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A review of ovarian cyst in Gynaec practice

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Abstract
Introduction: Physiologic & functional Ovarian Cysts are most commonly seen in reproductive age group but also to be seen in any age group from infancy to postmenopausal period. Incidence of Ovarian Cyst in gynaec OPD at attending OPD in Dr.V.R.K Hospital is 0.6%. The study was conducted to evaluate the percentage of regression of ovarian cyst with 3 months OCPs (Category II 3 menstrual cycles — either underwent ultrasound follow-up for 3 months or administration of OCP (oral combined pills for 3 months).
Methodology: A prospective study was conducted in which women presenting with complaints such as abdominal pain, bloating, menstrual irregularities, or those found to be asymptomatic but diagnosed with ovarian cysts were evaluated. Diagnosis was established using pelvic ultrasonography (USG) and serum CA-125 levels. Women with ovarian cysts identified on USG were further assessed with CA-125 to exclude pathological conditions. Patients diagnosed with functional ovarian cysts were administered oral contraceptive pills (OCPs) for a period of three months, after which follow-up pelvic USG was performed to assess regression.
Results: Out of about 32 women studied for 3 months: CA125 levels were normal in functional cysts. Ovarian cyst in all 32 cases were of functional type. CA125 levels were raised in Endometriotic cysts. The abnormal cases were ruled out. Regression of functional ovarian cysts was seen with OCP administration. There's also a small hand-drawn pie chart at the bottom of the page, likely showing data distribution visually.
Conclusion: Combined oral contraceptives significantly promote regression of functional ovarian cysts by suppressing ovulation. CA-125 evaluation is essential to differentiate benign from malignant or complex cysts. Conservative management with OCPs remains an effective first-line option in reproductive-age women.

Keywords: Ovarian cyst, Functional cyst, Follicular cyst, Pelvic ultrasonography, CA-125, Reproductive age women, Conservative management, Gynecology practice

Introduction

Among the most common gynecological disorders seen in women of all ages, from childhood to postmenopause, ovarian cysts rank high. They can be physiological, functional, or pathological, and they depict sacs filled with fluid either inside or outside the ovary. Cysts in women of childbearing age often develop normally during the ovulatory cycle and serve a useful purpose [1, 2].

Follicle cysts and corpus luteal cysts are the two main types of functional ovarian cysts. If the follicle doesn't burst or the sac doesn't disintegrate after ovulation, a follicular cyst will form. Common characteristics of these cysts include thin walls, lack of eyes, and a diameter of 3-5 cm. Corpus luteal cysts, on the other hand, are often bigger, have thicker walls, and can often be associated with bleeding. While the majority of functional cysts do not cause any symptoms and disappear on their own, a small percentage of women may have dysmenorrhea, bloating, abdominal pain, or irregular periods. Women who visited the gynecology outpatient department (OPD) at Dr. V.R.K. Hospital had a 0.6% incidence of ovarian cysts [3-5].

Although most cysts are harmless, it is important to distinguish them from endometriotic, hemorrhagic, or malignant cysts. To this day, ultrasonography and serum CA-125 estimate are the diagnostic evaluation's lynchpins, helping to differentiate between functional and abnormal cysts. Medications or close observation are typically the first lines of defense against functioning ovarian cysts [6-8]. Because they reduce gonadotropin secretion, which in turn suppresses ovulation, combined oral contraceptive pills (OCPs) are quite popular because they help existing cysts to recede and prevent new cysts from forming. Despite mixed results from earlier research, the use of OCPs to resolve cysts remains a topic of active clinical interest [9-11].

This study aimed to examine the correlation between clinical presentation, sonographic findings, and CA-125 levels in order to assess the regression of functional ovarian cysts after OCP treatment in reproductive-aged women.

Materials and Methods

A prospective, randomized study was conducted in the Department of Gynecology, Dr. V.R.K. Hospital, from January 2023 to December 2023. The study population included women presenting to the gynecology outpatient department (OPD) with symptoms suggestive of ovarian cysts or those diagnosed incidentally on ultrasonography (USG). A total of 6,527 women attended the gynecology OPD during the study period. Out of these, 110 patients were diagnosed with ovarian cysts based on pelvic USG.

Inclusion Criteria

- Women of reproductive age (adolescent to premenopausal).
- Functional ovarian cysts measuring <7 cm in diameter.
- Cysts with thin walls, unilocular structure, and clear fluid content.
- Serum CA-125 levels <300 IU/ml.

