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EVALUATION OF CASES OF TREATING OVARIAN CYST RUPTURED BY LAPAROSCOPIC AT THANH NHAN HOSPITAL FROM 2018 TO 2023

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ABSTRACT

Objective: Evaluate treating ovarian cyst ruptured by laparoscopic.

Subject and methods: 26 patients who underwent laparoscopic surgery to treat ruptured ovarian cyst at Thanh Nhan hospital from January 2019 to June 2023.

Results: The disease was common in the age group <35 years with 77%. Common clinical symptoms were abdominal pain, some severe cases showed hemorrhagic shock (34,6%), and menstrual disorders were uncommon. The most common injury is ruptured bleeding of the ovarian cyst (65,4%). The most common size was 2-3 cm (73,1%). In this study, 65% of cases had > 500 ml of blood in the abdomen, and Three of them had > 1000 ml. 100% of patients underwent ovary-conserving surgery. 92,3% had early surgery which was performed under 24 hours. 100% no complications in surgery.

Conclusion: Ovarian cyst rupture can cause hemorrhagic shock and should be diagnosed and treated early. The main treatment method is laparoscopic surgery to preserve the ovaries.

Keywords: Rupture of functional cyst, surgery.

1. INTRODUCTION

Ovaries are one of the female sex organs which function as both endocrine and exocrine. Functional ovarian cyst is a tumor resulting from hormonal imbalance in the ovaries, which happens regularly and most cases do not require intervention. However, if the rupture of functional cyst leads to internal abdominal bleeding and that cannot stop spontaneously, it will cause intra-abdominal hemorrhage syndrome which needs timely diagnose and treatment. Failure to intervene may reduce female fertility and put the patients' life in danger [1],[2]. Rupture of ovarian cyst may cause shock in varying stages: The compensated stage, the patient may experience orthostatic hypotension, rapid pulse; the decompensated stage includes symptoms as rapid pulses, blood pressure drop, cold limbs, oliguria or decrease consciousness, with sign of metabolic acidosis. The main treatment is surgical intervention, either by open or laparoscopic surgery [3],[4],[5]. Thanks to the advancement of laparoscopic surgery, this method offers effective diagnostic and therapeutic benefits, especially for younger, unmarried patients. Thus, early detection and treatment are critical. Despite the frequency of ovarian cyst rupture, there is limited discussion and research regarding diagnosis and treatment. Therefore, we have undertaken a study titled, "Evaluation of cases of treating ovarian cyst ruptured by laparoscopic at Thanh Nhan hospital from 2018 to 2023" with the objective: *To observe and assess the treatment outcomes of laparoscopic surgery for ruptured functional ovarian cysts.*

2. RESEARCH OBJECTS AND METHOD

2.1. Research objectives: 26 patients have undergone laparoscopic surgery for functional ovarian cyst laparoscopic surgery at Thanh Nhan hospital from January 2018 to June 2023.

2.2. Research method: Cross-sectional study, retrospective data collection.

2.3. Sample size and choosing the samples: Purposive choosing samples over time include 26 qualified medical records.

2.4. Data processing: The data were processed using SPSS version 16.0. Descriptive statistics were applied, utilizing counts and percentages.

2.5. Research ethics: Our study was permitted by hospital leadership and the patients' information was secured.

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3. RESULTS

3.1. Characteristic of research subjectives

Table 1. Characteristic of research subjectives

Number of children Age	Childfree		One baby		≥ 2 babies		Total
	Number of patients	Percentage %	Number of patients	Percentage %	Number of patients	Percentage %	
≤20 years old	6	23.1	1	3.8	0	0	26.9
21-35	6	23.1	5	19.3	2	7.7	50.1
36-45	0	0	2	7.7	3	11.5	19.2
>45	0	0	0	0	1	3.8	3.8
Total	12	46.2	8	30.8	6	23	100

Comment: In the study, the highest proportion of patients were under 35 years old, with those aged 21-35 years making up 50.1%. The youngest patient in our study was 16 years old, while the oldest was 46 years old.

