

EUROBS 01275

## Ultrasound diagnosis of complete abortion can reduce need for curettage

Muhammad Mustafa Mansur

*Maternal & Child Health Clinic, Division of Obstetrics and Gynecology and Emergency Medical Services Division of ARAMCO, Dhahran Health Center, Kingdom of Saudi Arabia*

Accepted for publication 30 August 1991

---

### Summary

One hundred and fifty-five patients presenting with signs of incomplete abortion were evaluated by ultrasound. Of these, 112 (72.26%) were found to have retained products of conception and were treated by dilatation and curettage. The remaining 43 (27.74%) were found on ultrasound to have no products of conception and were followed-up conservatively. Only one of the latter group of patients needed admission later for dilatation and curettage; this patient was found to have a small sub-mucus fibroid and endometritis. Predictive value for those not requiring D&C was 97.6%, suggesting that this test may be useful in identifying those patient who have had a complete abortion.

Abortion; Ultrasonography; Curettage

---

### Introduction

Dilatation and curettage is the most frequent surgical procedure performed throughout the world. The most common indication for curettage is incomplete abortion. This is done almost routinely by many gynecologists whether a gestational sac or placental tissue is known to be present or not, thus including many patients who have already aborted the sac and who can be managed conservatively without exposing them to the risks of anesthesia and surgery.

Although ultrasound has been used for the last decade to examine the gestational sac, little attention has been paid to its utilization in cases of

abortion. The purpose of this study is to look at the value of ultrasound in identifying cases of complete abortion, and to define the criteria needed to make such a diagnosis.

### Materials and Methods

During 1 year preceding this study (1982), 554 cases of dilatation and curettage were done by the Obstetrics and Gynecology staff at ARAMCO, Dhahran Health Center, for incomplete abortion. These were used as a control for this study. Pathological examination of uterine curettings obtained revealed the presence of placental tissue or gestational sac in 401 (72.38%) cases. Only decidua were found in the others.

All patients presenting to the author at the Maternal & Child Health Clinic and the Emergency Medical Services Division of the

TABLE I

Ultrasound findings in bleeding patients

Retained products of conception	82
Missed abortion	11
Total	93

ARAMCO, Dhahran Health Center, between November 1983 and December 1987 with a history of bleeding in the first 20 weeks of gestation were evaluated clinically and by ultrasound examination. All scans were performed by the author using a GE Dataline ultrasound. All patients had had a positive pregnancy test previously. Cases with viable fetuses were then excluded from the study and the rest (155 cases) were studied. On pelvic examination, 93 were actively bleeding and were admitted to the hospital for management and 62 patients were found to have stopped

TABLE II

Ultrasound findings in non-bleeding patients

Empty uterus	39
Retained products of conception	3
Missed abortion/blighted ovum	20
Total	62

bleeding. The ultrasound findings on these two groups are listed in Tables I and II, respectively.

To perform the ultrasound examination the patient was examined on a full bladder. The uterus was evaluated in the longitudinal and transverse planes. The criteria used to make the diagnosis of a complete abortion were: (i) if the uterus is well contracted and patient is not spotting, the endometrium will look like a single curvilinear line that is uninterrupted - from fundus to isthmus (Fig. 1); (ii) if the uterus is not well contracted and the patient is still spotting,



Fig. 1. Complete abortion. (a) Longitudinal section of a uterus that is well contracted. Arrow points to endometrial echoe. (b) Transverse section of same uterus.

the endometrium will look like two parallel curvilinear echogenic lines extending from fundus to isthmus, separated by a thin echolucent layer (Fig. 2a). The latter patients responded to treatment with methyl ergometrine (Fig. 2b).

The criteria used to diagnose incomplete abortion were (i) the endometrial lining is not present and the cavity is filled with all or part of a gestational sac and pieces of placenta (echogenic) (Fig. 3a) and/or blood clots (echolucent) (Fig. 3b); (ii) the endometrial lining may be partly present but is interrupted by pieces of placenta and/or blood clots (Fig. 4).

