MANAGEMENT OF EARLY GESTATIONAL SAC (EGS)

AIM

• To provide information on the management of an early gestational sac

BACKGROUND

The earliest definitive evidence of pregnancy visible on ultrasonography is the gestational sac. 4 weeks + 3 days is the earliest time to see a gestation sac eccentrically placed within the endometrium by a transvaginal ultrasound (TVS). By 5 weeks + 2 days the sac should be visualised, and should be 2-5 mm in diameter. 1, 2, 78.6% TVS after 49 days of gestation will diagnose pregnancy. 3 Very early gestational sac appears as fluid collection in central echogenic portion of the uterus; sometimes seen as the “double sac sign” or the “intradecidual sign”. 2

Ultrasound features with an empty gestational sac with mean diameter > 25mm and absent yolk sac with mean gestational sac diameter > 20 mm are the threshold which has the most precise estimate of specificity for diagnosing early embryonic demise. 4 A biochemical marker such as decline in hCG may predict miscarriage but does not preclude laboratory error or a physiological drop in hCG late in the first trimester. It is imperative to have a high specific test with zero false positive rate as diagnosis of fetal demise results in evacuation of the uterus. Ultrasound has lowered threshold values for visualisation of gestational sac. 5 Disproportionately small or non-visible embryo within an enlarged amnion is a good marker for a failed pregnancy. Theoretically cardiac activity should be evident when embryo is over 2mm, but in 5-10% of cases where this has been documented pregnancy outcome was normal. 6

The presentation of women with an “empty sac” is common; with up to 10% of women attending health centres with uncertain viability in pregnancy. 7 Early normal pregnancies always show a gestational sac but no detectable embryo during a brief but finite stage of early development. 1 Once a gestational sac has been documented subsequent loss of viability remain around 11%, there is no difference between gestational sac diameter when compared with pregnancy outcome. 6 If an embryo has developed up to 5 mm length, loss of viability occurs in 7.2% of cases. 6 Persistence of yolk sac has been found inside the gestational sac after embryonic demise. 6 10-20% of ectopic pregnancies have an intruterine pseudo gestational sac and it is important to be aware of the rare possibility of concurrent intrauterine and extra uterine pregnancy. 8

DEFINITION

Intrauterine sac: < 20mm mean diameter with no obvious yolk sac or fetus. Uncertain viability: an intrauterine gestational sac of < 20mm in mean diameter with no obvious yolk sac, or the presence of a fetus or fetal echo of < 6 mm CRL with no obvious fetal heart activity. A repeat scan at a minimum interval of 1 week is necessary.

Missed miscarriage: a gestation sac with a mean diameter greater than 20mm and no evidence of yolk sac or an embryo is high suggestive, or a gestational sac less than 20mm or crown rump length less than 6 mm.
ULTRASOUND FEATURES OF EGS

- It is seen as a round, anechoic structure with an echogenic rim. When it first appears on ultrasonic imaging, the gestational sac is surrounded by a thickened decidua. This perimeter then becomes a distinct “double ring” (Also known as the “double decidual sign”).

- It is eccentrically placed i.e. it remains within a thickened decidua on one side of the uterine cavity.

- It is typically located in the fundus on the posterior wall.

- Mean Sac Diameter (MSD) is a useful indicator of GA before Crown Rump Length (CRL) measurement is available.

MANAGEMENT

1. Early gestation sac needs to be differentiated from a pseudo gestation sac.

2. A follow up scan should be arranged in 7-10 days if there is certainty about the diagnosis of EGS or in 3 days to assess the growth of the sac if the diagnosis is uncertain. A healthy gestational sac grows by 1.2mm / day.

3. A yolk sac will usually be visible at the next scan in a normal pregnancy.

4. Correlation with quantitative β-hCG levels will be helpful although it should be remembered that following up every early gestational sac with serial measurements of βhCG leads to increased patient anxiety.

5. Give the woman information about when to attend for further medical review.

Refer to Clinical Guidelines:

Early Pregnancy Bleeding/Pain Algorithm

REFERENCES


