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Ovarian Cyst

By

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Abstract

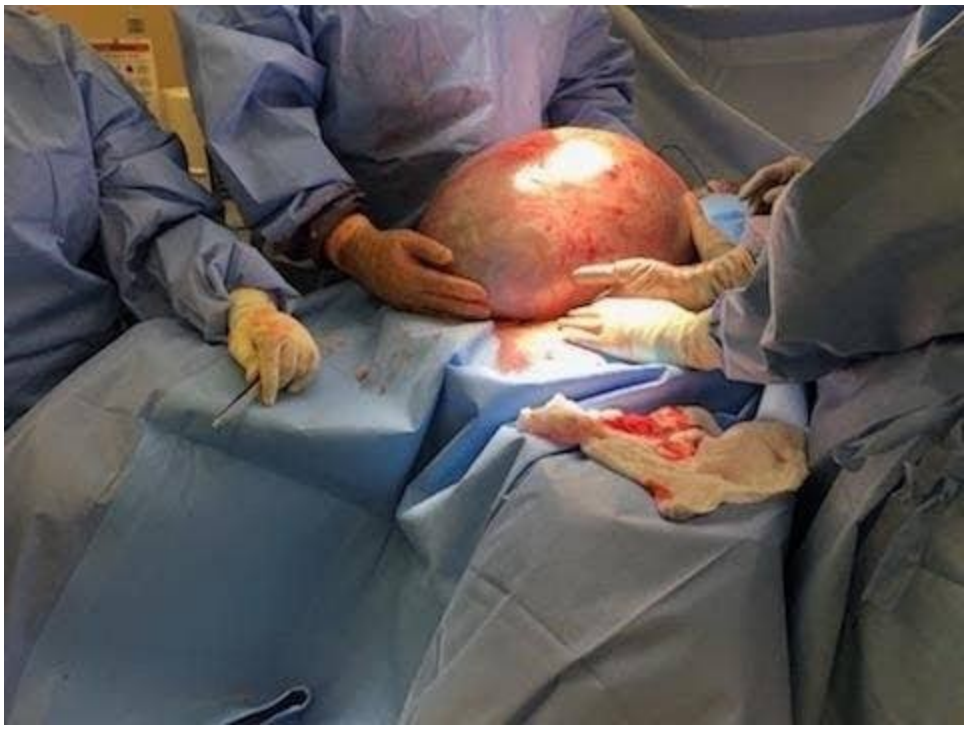
An ovarian cyst is a sac filled with liquid or semiliquid material that arises in an ovary. While the discovery of an ovarian cyst causes considerable anxiety in women owing to fears of malignancy, the vast majority of these lesions are benign. Most patients with ovarian cysts are asymptomatic, with the cysts being discovered incidentally during ultrasonography or routine pelvic examination. Some cysts, however, may be associated with a range of symptoms, sometimes severe. Many patients with simple ovarian cysts found through ultrasonographic examination do not necessitate treatment. When ovarian cysts are large, persistent, painful or have concerning radiographic or exam findings, surgery may be required, sometimes resulting in removal of the ovary

Introduction

In the ovary, an ovarian cyst is a sac containing a liquid that develops over some time. The incidence of ovarian cyst diagnoses has grown due to the widespread use of routine physical exams and ultra-sonographic equipment to detect ovarian cysts. Even though the diagnosis of an ovarian cyst may create significant anxiety in women due to thoughts of malignancy, the great majority of ovarian cysts are noncancerous.

Females may acquire these cysts at any time of their lives, from the perinatal era through the postmenopausal period. The majority of ovarian cysts, on the other hand, appear during the developmental stages of childhood and adolescence, when the body is most hormonally active.

Ovarian cysts, on the other hand, might signal the onset of a malignant process or, in certain cases, can serve as a diversionary tactic to divert attention away from a more severe illness, such as ovarian torsion, ectopic pregnancy, or appendicitis (breast cancer or ovarian cysts may have an inverse association. [1,2].



Clinical Signs:

People with ovarian cysts are often unaware of their condition, and the cysts are only detected accidentally by ultrasonography or an average pelvic check. Some cysts, on the other hand, maybe accompanied by a variety of symptoms, some of which are severe, such as the following [3]:

- Pain in the lower part of the abdomen
- Sudden, sharp pain due to Cyst rupture; that associated with exercise and trauma [3,4]. Rupture of the Cyst is leading to abdominal distention and bleeding.
- Pain during the intercourse and increased during the deep penetration
- Abnormal alteration of the gut movements, for example, the constipation
- the pressure inside the Pelvic are leading to urinary frequency or tenesmus

- abnormal menstrual [5]
- Early menarche and Precocious puberty in young.
- bloating
- heartburn and indigestion
- Hyperpyrexia is the increased temperature (3).
- Endometriomas are cause pain and dyspareunia
- The heart rate is increased while the blood pressure is decreased, particularly after the cyst rupture
- shortness of breath, weight loss, and lymphadenopathy.

