Chapter 17
Cystic Masses During Pregnancy:
What Is the Optimal Management?

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ABSTRACT

The prevalence of cystic masses in pregnancy varies from 0.1 to 2.4% and approximately 1 to 6% of these masses are malignant. The clinical presentation of cystic masses in pregnancy varies widely. The majority of cystic masses identified in pregnancy are benign simple cysts less than 5mm in diameter. Malignant neoplasms may be developed, and it is of paramount importance for the attending physician to be able to identify them. Ultrasonography is an excellent tool for the detection of cystic masses and for the discrimination between benign and malignant masses. IOTA group has proposed simple ultrasound rules in order to distinguish between benign and malignant cystic masses. In some cases where there is uncertainty about the type of mass, the MRI has high diagnostic value. Tumor markers that used in epithelial and nonepithelial cancers in nonpregnant women are difficult to interpret in pregnancy, because they are involved in biological functions associated with fetal development, differentiation, and maturation.

PREVALENCE

The prevalence of cystic masses in pregnancy varies from 0.1 to 2.4% and approximately one to 6 percent of these masses are malignant (Schmeler KM et al. 2005, Smith LH et al. 2001, Webb KE et al. 2015, Aggarwal P et al. 2011 and Giuntoli RL et al. 2006).

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Cystic Masses During Pregnancy

The majority of the ovarian masses diagnosed during pregnancy are benign simple cysts with diameter less than 5cm. Most of them are functional ovarian cysts, follicular or luteal, which are part of the normal ovarian function. Approximately 70 per cent of all cystic masses diagnosed in the first trimester of pregnancy, resolve in the early second trimester without any intervention, as part of the natural history of the functional cysts (Giuntoli RL et al. 2006).

In addition, simple cysts in the first trimester with diameter ranging between 1cm and 3 cm, are independent of the gestational age (Perkins KY et al. 1997). However, it is apparent that the size of the cyst at diagnosis is inversely correlated to the probability of the cyst to resolve in the first trimester. Only six per cent of the cysts with diameter less than 6 cm persist in the second trimester, while 39 per cent of those with diameter greater than 6 cm persist in the second trimester (Di Saia PJ et al. 2002). The majority of the persisting cysts with diameter greater than 6 cm are mature teratomas (Schmeler KM et al. 2005). In addition, the ovarian cystic masses that present during pregnancy, have similar characteristics with functional cysts of non-pregnant women of reproductive age (Goffinet F. 2001).

Two distinct cystic masses in pregnancy are the luteomas and the theca lutein cysts. Both cystic masses tend to resolve spontaneously as pregnancy progresses and there is no need for surgical intervention. Surgical intervention is required only in the case of complications.

Luteomas comprise 0.7 per cent of the cystic masses during the pregnancy. The size of luteomas varies from 1cm to 20 cm, usually they are well demarcated and one third of them are located bilaterally.

Theca lutein cyst may present in pregnancy in case of pathologically increased levels of human chorionic gonadotropin (hCG). In fact, theca lutein cysts are luteinized follicle cysts that form as a result of overstimulation from high human chorionic gonadotropin (hCG) levels or hypersensitivity to hCG. Women with gestational trophoblastic disease, multiple gestation, ovulation induction, or a pregnancy complicated by fetal hydrops are likely to represent theca lutein cysts. They usually present as bilateral multiseptated cystic adnexal masses. As the majority of the cystic masses in pregnancy, theca lutein cysts resolve spontaneously with the completion of the pregnancy and there is no need for surgical intervention. Only cysts that cause obstruction and complications may need to be surgically addressed (Goffinet F. 2001).

However, one of the following tumors may develop during the pregnancy and it is of paramount importance for the clinician to be able to recognize and differentiate these tumors from the benign cystic mass lesions.

Malignant Neoplasms

Epithelial ovarian tumors comprise approximately one-half of all ovarian malignancies in pregnant women, germ cell ovarian malignancies make up approximately one-third, and stromal tumors and a variety of other tumor types (eg, sarcomas, metastatic tumors) account for the remainder.

Epithelial Ovarian Tumors

Approximately half of the epithelial ovarian tumors detected in pregnancy are of low malignant potential (formerly called “borderline”), and the other half are invasive (Palmer J et al. 2009). Epithelial ovarian