Exclusion Criteria

- Ovarian torsion.
- Complex or hemorrhagic cysts.
- Large cysts (>7 cm).
- Postmenopausal ovarian cysts.
- Suspected malignant ovarian masses.

Diagnostic Evaluation

All patients underwent pelvic USG to assess cyst size, wall thickness, septations, and internal echoes. Measured in all patients to differentiate functional cysts from endometriotic or neoplastic cysts. Patients with elevated CA-125 (>300 IU/ml) were excluded from the functional cyst group.

Intervention

Patients with functional ovarian cysts (n = 96) were divided into two groups:

1. OCP group (n = 48): Received combined oral contraceptive pills for three consecutive menstrual cycles.
2. Control group (n = 48): Kept under conservative observation without medical therapy.

Follow-up USG was performed after three months to evaluate cyst regression.

Outcome Measures

- Regression or persistence of ovarian cysts on follow-up USG.
- Correlation of CA-125 levels with different types of ovarian cysts.
- Age-wise distribution of ovarian cysts.

Results

During the study period (January-December 2023), 110 patients were assessed for ovarian cysts. Outpatient gynecology patients had a 0.6% overall incidence of ovarian cysts. Although fewer occurrences were found in adolescents and postmenopausal women, the reproductive age group (21-40 years) accounted for the bulk of ovarian cyst diagnoses.

Age Distribution

The age group of 31-40 years old women had the highest frequency of ovarian cysts, followed by the 21-30 year old women. In women under the age of 20 and above the age of 50, only a small number of cases were identified.

Table 1: Age distribution of patients with ovarian cysts (January-February 2023)

Age group (years)	No. of patients
10-20	3
21-30	25
31-40	45
41-50	15
51-60	3
>60	3

Ovarian cysts are more prevalent in women of childbearing age, as the age group between 31 and 40 years old had the highest number of cases (45 patients).

Distribution of Ovarian Cysts by Age

Women between the ages of 21 and 30 had the greatest frequency of ovarian cysts (54 cases), followed by those between the ages of 31 and 40 (51 cases). Women who had gone through menopause had the lowest incidence.

Table 2: Age-wise distribution of ovarian cysts (January-February 2023)

Age group (years)	No. of ovarian cyst cases
10-20	9
21-30	54
31-40	51
41-50	17
51-60	1
>60	0

Ovarian cysts are most common in women between the ages of 21 and 40, which is close to the reproductive age, according to the study's authors.

Monthly Distribution of Cases

The majority of cases concentrated in the 21-40 year old age category, as also shown in the monthly analysis.

Table 3: Age distribution of patients with ovarian cysts (April 2023)

Age group (years)	No. of patients
10-20	3
21-30	14
31-40	32
41-50	9
51-60	3
>60	3

The age range of 31-40 years old continued to have the highest number of reported cases, demonstrating that this is the demographic most impacted by the disease.

Table 5: Age distribution of patients with ovarian cysts (June 2023)

Age group (years)	No. of patients
10-20	5
21-30	33
31-40	31
41-50	15
51-60	6
>60	-

Additionally, the pattern that was present in June showed that the 21-40-year age group had the greatest number of cases, while women who were above the age of 50 had very few occurrences.

Correlation with CA-125 Levels

CA-125 estimation was performed for all patients to differentiate functional from pathological cysts. The findings were as follows:

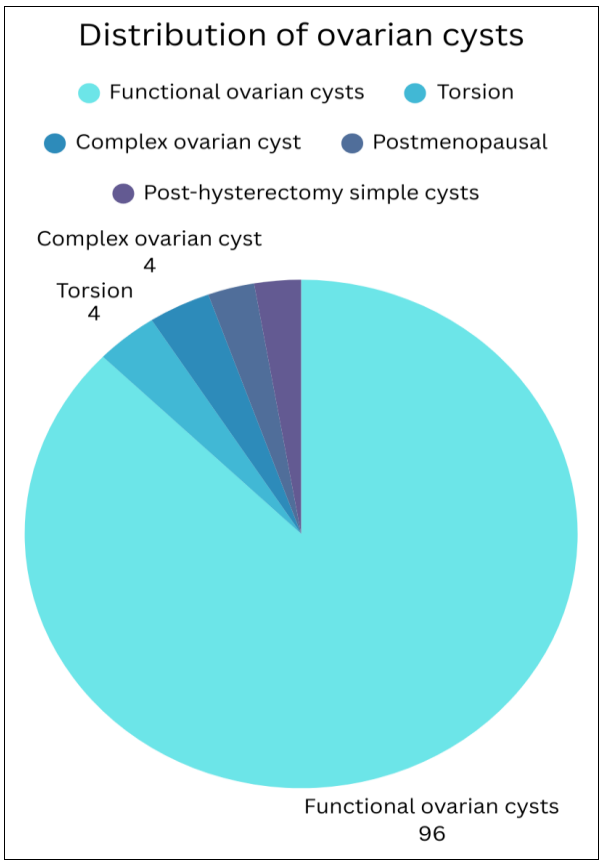

Fig 1: Distribution of ovarian cysts among study participants

- **Functional ovarian cysts:** Normal or slightly reduced CA-125 levels.
- **Adolescent age group:** Predominantly normal CA-125.
- **Perimenopausal age group:** Normal to mildly raised CA-125.
- **Endometriotic cysts:** Significantly raised CA-125.
- **Hemorrhagic cysts:** Mild elevation of CA-125.
- **Malignant cysts:** Markedly elevated CA-125 (>300 IU/ml).

Functional cysts were consistently associated with normal CA-125 levels, while raised CA-125 was indicative of endometriotic, hemorrhagic, or malignant cysts.

Discussion

Gynecological conditions including ovarian cysts are common in reproductive-age women. The gynecology OPD had 0.6% ovarian cysts, which is similar to other hospital-based research. Most of the 110 cases (87%) were functioning ovarian cysts, while complicated, torsion, and postmenopausal cysts were rare. One case of ovarian cystadenocarcinoma was also found, reinforcing the significance of rigorous evaluation and discrimination between benign and malignant ovarian tumors [12-14].

Functional ovarian cysts result from follicular rupture failure or corpus luteum persistence following ovulation. Though thin-walled, unilocular, and self-limiting, these cysts can cause pain, bloating, and menstrual abnormalities. Our study found that functional cysts were more common in women aged 21-40, when ovulatory activity is highest. The lower number of instances in teens and postmenopausal women supports the hormonal theory of functional cysts [15-17].

In this trial, 48 women with functioning ovarian cysts got combination OCPs for three menstrual cycles and 48 were conservatively handled. OCP patients had higher cyst regression. This supports the well-established mechanism of OCPs, which restrict ovulation by blocking GnRH secretion and lowering FSH and LH. The absence of the LH surge precludes ovulation and subsequent cyst production, therefore aiding regression of existing functional cysts. In our study, the 21-30-year age group had the most cysts, which correlates with peak reproductive activity. Unmarried women (30%) also had ovarian cysts, demonstrating that marital status does not protect against them. Women with parity 3 had the highest incidence (35%). Parity did not directly affect functional ovarian cysts [18-20].

The serum CA-125 test helped identify functional cysts from unhealthy ones. Our investigation found normal CA-125 levels in functioning ovarian cysts but increased levels in 8 individuals. Cystadenocarcinoma (3 instances) had markedly elevated CA-125 values, while endometriotic and hemorrhagic cysts had modest elevations. This suggests that CA-125 should be included in ovarian cyst diagnostics to rule out malignancy and other complex disorders [21-23].

Most reproductive-age ovarian cysts are functional and disappear naturally or with OCP, according to previous studies. These data support OCPs as an effective and conservative treatment method, as do our results. We found that complicated cysts, endometriotic cysts, and malignancies can appear as

functional cysts on imaging, highlighting the necessity for USG and CA-125 screening [24-26].

Conclusion

This study shows that ovarian cysts, both functional and physiological, can be regressed after three menstrual cycles of taking combined oral contraceptive pills. The effectiveness of OCPs as a non-invasive, conservative treatment choice was demonstrated by the large number of patients who had full or partial remission. Suppressing the hypothalamic-pituitary-ovarian (HPO) axis, which stops ovulation and lowers the chance of cyst development and persistence, is the mechanism by which it helps. In addition, the study highlights the significance of serum CA-125 estimation in distinguishing benign functional cysts from pathological or cancerous versions, which should be done in all women who report with ovarian cysts. Better patient outcomes and fewer needless surgical procedures are possible results of early detection and proper care. As long as the possibility of malignancy is ruled out through proper diagnostic examination, functional ovarian cysts, which are prevalent in reproductive-age women, can be conservatively treated with OCPs.

Conflicts of Interest

None.

Funding

None.

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