Diagnosis

According to ACOG recommendations, transvaginal ultrasonography is the recommended imaging modality for the evaluation of a suspicious pelvic lesion.. [6]. The definitive diagnosis of all polycystic ovary syndrome is made based on histologic examination of the cyst. Each cyst kind has its own set of characteristics.

Even though laboratory tests are not diagnostic for ovarian cysts, they may assist in the detection of cysts and the detection of cyst-related problems. Among the studies are the following:

1. Pregnancy test in the urine
2. A complete blood count is performed (CBC)
3. The urinalysis
4. Endocervical swabs if there is a suspicion of an infectious cause.
5. Testing for serum biomarkers.

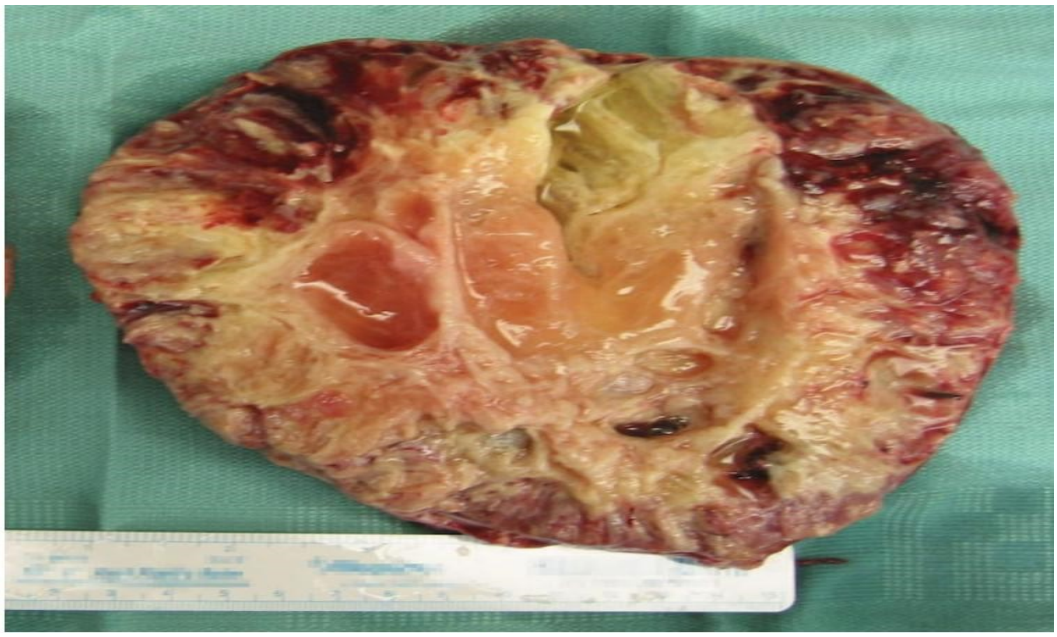
Pathophysiology:

1- **Follicular cysts**:

Follicular cysts may develop during the follicular phase due to a loss of physiologic discharge of the ovum as a result of massive FSH activation or a lack of the usual LH surge at midcycle, just before ovulation respectively. The activation of hormones leads these sacs to continue to grow and spread. These cysts are often more significant than 2.5 cm wide and appear as pain and heaviness in the area where they are located. Granulosa cells, which line the inside of the follicle, may also persist, resulting in excess of estradiol synthesis, which, in turn, reduces the regularity of menstrual and menorrhagia, among others other effects. [7] Cysts in the neoplastic stage

2- **Neoplastic cysts:**

They are formed due to an abnormal proliferation of cells inside the ovaries and can be either malignant or benign. Malignant tumours may occur from any ovarian cell type and tissues. The most common, by far, are lesions developing from the epithelial lining (mesothelium), the majority of which are somewhat cystic lesions in nature. Cystadenomas, both serious and mucinous, are the benign equivalents of these malignancies. Other types of malignant ovarian tumours, such as granulosa cell tumors derived from sex cord-stromal cells and germ cell tumors derived from primordial germ cells, may also have cystic regions.



3- **Teratomas:**

Teratomas are a kind of germ cell tumor [8] that contains material from all three embryonic germ layers, i.e., the mesoderm, endoderm, and ectoderm. Teratomas are seen in both males and females. The picture below depicts a mature cyst cancerous tumor at its most advanced stage.

4- **Endometriomas:**

Is blood- contains cysts that emerge from the ectopic endometrium and are associated with endometriosis, which results in dyspareunia and dysmenorrhea.

