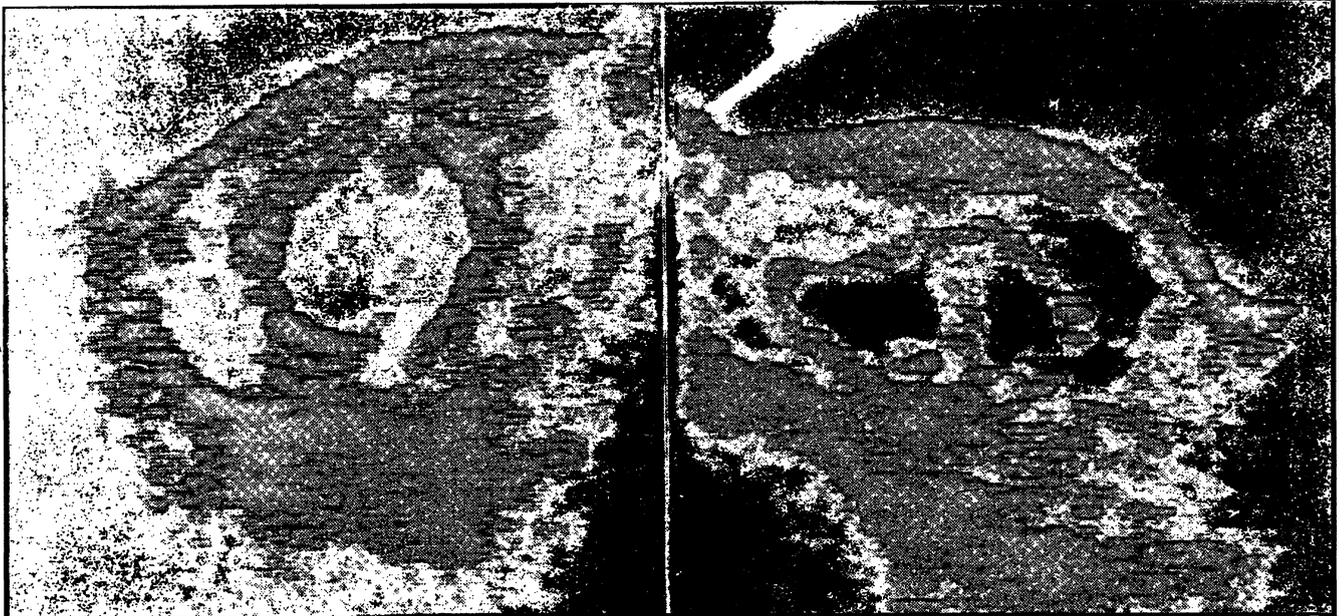


Membrane detachment or second amniotic sac?

Allemann F., Ramzin M.S.

The membrane detachment and so-called empty 2nd gestational sac in early pregnancy are well-known phenomena and have been observed by many investigators. The typical sonographic pictures are shown in the following slides.



membrane detachment

2 gestational sacs with hematoma

It is not always easy to distinguish membrane detachment with hematoma from a 2nd gestational sac, because of similar structures in both cases. Mostly, interpretation of those pictures is subjective and depends on investigator and machine, given the lack of objective criteria. For example, the device with enhanced echoes will show more 2nd gestational sacs than separation of membrane with hematoma. Indeed, we are not always able to differentiate how significant the electronic "make-up" of our devices is. Therefore, we followed these cases as one group. The purpose of our study was firstly to investigate the morphological basis, and, secondly, the clinical significance of such findings. Routine ultrasonic examination in the first half of pregnancy has been performed during the last two years (1979-1980) in 5000 pregnancies. So-called 2nd gestational sac or membrane detachment was observed in 42 cases (0.8%). 20 out of 42 cases showed no clinical symptoms, the rest of the patients showed typical signs of imminent abortion. In two thirds of the cases the first diagnosis was established prior to 12 weeks of gestation. Prospective follow-up of these pregnancies was carried out by ultrasound and clinical observation. No hormonal assays were performed. No drug therapy (e.g. gestagens or B-mimetics) was applied. The abortion rate in the group with symptoms was 41%. This incidence is significantly higher compared with the usual abortion rate in the first half of pregnancy. On the other hand, the rate of abortion in the group without clinical symptoms was 10% and consequently not higher for that period of gestation. In patients who did not abort the abnormal ultrasonic findings and clinical symptoms disappeared prior to the 20th week of pregnancy. The perinatal outcome of those pregnancies was not complicated by a higher rate of prematurity, small-for-dates, malformations or other obstetrical complications. In spite

of careful investigation of placentas and fetal membranes after delivery, we were able to detect significant changes such as necrotic sac and organized hematoma in 6% only. In abortion material hematomas and necrotic membranes were frequently observed, but 2nd gestational sac was rarely seen. Still, it is difficult to say if the hematoma and necrotic membranes were primary or secondary products. We lacked the morphological basis for the sonar findings during the first half of pregnancy in the remaining cases. It is possible that the described ultrasound findings represent two phenomena: one group with detachment of membrane and the second group with two gestational sacs as an abnormal development of twin pregnancy. According to our experience the early prenatal loss of twin pregnancy prior to 20th week of gestation was 6% as per number of embryos. This rate could be higher if all pregnancies with two gestational sacs are included. The etiology of membrane detachment in early pregnancy is still unclear. It was suspected that fibroids of the uterus could lead to higher incidence of membrane detachment. In our prospective study we were not able to show such a concurrence. Furthermore, uterine malformations, maternal age and previous abortions had no relation to early detachment of membrane.

Summary: The prospective study of typical ultrasound findings described as membrane detachment and 2nd gestational sac was performed in the two-year period 1979-1980. During this time 5000 cases were routinely examined in the first half of pregnancy. The following data were obtained: 1. The incidence of membrane detachment and 2nd gestational sac was 0.8%. 2. Sonar findings of membrane detachment and 2nd gestational sac was associated with clinical symptoms such as bleeding and contractions in 52% only. The remaining cases were accidentally discovered during routine ultrasound examination. 3. The abortion rate increased up to 41% only in the group of patients with early appearance of clinical symptoms. 4. If pregnancy continued the symptoms and abnormal ultrasound findings disappeared after 20th week of gestation. 5. The etiology of the phenomenon is not always clear. After delivery changes such as necrotic sacs or organized hematomas were found in 6% only. 6. No epidemiological factors were found such as maternal age, fibroids, uterine malformations and previous abortions. 7. Prognostic significance of ultrasound findings is only relevant in relation to higher abortion rate. No further complications such as prematurity, small-for-dates, malformations and other obstetrical complications were observed.

Adresse: Dr. F. Allemann, Universitäts-Frauenklinik, CH-4000 Basel