

Original Article

Conservative Treatment of Symptomatic Ovarian Cyst (5–7 cm) Among Young Girls Presented at Gynaecology OPD of a Tertiary Care Hospital

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Abstract

Objective: To determine the effectiveness of conservative treatment for symptomatic ovarian cysts (5–7 cm) among young women presenting to the Gynaecology Outpatient Department (OPD) of a tertiary care hospital.

Methodology: This prospective observational cohort study was conducted at the Department of Obstetrics and Gynaecology, Peoples University of Medical and Health Sciences (PUMHS), Nawabshah, from April 2024 to January 2025. Women aged 18–31 years with symptomatic functional ovarian cysts measuring 5–7 cm were enrolled and followed for 6 months with clinical and ultrasonographic assessments at predefined time points. Patients who failed to achieve cyst resolution with conservative treatment were converted to laparoscopic management according to clinical indications. Overall outcomes were assessed in terms of complete cyst resolution or reduction in cyst size, improvement in symptoms, normalization of menstrual patterns, and conversion to laparoscopic surgery.

Results: The overall mean age of the participants was 25.86 ± 2.35 years. Among the clinical symptoms, only lower abdominal pain showed improvement, decreasing from 90.6% at baseline to 69.8% at 6 months. Other symptoms, including dysmenorrhea, dyspareunia, and menstrual cycle or flow abnormalities, remained largely unchanged throughout the follow-up period. Complete cyst resolution was observed only at the 6-month follow-up, with 26.4% of patients achieving complete resolution, while cysts persisted in the remaining participants. Overall, the resolution rate was low, and the majority of patients (69.8%) ultimately required laparoscopic intervention.

Conclusion: Conservative hormonal management of symptomatic ovarian cysts over a 6-month period demonstrated limited therapeutic effectiveness. Complete cyst resolution was achieved in only about one-quarter of patients, while most clinical symptoms showed little or no improvement. Consequently, the majority of patients eventually required laparoscopic management.

Key words: PCO, Young girls, Menstrual disorder, Ovarian cyst, Hormonal therapy, laparoscopy.

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Introduction

Ovarian cysts, encompassing a wide continuum of ovarian lesions, are among the most common gynecological conditions affecting female population during adolescence.^{1,2} These lesions may vary from simple functional cysts to benign and malignant neoplasms. However, majority of these cysts remain benign in this population. These lesions usually arise under the influence of puberty associated hormonal fluctuations and normal ovarian activity.¹ Functional ovarian cysts account for around 60% of the ovarian lesions within female pediatric population, with an annual incidence rate of 2.6 ovarian cyst cases per

100000 girls. Although true ovarian neoplasm cases are rare, malignancy is observed in adnexal masses of around 3–8%, accounting for nearly 1 to 2% of cancer cases in pediatric population.^{1,3} Ovarian cysts develop either by the stimulation of hypothalamic–pituitary–gonadal (HPG) axis or by maternal gonadotropins and commonly encountered in pediatric population and in around 68% of girls aged below 12 years.^{1,4} These cysts are usually asymptomatic and undergo spontaneous resolution without any intervention, while larger cysts may become symptomatic and may lead to discomfort and surgical emergency.⁵

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Pelvic ultrasonography is widely used due to its accessibility, safety, and cost-effectiveness, and is considered the first-line imaging modality for detecting ovarian cysts in young girls, with functional cysts diagnosed in 97.8% of cases.⁶ Magnetic resonance imaging (MRI) may provide additional diagnostic information when ultrasonographic findings remain inconclusive. Computed tomography (CT) can also help differentiate benign ovarian masses from malignant lesions.⁷ Surgical intervention for ovarian cysts was commonly performed in the past; however, contemporary evidence suggests that most ovarian cysts in adolescents are benign and can be managed conservatively with careful clinical and ultrasonographic follow-up.^{8,9} Conservative management is generally the preferred initial approach for symptomatic ovarian cysts in young females, as most functional or small cysts resolve spontaneously or respond to analgesia and hormonal suppression without the need for surgery. However, surgical intervention becomes necessary when symptoms persist, cyst size increases, or fertility concerns arise. Laparoscopic cystectomy remains the standard surgical approach, with the decision for intervention guided primarily by cyst characteristics, including size.^{10,11}

Despite increasing recognition of conservative management, local evidence regarding its effectiveness remains limited, particularly for symptomatic ovarian cysts measuring 5–7 cm in young girls. Evaluating outcomes in this specific population is essential to reduce unnecessary surgical interventions and support fertility-preserving strategies. Therefore, this study was conducted to assess the effectiveness of conservative treatment for symptomatic ovarian cysts (5–7 cm) among young girls presenting to the Gynaecology Outpatient Department of a tertiary care hospital.