3.2. Patients' clinical symptoms of ruptured of functional ovarian cyst

Table 2. Clinical symptoms

Symptoms	Number (N)	Percentage (%)
Lower abdominal pain	26	100
Shock	11	42.3
Menstrual disorders	4	15.4

Comment: The study indicated that 100% of the patients had lower abdominal pain, 9 patients had hemorrhagic shock making up 34.6% and there were 4 patients experienced menstrual disorders.

3.3. Timing of symptom appearance in relation to the menstrual cycle

Table 3. Timing of symptom appearance

Timing	Number (N)	Percentage (%)
Before the middle of the menstrual cycle	9	34.6
In the middle of the menstrual cycle	12	46.2
After the middle of the menstrual cycle	5	19.2
Total	26	100

Comment: The study showed that 9 out of 26 patients (34.6%) experienced symptoms before the middle of the menstrual cycle, while 12 out of 26 patients (46.2%) experienced symptoms around the middle of the cycle.

3.6. Amount of blood loss during surgery

3.4. Form of cyst injuries during surgery

Table 4. Form of cyst injuries during surgery

Injuries	Number (N)	Percentage (%)
Lacerations	17	65.4
Bleeding	9	34.6
Spontaneous hemostasis	0	0
Total	26	100%

Commnet: 65.4% of patients' ruptured cysts had lacerations were actively bleeding with bright red blood, 34.6% of the cysts were bleeding, and none of the cases had spontaneous hemostasis.

3.5. Size of the cyst during surgery

Table 5. Size of the cyst during surgery

Size of the cyst	Number (N)	Percentage (%)
≤3cm	19	73.1
>3-5 cm	6	23.1
>5cm	1	3.8
Total	26	100

Commnet: From the study, 73.1% of the cysts were between 2-3 cm in size, 23.1% were larger than 3 cm, with the largest cyst measuring 6 cm. According to F. Cabane's research (1980), most functional ovarian cysts are typically less than 5 cm in size.

Table 6. Amount of blood loss during surgery

Amount of blood loss during surgery (ml)	Number (N)	Percentage (%)
< 200	2	7.7
200-500	7	26.9
>500- 1000	14	53.8
>1000	3	11.4
Total	26	100

Comment: 14 out of 26 patients had 500-1000ml (53.8%) of blood in abdominal cavity accounting, 7 out of 26 patients (26.9%) had 200-500ml of blood in abdominal cavity and 3 out of 26 patients (11.4%) had more than 1000 ml of blood in abdominal cavity

3.7. Treatment method

Table 7. Treatment method

Size of the cyst / Treatment method	<3cm		3-5cm		>5cm		Total
	Number of patients	Percentage (%)	Number of patients	Percentage (%)	Number of patients	Percentage (%)	
Electrosurgery	19	73.1	4	15.4	0	0	88.5
Cystectomy and Hemostasis	0	0	2	7.7	1	3.8	11.5
Oophorectomy/ Adnexectomy	0	0	0	0	0	0	0
Total							100

Comment: Out of 26 patients, 23 patients were treated with Electrosurgery, 3 patients were treated with Cystectomy and Hemostasis and no cases had to do Oophorectomy or Adnexectomy.

3.8. Time from admission to surgery

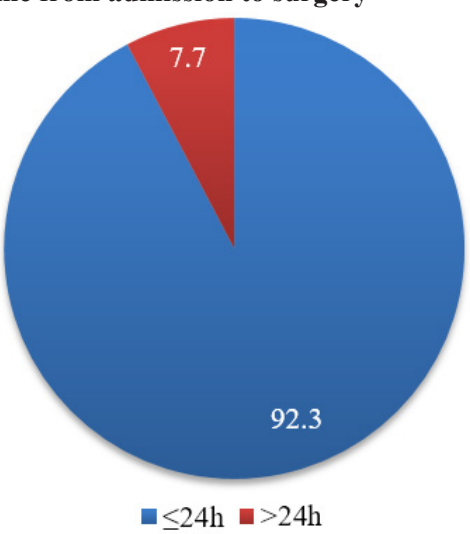

Figure 1. Time from admission to surgery

Comment: The results of the study indicated that 24 out of 26 of cases underwent surgery within 24 hours, while only 2 out of 26 cases (7.7%) had surgery after 24 hours.

