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Management of ovarian adnexal masses

Ovarian adnexal masses are common and are mostly benign, but they can be cancerous. Ovarian cancer remains the most fatal gynecologic malignancy and is the fifth leading cause of cancer death in women in North America. The risk of ovarian cancer increases with age, with highest risk occurring after menopause. Accurately distinguishing between benign and malignant adnexal masses is essential for effective management. Adnexal masses classified as low risk of malignancy can be managed expectantly or removed through minimally invasive techniques, while high risk masses require further evaluation and referral to a gynecologic oncologist.

What is an adnexal mass?

An abnormal growth that forms in the tissue near the uterus, in the ovaries, fallopian tubes or surrounding connective tissues. Many adnexal masses disappear on their own, but some require treatment, which may include surgery.

What causes the development of an adnexal mass?

Gynecologic causes are the most common or non-gynecologic causes that involve the digestive or urinary system. Here are some common causes:

Pregnant Individuals

 Ectopic pregnancy common cause of adnexal masses, are usually benign and occurs as a result of hormonal changes identified during pregnancy.

Non-Pregnant Individuals

- Functional ovarian cysts (i.e., luteal cysts).
- Multiple small cysts on enlarged ovaries (i.e., polycystic ovaries).
- Leiomyomas benign, fibrous tumors usually occurring in the uterus.
- Endometriomas, which are cysts that form when endometrial tissue grows in or around the ovaries.
- Pelvic inflammatory disease or other causes of tubo-ovarian abscesses (i.e., collections of pus in the ovaries and fallopian tubes).

Non-gynecologic

 Inflammatory masses of the appendix, colorectal cancer, as well as pelvic, kidneys, breasts, and colon cancer, when spread to other organs, can metastasize in the pelvis and create adnexal masses.

Symptoms	Risk factors
 Irregular vaginal bleeding 	Premenarchal
Bloating	Early menarche
Dyspareunia	 Post-menopausal > age 50
 Urinary symptoms 	Nulliparity
Pelvic pain	Infertility
 Difficulty eating 	 Personal history of breast or colon cancer
 Feeling of satiety 	• Family history of breast, colon or ovarian
Weight loss	cancer

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Management of ovarian adnexal masses (cont'd)

Diagnostic evaluation tools

- 1) **Transvaginal ultrasonography (TVUS)** first choice for imaging of an adnexal mass.
- 2) **CA125 biomarker** may assist in the evaluation of an adnexal mass in select patients. CA 125 levels may be elevated in a number of conditions other than ovarian cancer.
- 3) Computed tomography (CT) or magnetic resonance imaging (MRI) suggested when lesion origin is uncertain.
- 4) **Surgery** is the ultimate diagnostic tool.

Ovarian-Adnexal Reporting and Data System (O-RADS) system has been developed to categorize sonographic differentiation of benign and malignant adnexal masses and assign appropriate clinical management.

O-RADS Group	Classification	Description		
0-RADS 0	An incomplete evaluation	It may be due to technical factors or inability to tolerate endovaginal imaging.		
0-RADS 1	The physiologic category (normal premenopausal ovary)	Ovarian follicle and corpus luteum <3cm		
0-RADS 2	The almost certainly benign category (1% risk of malignancy)	Unilocular cyst <10cm consists of simple cysts, non-simple cysts, non-simple unilocular cyst with smooth walls.	Classic benign cysts <10 cm consists of hemorrhagic cyst, dermoid cyst, endometrioma, paraovarian cyst, peritoneal inclusion cyst and hydrosalpinx.	
0-RADS 3	Lesions with low risk of malignancy (1% to 10%)	 Unilocular >10 cm (simple or non-simple) Typical dermoid, endometriomas, or hemorrhagic cysts >10 cm Solid smooth lesion of any with color score 1 Multilocular cyst <10 cm smooth inner wall with color score 1-3 		
0-RADS 4	Lesions with intermediate risk of malignancy (10% to 50%)	 Unilocular cyst with a solid component, any size, 1-3 papillary projections, any color score Multilocular cyst with solid component, any size, color score 1-2 Multilocular cyst without solid component >10 cm, smooth inner wall with color score 1-3 Any size smooth inner wall with color score of 4 Any size with an irregular inner wall or irregular septations of any color score Solid smooth lesion of any with color score 2-3 		
O-RADS 5	Lesions with high risk of malignancy (≥ 50%)	 Presence of ascites / peritoneal nodularity Unilocular cyst with 4 or more papillary projections Multilocular cyst with a solid component - color score 3-4 Solid lesion - smooth outer contour, any size, color score 2-3 Solid irregular lesion of any size 		
Color Score Indicator	Doppler flow is assigned a color (B-feature). The color score incr which can indicate a malignant	assigned a color score (CS). The absence of color is assigned a CS of 1 and is considered benign e color score increases with the amount of color flow seen, up to a color score of 4 (very strong blood flow), cate a malignant or M-feature.		