## Results

Of the 155 cases of incomplete abortion studied (Table III), 62 (40%) were not bleeding. Thirty-nine (62.9%) of these were diagnosed as having complete abortion, and 23 (37.1%) as having not completed the abortion (for which reason they had D&C).

The remaining 93 cases, who were actively bleeding, were admitted to the hospital for management. Four of these stopped bleeding, and on re-examination by ultrasound were found to have completed the abortion. No dilatation and curettage was done and they were discharged from the hospital. The other 89 cases had evacuation of the uterine contents. Pathological examination revealed the presence of chorionic villi in 83 cases, and decidual tissue and clots in six. The specificity of the ultrasound examination was  $83/89 = 93\%$ .

In the non-bleeding group all patients who were found to have completed the abortion were treated conservatively and followed-up 1 week later at the out-patient clinic, but all those found to have retained products of conception, missed abortion, or blighted ovum were admitted for dilatation and curettage. In the bleeding group all patients were treated by dilatation and curettage, except those who stopped bleeding following admission and were found on ultrasound examina-

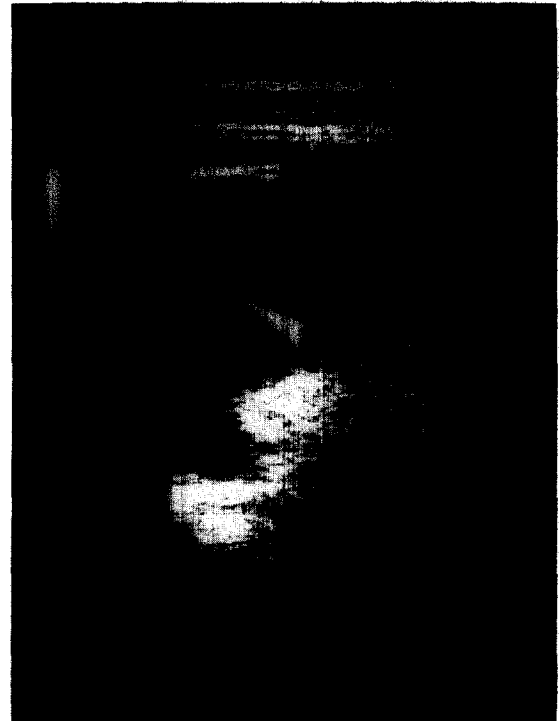
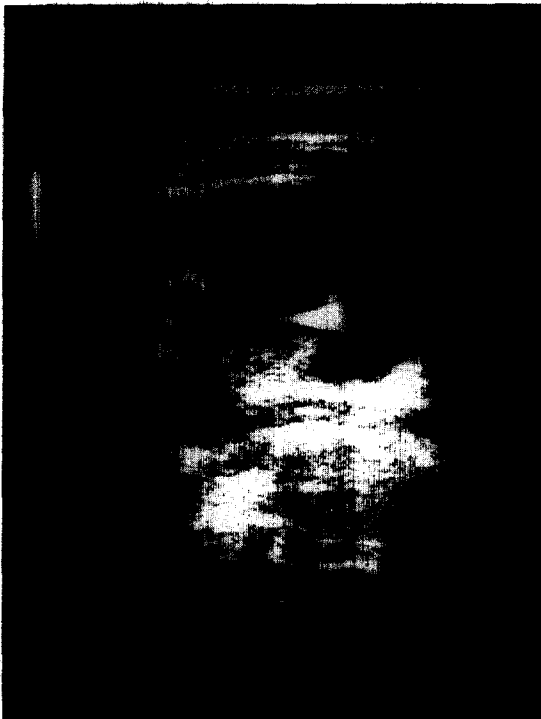


Fig. 2. Complete abortion. (a) Longitudinal section of a uterus that is relaxed. The arrows point to the endometrial linings of the anterior and posterior uterine walls. (b) Same uterus after treatment with Methyl Ergometrine.