3.9. Complication during surgery

Table 8. Complication during surgery

Complications	Number (N)	Percentage (%)
Yes	0	0
No	26	100
Total	26	100

Comment: The study showed that there were no cases of digestive injuries and urinary injuries during surgery and did not experience complications from anesthesia.

4. DISCUSSION

In the study, 77% of the patients were under 35 years old, indicating that this age group, with the highest ovarian reserve, has the highest incidence. After 35 years of age, ovarian function declines, leading to a reduced ovulation rate and consequently a lower incidence. The study also showed that the condition can occur in all patients; however, it is more common

in those who have not had children or have one child, with 20 out of 26 cases demonstrating the importance of early diagnosis and intervention in cases of ruptured ovarian cysts to preserve fertility in younger patients.

In the study, 9 out of 26 patients experienced abdominal pain before the middle of the menstrual cycle, 12 out of 26 patients had abdominal pain around the middle of the cycle, and 5 out of 26 patients experienced pain after the middle of the cycle. While the symptoms may vary due to patients having irregular or prolonged cycles, the findings suggest that ruptured ovarian cysts are most commonly observed around the middle of the menstrual cycle, with a smaller number of cases occurring in the second half of the cycle, particularly with larger cysts. [6],[7]

The clinical symptoms of ovarian cyst rupture included: 100% of the patients experienced lower abdominal pain with varying degrees of severity, which aligns with the study by Hoàng Công Đắc (1995), where pain is the primary symptom and the main reason for the patients' hospital admission. A small number of cases (4 out of 26) presented with menstrual disorders, which could lead to diagnostic confusion with ectopic pregnancy or ovarian torsion.[2]

42.3% of the patients experienced symptoms as shock due to blood loss indicating the emergency nature of the condition, which requires prompt diagnosis and intervention as it can be life-threatening. The shock may result from significant and sudden loss of circulating volume or may be due to severe pain. According to the WHO, blood loss exceeding 500ml is considered severe and can lead to hemorrhagic shock. In the study, 17 cases had more than 500ml of fluid in the abdominal cavity, with 3 cases having more than 1000ml of blood in the abdomen. This demonstrates that rupture of ovarian cyst can lead to severe complications, including hemorrhagic shock, which can be threatening to the patient's' life. As the results of most patients are unaware of the condition, the time spent monitoring at home is often prolonged, leading to late hospital admission.[2],[8]

Form of injuries: 73.1% of the cysts were between 2-3 cm in size, 23.1% were larger than 3 cm, with the largest cyst measuring 6 cm. According to F. Cabane's research (1980), most functional ovarian cysts are typically less than 5 cm in size.

In the 26 cases studied, only 2 out of 26 patients underwent surgery more than 24 hours after admission. These two cases involved patients who initially presented with no signs of shock, stable hemodynamics, and dull abdominal pain, with abdominal fluid, and were managed with medical observation. After 24 hours, the patients' abdominal pain has worsened, from the ultrasound showed that abdominal fluid increased, and blood tests showed decreased hemoglobin levels. The patients were then indicated for laparoscopic surgery.

In 100% of the cases, ovarian preservation was achieved. Among them, 23 out of 26 cases (88.5%) underwent electrocautery for hemostasis, while 3 out of 26 cases (11.5%) involved cystectomy followed by electrocautery for hemostasis. This indicates that most surgeons preferred laparoscopic surgery to control bleeding, which also provides a high level of ovarian preservation. Compared to Hoàng Công Đắc's study, in which 70.5% of ruptured cyst cases required oophorectomy and adnexectomy, the focus was primarily on hemostasis without consideration of ovarian reserve and female reproductive function. With advancements in clinical and surgical techniques, and an increased emphasis on ovarian preservation, the rate of oophorectomy and adnexectomy has decreased significantly.

Our study showed that there were no cases of digestive and urinary during the surgery and no complications caused by anesthesia. This shows that laparoscopic surgery is the safest and most beneficial method for patients, especially young patients.

5. CONCLUSION

Rupture of ovarian cyst usually does not require intervention; however, when there is internal abdominal bleeding, early diagnosis and surgical intervention are necessary. The amount of blood loss can lead to shock and even pose a life-threatening risk to the patient. The primary method of treatment is laparoscopic surgery to control bleeding and preserve the ovaries.

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