Methodology

A prospective observational cohort study was conducted in the Gynaecology and Obstetrics (Gynae OBS) department of the People's University of Medical and Health Sciences after taking ethical approval (ref no. PUMHSW/SBA/PVC/ERC/21/2024), to evaluate the outcomes of conservative hormonal management in young women diagnosed with symptomatic ovarian cysts measuring around 5 to 7 cm. The study was conducted during 8 months from April 2024 to January 2025. All the young women aged 18 to 31 years with confirmed diagnosis of a symptomatic functional ovarian cyst measuring between 5 and 7 cm on pelvic ultrasound,

the presence of at least one clinical symptom (lower abdominal pain, dysmenorrhea, or dyspareunia), and either a regular or irregular menstrual cycle and being underwent conservative treatment as per indications were included. However, the women who had complex ovarian cysts, suspected malignancy, endometrioma, the history of prior ovarian surgery, pregnancy, or any contraindication to hormonal therapy or who lost the follow-up were excluded. Informed consent was obtained from each case after explaining the purpose of study. Subsequently the patients were assigned to a conservative hormonal treatment regimen based on clinical judgment, receiving either a combined oral contraceptive pill (OCP) or oral progesterone (dydrogesterone or medroxyprogesterone acetate). The both regimens of treatment were continued for the six-month, and no surgical intervention. After that the women who did not achieve cyst resolution on conservative hormonal treatment were subsequently converted to laparoscopic management as per clinical indications and institutional protocol, and the rate of conversion to laparoscopy was recorded as part of the outcomes of study. All the patients were reviewed at three follow-up time-points including at one month after treatment, at 3 months, and at 6 months after initiation of treatment. On each visit, the cyst size was reevaluated on pelvic ultrasound (longitudinal and lateral diameters), and the cyst ultrasound finding was categorized as either cyst present or resolved. Additionally, the presence or absence of each clinical symptom, along with menstrual cycle irregularities and pattern of menstrual flow were also evaluated at every visit of follow-up. The outcomes were assessed in terms of the complete resolution of cyst on ultrasound along with reduction in cyst dimensions over time, clinical symptoms improvement, and normalization of menstrual cycle regularities, pattern of flow and conversion rate to laparotomy at 6 months.

All the relevant data of study were entered and managed using Microsoft Excel and statistical analysis was performed using SPSS version 26. The continuous variables were expressed as mean $\pm$ standard deviation, while the categorical variables were expressed as frequency and percentage. The repeated-measures analysis of variance (ANOVA) was used to assess the significance of cyst size reduction at each follow-up time point compared to baseline, while the chi-square test was used to evaluate changes in binary symptom variables across the all-time points of

follow-ups till 6 months, taking a p-value of ≤ 0.05 as statistically significant for each statistical test.

Results

The 53 patients with symptomatic ovarian cyst were enrolled and observed for conservative treatment on different follow up to with an overall mean age of 25.86 ± 2.35 years. Out of all patients, lower abdominal pain was declined over the follow-up period, falling from 90.6% at baseline to 69.8% at 6 months, indicating meaningful pain improvement with the conservative treatment, while contrast, dysmenorrhea and dyspareunia remained largely unchanged across all time points till 6 months of treatment and the fluctuation was between around 43–59% without any statistical significance ($p > 0.05$). Likewise, the menstrual cycle length also showed an insignificant trend toward more women having shorter cycles (<28 days) by 6 months (52.8% to 62.3%) $p=0.443$, and menstrual flow pattern also remained stable over time ($p=0.528$), while the severe flow disappeared entirely by 6 months of treatment (7.5% to 0.0%), indicating that the clinical

symptoms pattern remained almost unchanged over the 6-month follow-up. (Table I) According to baseline, persistent ovarian cyst on ultrasound in all cases, and this remained unchanged through the 1-month and 3-month follow-ups, while on 6 months, only 14 of the 53 patients showed cyst resolution, indicating one in four patients achieving cyst resolution by prolonged treatment period of treatment. Table II