5- Polycystic ovarian syndrome:

In this condition (Polycyctic ovarian syndromS), the ovary has several cystic follicles average diameter is usually (2.5) mm

Risk factors:

The following are some of the risk factors for the development of ovarian cysts:

- Patients undergoing infertility therapy, such as ovulation induction with gonadotropins or other drugs, such as letrozole or clomiphene citrate, lead to the formation of cysts as a result of ovarian cancer hyperstimulation syndrome, which is characterised by the overproduction of eggs.
- Tamoxifen's medication may create benign functional ovarian cysts, which generally disappear if the medication is stopped.
- Polycystic ovarian syndrome may occur during the second trimester in pregnant females when the hormone hCG levels are at their highest [9].
- Hypothyroidism - Because the alpha subunit of (TSH) and human chorionic gonadotropin (hCG) are structurally similar, hypothyroidism may increase ovarian and cyst growth [10].
- In certain cases, the transplacental effects of maternal gonadotropins might result in ovarian cysts in both newborns and fetuses [11].
- Cigarette smoking - Cigarette smoking increases the chance of functional ovarian cysts, and the risk from smoking may be enhanced even more if one's body mass index is lower (BMI) [12, 13].
- Functioning cysts have been related to tubal ligation sterilizations [14].

Risk factors for ovary cystadenocarcinoma:

1- White race
2- Family history
3- Old age
4- Infertility
5- BRCA gene mutations
6- History of breast cancer
7- Nulliparity

Management:

Many women who have minor ovarian cysts that are discovered with ultrasonographic screening do not need medical treatment. In a postmenopausal woman with a chronic simple cyst less than 10 cm in diameter and a normal CA125 result, repeated ultrasound scans may be performed to monitor the cyst's progression [5,15,6].

Pharmacological intervention:

Functional ovarian cysts may be prevented by using contraceptive pills as a preventative measure. In contrast, functional cysts that have already formed do not retreat more rapidly when treated with a combination of oral contraceptives than when managed with expectant care [16].

Laparotomy and laparoscopy:

Are two terms used to refer to the same procedure, Simple ovarian cysts that are persistent and greater than 10 cm in diameter (particularly if symptomatic) and

complicated ovarian tumors should be evaluated for surgical excision. A minimally invasive method (laparoscopy) with extremely incisions may be used with an open technique (laparotomy) to achieve the desired results. The latter technique is preferable when the outcome is assumed to be benign [6]. Removing the Cyst entire for pathological investigation may entail removing the whole ovary, a fertility-sparing procedure should be performed in younger women if the cyst is large [6].

Oophorectomy on both sides of the body:

Because of the higher risk of neoplasms in this demographic, several postmenopausal females with Polycystic ovary syndrome are subjected to bilateral oophorectomy and, in some cases, hysterectomy.

Complications:

The treatment of ovarian cysts may result in a variety of different results. A benign cyst is asymptomatic and does not need treatment; it will dissolve on its own in the vast majority of instances, without the need for further intervention. The rupture and bleeding of an ovarian cyst and the torsion of the cyst may occur in different instances.

Prognosis:

The outlook for benign cysts is quite good; it is outstanding. All of these cysts can develop in remaining tissue sections or in the opposite ovary. In general, 70 % to 80 % of follicular cysts heal independently without the need for treatment.

Pcos cases are often concerned about the possibility of malignancy. In pregnant women who have simple cysts less than 6cm in diameter, the chance of developing malignancy drops to less than 1%. The majority of these cysts disappear between 16 and 20 weeks of pregnancy, with 96 % of these masses disappearing independently. [17] 0.3 % of postmenopausal individuals with unilocular cysts develop cancer, according to the National Cancer Institute.

The danger of neoplasia increases to 36 % in complicated and multiloculated cysts. Regional or distant spread may be present in approximately 70% of cases if cancer is discovered, with only 25% of new cases being restricted to stage I illness. [18]

The mortality rate related to ovarian carcinoma is connected to the stage of the illness at the initial diagnosis. Individuals with this cancer are more likely than other cancers to appear late in the disease's progression. Overall, the five-year survival rate is 41.6 %, with the rate varying from 86.9 % for (FIGO) stage Ia to 11.1 % for stage IV, depending on the stage.

Even though they have a more benign course, a different category of less aggressive tumors with a low malignant potential has been linked to certain deaths in recent years. Over five years, the total rate of survival is 86.2 % [19],

The possibility that benign ovarian cystadenomas might develop into malignant tumors has been hypothesized. However, this has not been demonstrated too far. Dermoid cysts (which have an exceedingly terrible prognosis) and endometriomas are two conditions in which malignant transformation may develop in a tiny proportion of cases.

The Patient education:

Provide patients with proper release and follow-up instruction and data, including evidence of the possible hazards of infertility, impairment, and malignancy resulting from delays or non-compliance with these instructions and information.

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