corrected figure of success is as high as 97.6%.

The severe shock due to post-abortal hemorrhage does not seem to have any connection with the employed method, as it was due to uterine inertia. No serious bleeding or other complications occurred among the remaining cases thus treated.

Since the submission of this paper, the above mentioned procedure was applied to 26 more cases for different medical indications, with complete success and without any of the above mentioned or any other complications.

The risk of infection is minimal when stringent aseptic technique is used. Among the whole series presented in this paper there was only one case of severe pelvic inflammatory reaction, where the vaginal route was used, which subsided after antibiotic therapy, a few days later. Eight more cases ran a very mild temperature for 1-2 days which cannot be attributed to infection and which subsided without any treatment.

The danger of amniotic fluid embolism is a probable one but from the reported cases in the literature (Tappin et al. Bengtsson and Csapo and others), as well as in our series where the amniotic fluid was replaced by hypertonic saline or glucose solution, there did not occur a single case of this complication. Furthermore, in recent experiments on rabbits in Csapo's laboratories no mention of this complication is en-

countered. It can thus be stated with a reasonable degree of safety that amniotic fluid embolism is not regarded as a complication of this procedure.

The procedure is simple and replaces other more serious interventions, such as abdominal or vaginal hysterotomy. No forced dilatation of the cervix is attempted, thus avoiding cervical tears and consecutive insufficiency as a cause of abortions. The above series is small and no final conclusion should be drawn, yet the good results obtained are encouraging.

Summary

1. A procedure for termination of pregnancy advanced beyond the third month has been described.

2. Seventy out of eighty-five cases thus treated aborted within 18-48 hours. Eleven cases aborted after a second attempt and one case after the 3rd. In 3 cases the procedure was not successful.

3. No serious complications were noted as a result of this procedure.

4. The method is simple and safe. Further clinical trial is recommended.

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