Overall longitudinal cyst size remained almost unchanged from baseline (5.52 cm) to the 6th month (5.74 cm), ($F=0.556$, $p=0.645$), while lateral cyst size showed some decrease over the same period, from 6.09 cm at baseline to 5.02 cm at 6 months ($F=7.212$, $p=0.0001$), as presented in table III. Out of all, 37 (69.8%) patients required conversion to laparotomy after the 6-month conservative treatment period, while only 16 (30.2%) achieved successful management with conservative hormonal therapy alone, suggesting that the majority of patients ultimately required surgical intervention, consistent with the earlier finding that only about a quarter of cysts had fully resolved by 6 months as presented in table IV.

Table I: Symptoms and menstrual irregularities across the follow-ups. (n=53)

Variables		Treatment follow-ups				p-value
		Baseline	1 st month	3 rd month	6 th month	
Symptoms of ovarian cyst						
Lower abdominal pain	Yes	48	48	43	37	0.012
		90.6%	90.6%	81.1%	69.8%	
	No	5	5	10	16	
		9.4%	9.4%	18.9%	30.2%	
Dysmenorrhea	Yes	28	24	28	26	0.842
		52.8%	45.3%	52.8%	49.1%	
	No	25	29	25	27	
		47.2%	54.7%	47.2%	50.9%	
Dyspareunia	Yes	27	23	31	28	0.480
		50.9%	43.4%	58.5%	52.8%	
	No	26	30	22	25	
		49.1%	56.6%	41.5%	47.2%	
Menstruation irregularities						
Cycle	<28 days	28	31	36	33	0.443
		52.8%	58.5%	67.9%	62.3%	
	<35 days	25	22	17	20	
		47.2%	41.5%	32.1%	37.7%	
Flow	Mild	17	19	15	13	0.528
		32.1%	35.8%	28.3%	24.5%	
	Moderate	25	21	26	28	
		47.2%	39.6%	49.1%	52.8%	
	Heavy	7	9	10	12	
		13.2%	17.0%	18.9%	22.6%	
	Severe	4	4	2	0	
		7.5%	7.5%	3.8%	0.0%	

Table II: Frequency of cyst presence according to US findings across the follow-ups. (n=53)

Cyst on US findings		Treatment follow-ups				p-value
		Baseline	1 st month	3 rd month	6 th month	
Yes		53	53	53	39	0.001
		100.0%	100.0%	100.0%	73.6%	
No		0	0	0	14	
		0.0%	0.0%	0.0%	26.4%	

Table III: Mean cyst size in both lateral and longitudinal positions according to different times of follow-ups. (n=53)

Cyst size (CM)		Mean	SD	F-value	p-value
Cyst longitudinal size (mean)	Baseline	5.52	.69293	0.556	0.645
	At 1 st month	5.51	.73678		
	At 3 rd month	5.56	1.10487		
	At 6 th month	5.74	1.41958		
Cyst literal size (mean)	Baseline	6.09	.69956	7.212	0.0001
	At 1 st month	5.43	.88366		
	At 3 rd month	5.49	1.04384		
	At 6 th month	5.02	1.79857		

Table IV: Frequency of patients converted to laparotomy. (n=53)

Treatment after 6 months	N	%
Convert to laparotomy	37	69.8
Conservative	16	30.2
Total	53	100.0

Discussion

Ovarian cysts are common findings among young women, and clinicians often face the challenge of deciding between surgical intervention and conservative monitoring. The present study was designed to evaluate whether conservative treatment is an effective approach for managing symptomatic ovarian cysts in young women while avoiding unnecessary surgery and preserving future fertility. This study included 53 young women with symptomatic ovarian cysts measuring 5–7 cm, with an overall mean age of 25.86 ± 2.35 years. A comparable age range was reported by Syed et al.¹², who reported a mean age of 25.6 years among participants. Similarly, Seckin et al.¹³ reported a mean age of 21 years in their study population.

