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# Assessment of Surgical Management of Ovarian Cysts

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**ABSTRACT**
To assess surgical management of ovarian cysts. 45 cases of newborns with neonatal ovarian cysts were divided into three groups. group I was open surgery (laparotomy) group II was traditional laparoscopic surgery and group III was LATEC group. Gestational age was 38.7 weeks, 38.4 weeks and 38.4 weeks, age at surgery was 16.2 days, 4.7 days and 9.1 days and weight at surgery was 3.5 Kgs, 3.2 Kgs and 3.1 Kgs in group I, II and III respectively. The difference was non- significant ($p>0.05$). Type of cysts was simple cyst was 5, 8 and 9 and complex cyst was seen in 10-7 and 6. Duration of surgery (min) was 51.4, 81.2 and 54.8. Time to feeds (hrs) was 19.3, 14.1 and 9.2 and postoperative length of stay (hrs) was 46.2, 54.6 and 31.7 in group I, II and III respectively. The difference was significant ($p<0.05$). Latec is a relatively simple procedure, which combines laparoscopy and traditional extracorporeal surgery and may be successfully performed by experienced pediatric surgeons and with a single incision. Ovarian cyst, Endometriosis, Surgery.

## INTRODUCTION

Ovarian cysts are fairly common in neonates, resulting from exaggerated follicular development stimulated by the maternal hormones. The incidence of ovarian cysts decreases in early childhood and increases again as puberty approaches[1]. In adolescents, simple cysts are very common, resulting from anovulation and persistence of the remaining follicle and therefore may be associated with irregular bleeding. Some of these cysts are asymptomatic or cause only mild symptoms and these can be detected incidentally by sonography[2].

Surgery has been recommended for simple cysts greater than 4 cm in diameter, which have a high rate of future ovarian torsion and necrosis and for complex cysts, which often have already undergone torsion[3]. Neonatal ovarian torsion and infarction can lead to adhesions to the bowel and complications, which include intestinal obstruction compression of the urinary tract, compression of the vena cava, cyst rupture and bilateral ovarian loss. Complex cysts may be distinguished on ultrasound by a fluid-debris ("fluid-fluid") level, a cystic appearance with a retracting clot, septations with or without internal echoes or by a solid appearance[4].

Initial approaches to the resection of neonatal ovarian cysts involved laparotomy. Recent modifications of the "open" technique have been reported. Laparoscopic removal of a neonatal ovarian cyst was first described in detail in 1995. Both laparotomy and laparoscopy have been shown, individually, to be safe and effective in the surgical management of neonatal ovarian cysts[5]. The present study was conducted to assess surgical management of ovarian cysts.

## MATERIALS AND METHODS

The present study comprised of 45 cases of newborns with neonatal ovarian cysts. All parents were informed regarding the study and their consent was obtained.

Data such as name, age, etc. was recorded. A thorough clinical examination was performed. Patients were divided into three groups. group I was open surgery (laparotomy) group II was traditional laparoscopic surgery and group III was Latec group. All procedures were performed under general endotracheal anesthesia. Laparotomies were all transverse incisions. Laparoscopic procedures involved the placement of at least two trocars. For LATEC, one 5-mm umbilical trocar was inserted. Following insufflation with $CO_2$ to a pressure of 10-mm Hg, a 3.5 mm 30 degree laparoscope was introduced. Under laparoscopic guidance, transabdominal needle aspiration of the cyst was performed. The trocar was removed, the incision extended to a length of 15 mm and the deflated cyst was exteriorized through the umbilicus for either cyst excision with ovarian preservation or salpingo-oophorectomy. Results were tabulated and subjected to statistical analysis. $p>0.05$ was considered significant.

## RESULTS

Gestational age was 38.7 weeks, 38.4 weeks and 38.4 weeks, age at surgery was 16.2 days, 4.7 days and 9.1 days and weight at surgery was 3.5 Kgs, 3.2 Kgs and 3.1 Kgs in group I-II and III respectively. The difference was non-significant ($p>0.05$) (Table 1).

Type of cysts was simple cyst was 5-8 and 9 and complex cyst was seen in 10, 7 and 6. Duration of surgery (min) was 51.4, 81.2 and 54.8. Time to feeds (hrs) was 19.3, 14.1 and 9.2 and postoperative length of stay (hrs) was 46.2, 54.6 and 31.7 in group I-II and III respectively. The difference was significant ($p<0.05$) (Table 2).