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Management of ovarian adnexal masses (cont'd)

Management

Serial ultrasonography should be used to monitor a suspected benign adnexal mass. If an adnexal mass persists for longer than 12 weeks, referral to a gynecologist is indicated. At a minimum, at least 1-year follow up showing stability or decrease in size is recommended with consideration of annual follow-up of up to 5 years.

Premenopausal

- Ovarian cancer is rare in premenopausal women. Other eitologies, such as functional cysts, leiomyomata, and ectopic pregnancy, are more common and can cause significant morbidity.
- Serum CA 125 levels are normally higher in premenopausal women in most benign condition and are not routinely used during the diagnostic workup of an adnexal mass.
- Simple cysts 10 cm or smaller can be managed conservatively with serial ultrasonography. These cysts have a very low incidence of malignancy.
- Complex masses can also be followed conservatively if they are 10 cm or smaller or if they persist for less than 12 weeks.
 Complex masses may rarely be malignant in premenopausal women. These masses are most likely to be hemorrhagic cysts or endometriomas; however, tubo-ovarian abscess, ectopic pregnancy, and ovarian torsion can also present as a complex mass. however, it is acceptable to refer premenopausal women with a smaller complex adnexal mass to a gynecologist or gynecologic oncologist.
- Highly elevated CA 125 levels ≥ 200 U per mL, ascites, or evidence of abdominal or distant metastases referral to a gynecologic oncologist is recommended.

Postmenopausal

- Most ovarian cancer occur in women over 50 years of age.
- Appropriate tests should be carried out to exclude ovarian cancer in a postmenopausal woman who developed nonspecific symptoms within the last 12 months.
- It is recommended that ovarian cysts in postmenopausal women should be initially assessed by measuring serum CA125 level and transvaginal ultrasound scan.
- Elevated CA 125 level ≥ 35 U per mL, with an complex adnexal mass of any size or a simple cyst larger than 10 cm, evidence of abdominal or distant metastases, or ascites referral to a gynecologic oncologist is recommended.

Premenarchal

- Ovarian cancer can occur in a premenarchal patient, and symptoms suggestive of an adnexal mass should
- not be ignored in that population. • Study found that approximately 25%
- of adnexal masses in patients younger than 18 years were malignant.
- An adnexal mass in a premenarchal patient, or the presence of symptoms associated with a mass, should prompt referral to a gynecologist.

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Asymptomatic simple cysts 10 cm or less in diameter with a CA 125 level less than 35 U per mL (if drawn) may be managed with close follow-up, regardless of patient's age (if past menarche).

All women, regardless of menopausal status, should be referred if they have evidence of metastatic disease, ascites, a complex mass, an adnexal mass greater than 10 cm, or any mass that persists longer than 12 weeks.

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Treatment

Treatment options for adnexal masses vary depending on the specific diagnosis. Some masses can be treated conservatively, and others may require surgery.

Observation

 Generally recommended when the appearance of the adnexal mass on ultrasonography suggests a benign growth. Most of the time,

cysts up to 10 cm (approximately 4 inches) in diameter are benign and self-limiting.

Surgical Intervention

 Preferred for symptomatic masses or for suspected malignancy, based on the results of imaging and serum testing. For benign masses, minimally invasive techniques are the preferred method of intervention. One such method is laparoscopy and in cases of larger or malignant cysts that cannot be extracted laparoscopically, open surgery may be required.

Underwriting considerations

Ovarian adnexal masses are a common issue in pre-and postmenopausal women. It can cause a variety of symptoms; in some cases, they can also be indicative of some serious condition, such as ovarian cancer. In evaluating this risk, the following factors are important:

- Individual's age, personal history, and menopausal status
- Family history of a first-degree relative with ovarian or breast cancer should add urgency to any evaluation of an adnexal mass.
- Ultrasound characteristics and CA 125 level to determine the probability of malignancy
- Appropriately manage and refer to a gynecologic oncologist if indicated.



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