In presents study, lower abdominal pain was declined over the follow-up period, falling from 90.6% at baseline to 69.8% at 6 months, indicating meaningful pain improvement with the conservative treatment ($p=0.012$). On the other hand, remaining all clinical symptoms including dysmenorrhea, dyspareunia and menstrual cycle lengths remained mostly unchanged throughout 6 months of treatment by limited fluctuation, without any statistical significance ($p > 0.05$). In spite of an extensive literature search, no particular relevant studies were found that directly reported pre- and post-treatment symptom comparisons for symptomatic ovarian cysts in young girls following conservative treatment. Mostly published studies in this population have focused mainly on cyst resolution, regression in size, or the need for surgical intervention as their outcome measures, rather than systematically documenting symptom severity before and after conservative management. However some partially related findings regarding symptoms were noted in the

study of Lotfy AM et al¹⁴ where most women reported having irregular menstrual cycles (73.0%), with menstrual cycles shorter than the conventional 28-day cycle in 82.5% of participants, mean duration of 3.9 ± 1.40 days for menstruation, 23.44 ± 5.107 days of mean menstrual cycle length, and 3.9 ± 1.41 days of mean length for menstrual bleeding, including that alterations in cycle length is common among women with ovarian cysts, while in that study no findings compared for pre and post conservative treatment.

Importantly in this study, ovarian cysts were noted on ultrasound in all cases at baseline and remained unchanged throughout 3-month follow-ups, while on 6 months, only 26.4% of patients showed cyst resolution, indicating one in four patients achieving cyst resolution by prolonged treatment period of treatment ($p < 0.05$) and a large proportion (69.8%) of patients required conversion to laparotomy after 6-month of conservative treatment. Partially aligns with these findings, in the study carried out by Brito ME et al¹⁵ spontaneous resolution of benign masses occurred in 16.4% of cases, while only a small proportion (18.4%) required surgery, suggesting that clinical course remains largely stable over time with good safety profile of conservative management. Our findings were also partially supported by a retrospective study of 100 children and adolescents with the ovarian cysts, where reported a significantly higher surgical intervention rate of around 38%, significantly associated with persistent or enlarging cysts despite conservative management,¹⁶ but it was substantially lower compare to this study. On the other hand, Hoo et al reported that the expectant management of ovarian dermoid cysts was least successful specifically in cases involving larger, bilateral cysts, deserving earlier consideration of surgical intervention in this subgroup.¹⁷ Above studies showed the higher efficacy of conservative treatment in terms of conversion of treatment compared to this study, but these studies are not completely relevant to this study as per study objective, methods and treatment.

Moreover, Kanizsai B et al¹⁸ conducted the study to assess the characteristics and symptoms of the ovarian cysts, their connection based on treatment methods, and the therapeutic effectiveness, in women with ovarian cysts sizes ranging from 3–5 cm in 90 cases, more than 5 cm in 41 cases, and less than 3 cm in 13 cases, with irregular bleeding being most common symptom and reason for scanning. The hormonal treatment was given in 105 cases versus follow-up sonography alone in 35 cases, cysts resolved spontaneously in 4.5 weeks on average and surgery was ultimately required in only 9 cases, which is very low conversion rate compared to this study. An earlier study by Warner et al.¹⁹ evaluated the conservative management of large ovarian cysts in children using serial pelvic ultrasonography. The authors reported that surgery was performed in 23 patients, while among those managed conservatively with follow-up, 46 of 51 cysts (90%) either decreased in size or completely resolved.

Overall, existing literature largely supports conservative management, which contrasts with the findings of the present study. However, these studies are not directly comparable, as most are older studies and involve different populations, predominantly children, or different types of ovarian cysts. We could not identify recent studies directly comparable to the current study population; therefore, the findings of this study provide important evidence regarding the management of symptomatic, larger ovarian cysts in young women. Further large-scale studies, both nationally and internationally, are recommended to better determine whether conservative or surgical management provides superior outcomes for young women with ovarian cysts.

Conclusion

The conservative hormonal management for symptomatic functional ovarian cysts over the 6-month period showed very limited overall effectiveness, with complete cyst resolution achieved in only about a quarter of patients and almost all clinical symptoms being unchanged largely. Revealing limited therapeutic benefit, with around seven in ten patients ultimately required conversion to laparoscopic surgery. Overall findings suggest that while conservative hormonal therapy may offer modest symptomatic relief for select patients, while it is not a reliably effective definitive treatment strategy. The clinicians should maintain timely surgical intervention rather than prolonged conservative management, particularly when cyst

persistence continues beyond the early follow-up periods.

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