## DISCUSSION

An ovarian cyst is a common gynecological problem and is divided into 2 main categories physiological and pathological. Physiological cysts are follicular cysts and luteal cysts. Pathological cysts are considered as ovarian tumors, which might be benign, malignant and borderline[6]. Benign tumors are more common in young females, but malignant are more frequent in elderly females. Most ovarian cysts are asymptomatic and disappear spontaneously. When ovarian cysts are large, they may cause abdominal discomfort[7]. If pressing on the bladder it may also cause frequency of urination. The signs and symptoms of ovarian cysts may include pelvic pain, dysmenorrheal and dyspareunia[8]. Other symptoms are nausea, vomiting or breast tenderness, fullness and heaviness in the abdomen and frequency and difficulty emptying of the bladder[9]. Ovarian masses are categorized as functional cysts, benign neoplasms or malignant neoplasms. In a review of females under the age of 21 undergoing surgery for an adnexal mass, 57.9% of the cases were diagnosed with an ovarian cyst[9,10]. The prepubertal adolescent is at risk of developing functional cysts due to the failure of involution of follicles. Prepubertal cysts are commonly caused by gonadotropin stimulation of the ovary by the immature hypothalamic-pituitary axis[11,12]. The present study was conducted to assess surgical management of ovarian cysts.

Our results showed that gestational age was 38.7 weeks, 38.4 weeks and 38.4 weeks, age at surgery was 16.2 days, 4.7 days and 9.1 days and weight at surgery was 3.5 Kgs, 3.2 Kgs and 3.1 Kgs In group I-II and III respectively. Kanizsai *et al.*[13] evaluated

Table 1: Patient characteristics

| Parameters | Group I (15) | Group II (15) | Group III (15) | p-value |
|---|---|---|---|---|
| Gestational age (weeks) | 38.7 | 38.4 | 38.4 | 0.78 |
| Age at surgery (days) | 16.2 | 4.7 | 9.1 | 0.01 |
| Weight at surgery (Kgs) | 3.5 | 3.2 | 3.1 | 0.97 |

Table2: Assessment of parameters

| Parameters | Variables | Group I (15) | Group II (15) | Group III (15) | p-value |
|---|---|---|---|---|---|
| Type of cysts | Simple cyst | 5 | 8 | 9 | 0.82 |
| | Complex cyst | 10 | 7 | 6 | |
| Duration of surgery (min) | 51.4 | 81.2 | 54.8 | 0.05 | |
| Time to feeds (hrs) | 19.3 | 14.1 | 9.2 | 0.02 | |
| Postoperative length of stay (hrs) | 46.2 | 54.6 | 31.7 | 0.04 | |

the characteristics and symptoms of ovarian cysts, their connection with the methods of treatment and the effectiveness of the therapy. Out of 119 girls, 144 ovarian cysts were found by ultrasound examination performed either routinely or for a specific purpose. One group of patients received oestrogens to facilitate resolution of the cyst and as treatment of menstrual disorder. Others received clomiphene citrate exclusively as therapy for menstrual irregularity. The site, number, size and type of the cysts were examined. The indications for ultrasonography and the effectiveness of the treatment were analyzed. The ovarian cysts were mostly unilateral, unilocular and simple, with the size varying between 3 cm and 5 cm in diameter in 90 cases, more than 5 cm in 41 cases and less than 3 cm in 13 cases. A number of cysts were found incidentally on ultrasound. Girls were scanned most often because of irregular bleeding (80 cases). Hormonal treatment was given in 105 cases, whereas in 35 cases only follow-up sonography was performed. Cysts resolved spontaneously in 4.5 weeks on average, or in 3 weeks after hormonal treatment. Surgical therapy was necessary for nine patients. The indication for surgery was the detection of complex cysts indicative of dermoid type, size of the cysts, severe pelvic pain or failure of the cyst to resolve or decrease in size spontaneously or in response to treatment as determined by follow-up sonography. All of the cysts were benign on pathological evaluation.

Our results showed that type of cysts was simple cyst was 5-8 and 9 and complex cyst was seen in 10-7 and 6. Duration of surgery (min) was 51.4-81.2 and 54.8. Time to feeds (hrs) was 19.3-14.1 and 9.2 and postoperative length of stay (hrs) was 46.2-54.6 and 31.7 in group I-II and III respectively. Adulijabar *et al.*[14] included 244 cases of ovarian cysts. The age ranged from 3 months to 77 years of age. The parity from 0-6. The height ranges from 37-180 cm. The weight ranges from 3-161 kg and calculated body mass index ranged from 12-47. Out of 244 patients diagnosed, 165 were married (67.4%). Of those, only 16 patients were pregnant (6.6%). The most common presentation was abdominal pain in 142 patients (58.2%). Only 79.9% were ovarian cysts and 17.5% were either para-ovarian or retroperitoneal. The right ovaries were affected in 63.1% and only 18.9% were bilateral. The types of ovarian cysts included functional cysts 33.2%, benign cyst-adenoma 19.3% and dermoid cysts 12.3%. Hertzberg *et al.*[15] successfully managed 90% of children with large ovarian cysts without surgical intervention. Hemorrhagic functional cysts may be confused with a malignant process due to its solid or complex characteristics but should regress in 2-8 weeks.

## CONCLUSION

LATEC is a relatively simple procedure, which combines laparoscopy and traditional extracorporeal surgery and may be successfully performed by experienced pediatric surgeons and with a single incision.

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