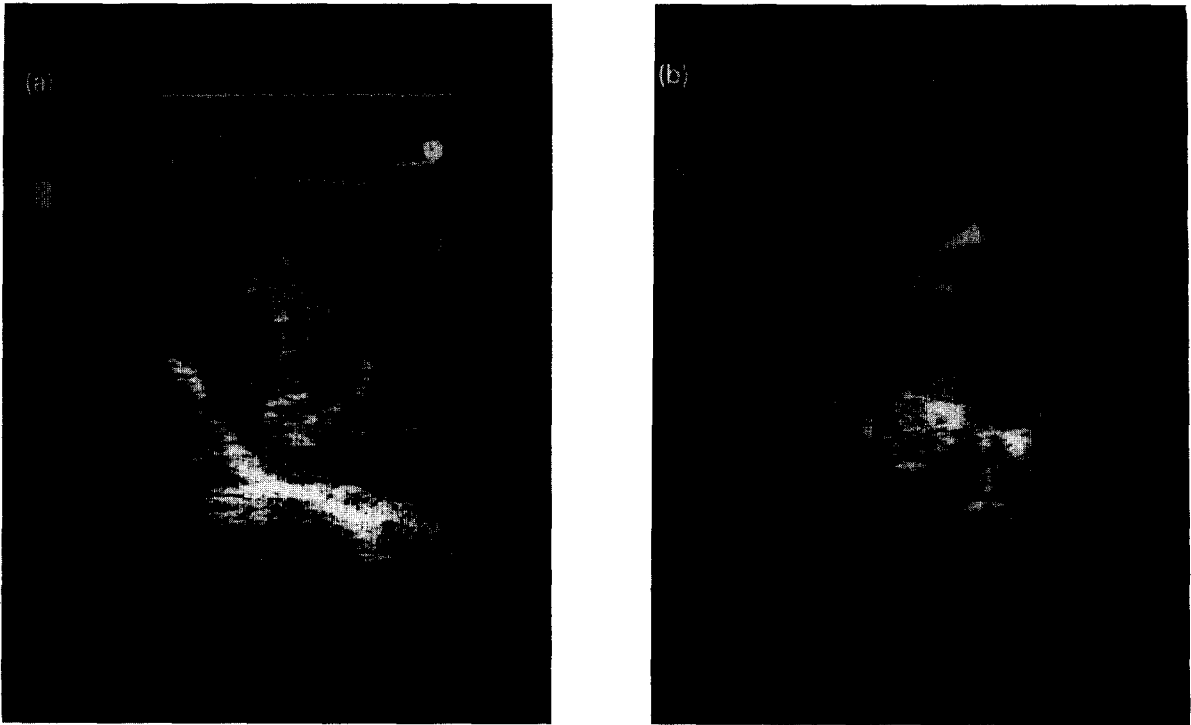


Fig. 3. Incomplete abortion. (a) Arrow points to small gestational sac in a big uterus. (b) Pieces of placenta mixed with blood clots.

TABLE III

Algorithm of management used in study

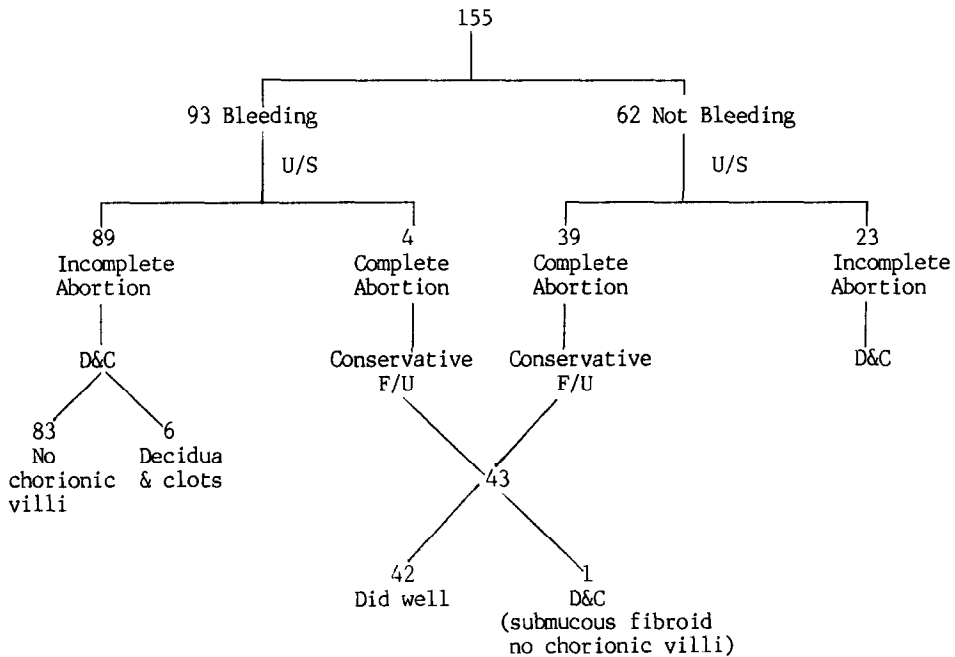




Fig. 4. Incomplete abortion. Upper arrow points to endometrial lining which is interrupted by blood clots (lower arrow). N.B.: Numbers on right upper corner have no significance but were deliberately shown to point the direction of the picture.

tion to have completed the abortion; these were discharged and followed-up conservatively, as was the case for non-bleeding patients.

Forty-two of the 43 cases which were followed-up conservatively did well. One patient needed dilatation and curettage, which revealed the presence of a small submucous fibroid as well as endometritis, but no chorionic villi. Another patient reported passing a dry sac which, on pathological examination, proved to be a decidual cast. The sensitivity of the ultrasound examination in predicting which patients did not require evacuation was  $38/39 = 97\%$ . It is noteworthy that of the 112 patients who had D&C two patients developed post-operative endometritis.

## Discussion

Missed abortions induced in the second trimester are inspected for completion of pla-

centa, and, if cotyledons are missing, curettage is performed. Patients aborting in the first trimester are, in many places, routinely taken to the operating room for 'cleaning', and often very little tissue or decidua is retrieved. Common as it is, however, dilatation and curettage entails many risks; namely, aspiration under general anesthesia [1], uterine perforation, cervical injury, infection, hemorrhage, synechiae [2], uterine fistulae and death [1]. Even in the absence of these complications, the cost, in terms of hospitalization and absenteeism from work, is substantial. Levin et al. [3] agreed with other observers that not all cases absolutely require curettage, but they found it all but impossible to accurately differentiate clinically between those abortions which were complete and those which were not. Ultrasound has been reported [4-5] to aid in diagnosing an empty uterus - however, the technique has not been extended for use in the evaluation of incomplete abortion in order to predict cases of complete abortion and thus avoid curettage. The study presented here clearly showed that with readily available technology, hospitalization and unnecessary surgical manipulation could be avoided in 27%  $[(39 + 4 - 1)/(155)]$  of all cases presenting with history and signs of incomplete abortion. Bleeding and/or infection was not higher in this group than for those who underwent surgery.

With some training, the technique can be mastered by physicians and ultrasound technicians, but, until then, all borderline cases must be carefully observed and followed-up.

## References

- 1 Baggish MS, Hooper S. Aspiration as a cause of maternal death. *Obstet and Gynecol* 1974;43:327.
- 2 Jensen PA, Stromme WB. Amenorrhoea secondary to puerperal curettage. *Am J Obstet Gynecol* 1972;113:150.
- 3 Levin AC, Rizzi JN, Veprovsky EC. Management of incomplete abortion. *Am J Obstet Gynecol* 1962;83:9.
- 4 Callen PW, DeMartini WJ, Filly RA. The central uterine cavity echo: a useful anatomic sign in the ultrasonographic evaluation of the female pelvis. *Radiol* 1979;131:187-190.
- 5 Hall DA, Hann LE, Ferrucci JT et al. Sonographic morphology of the normal menstrual cycle. *Radiology* 1979; 132: 677-682.