Laparoscopic Management of an Unusual Paraovarian Cyst Complicated by Extensive Adhesions

ABSTRACT

A 15 year old girl who had previously undergone laparotomy for ileal torsion in infancy was investigated for chronic abdominal pain. Ultrasound and MRI scanning revealed a large tubular cyst on the right lateral pelvic wall, extending into the abdomen. This was managed laparoscopically by extensive adhesionolysis and cystectomy . Laparoscopic management of large paraovarian cysts is well established in adult practice but experience in children is less well documented. The unusual configuration of this cyst, consequent to extensive adhesions from previous surgery, complicated the diagnosis. Its management by laparoscopy demonstrates the therapeutic capability of this approach despite difficult conditions stemming from dense intra-abdominal adhesions.

Keywords: Paraovarian cyst; adhesions; paediatric; laparoscopic.

1. INTRODUCTION

Paraovarian cyst needs to be differentiated from ovarian cyst, as it is not thought to behave in the same way both clinically and biologically. Paraovarian cyst accounts for only 5–20% of all adnexal masses. Paraovarian cyst originates in the broad ligament between the fallopian tube and ovary [1]. The safety of laparoscopic management of benign paraovarian cysts has been demonstrated, but it is believed that the size of these cysts is a limiting factor for this approach [2]. We report a case study on laparoscopic management of an unusual paraovarian cyst complicated by extensive adhesions.

2. CASE PRESENTATION

A fifteen year old girl with Gilbert syndrome presented with chronic, low grade, lower abdominal pain. She was suspected to be suffering from partial adhesive bowel obstruction secondary to previous surgery. In the neonatal period the patient had an ileal torsion, and, consequently a significant part of her distal small bowel had been resected through a transverse infra-umbilical incision and a stoma fashioned. This was reversed at one month of age when an ileocolic anastamosis was performed.

Ultrasonography (Fig. 1) and magnetic resonance imaging (Figs. 2 & 3) demonstrated a simple, tubular, cystic mass in the right pelvic wall extending to the level of the umbilicus, measuring, 32 by 12cm's in maximal length and depth, respectively.

The exact origin of the cyst was disputed by the radiologists and tumour markers including beta human chorionic gonadotrophin and alpha fetoprotein levels were normal.

In view of these findings the patient underwent laparoscopic surgery. A three port technique was employed with a 10mm umbilical camera and two 5mm working ports in the left iliac fossa and in the left subcostal region. For safety, the initial 10mm port was placed using Hassan Technique. Triangulation of working to camera port was not possible as both needed to be placed well away from the previous larparotomy incision and the mass. Extensive adhesionolysis, using principally endoshears and hook, monopolar, diathermy, was necessary in order to adequately visualise the cyst which was found to be intimately attached to the right fallopian tube. This was aspirated before being comprehensively resected together with the end of the fallopian tube. The specimen was retrieved through the 10mm camera port under guidance

of a 5mm camera placed in one of the working ports.

The patient enjoyed an uncomplicated postoperative recovery. Histology confirmed a benign fimbrial cyst which had been completely excised.

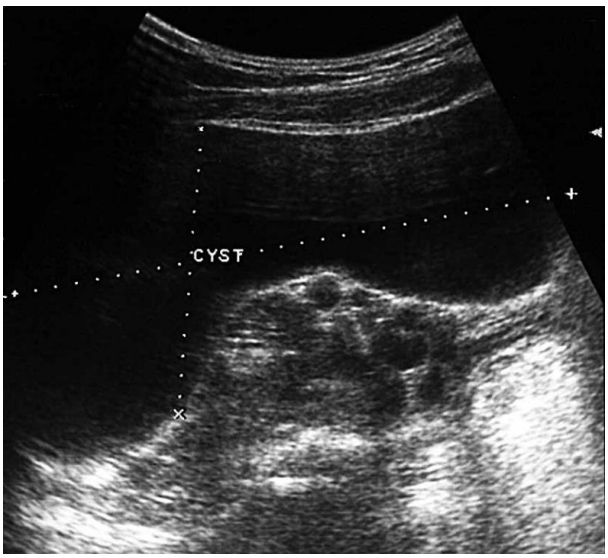

Fig. 1. Ultrasonography demonstrating the length and depth of the parovarian cyst

Fig. 2. MRI Scan in coronal view demonstrating the vertical extent of the parovarian cyst

Fig. 3. MRI Scan in sagital view showing depth and superior extent of cyst which reached to the level of umbilicus

3. DISCUSSION AND CONCLUSION

Paraovarian cysts are histologically divided into three types of which the largest proportion are mesothelial (68%). The majority of the remainder (30%) arise from the parameseonephric duct elements. Two percent arise from the mesonephric or Wolffian duct [3]. These cysts account for 10% of adnexal masses and are most common in the third and fourth decades of life [4]. Giant adnexial cysts, defined as greater than 15 cms, are indeed unusual, constituting approximately 13% of these cysts [5].

Although the majority of these cysts are incidentally found they can cause abdominal pain and menstrual problems or present acutely with torsion or haemorrhage [6]. Some are also recognised to go on to cause infertility and to undergo neoplastic transformation [7]. The vast majority of adnexal masses in pediatric and adolescent populations are benign, however, boderline malignant lesions have been documented in between 4 to 9% of cases. A workup to include tumour markers and histology is therefore mandatory [8-10].

The laparoscopic management of ovarian cysts is well established in adults, with even large cysts which extend above the umbilicus being amenable to minimally invasive resection [11,12]. Cystic ovarian lesions have even been laparoscopically resected in the neonatal population, [13] although a high conversion rate is associated with this approach [14]. The laparoscopic experience with giant parovarian cysts on the other hand is limited with a systematic review showing that the majority of surgeons still prefering an open approach [15].

Larparoscopic adhesionolysis has been employed in the treatment of adult small bowel obstruction occurring independently of other pathology [15,16]. Success rates of up to 92% have been reported in some series [16]. Yet other adult studies which due to the complexity of the cases, have reported a 20% conversion rate [18]. In the paediatric population there are few reports of laparoscopic adhesionolysis and conversion rates are higher [19].

The previous surgery in this patient created several difficulties in her management. Firstly, her symptoms were initially attributed to the presence of adhesions and it was only on imaging that another cause for her pain became apparent. Secondly, dense pelvic and abdominal adhesions caused the cyst to grow in the plane of least resistance hence assuming a tubular shape. This unusual configuration caused a diagnostic dilemma which was resolved by laparoscopy. The dense adhesions stemming from the previous interventions required careful and tedious division before the cyst could be adequately visualised and appropriately managed. Aspiration of the cyst was a useful step in creating the space which facilitated handling and dissection. Once separated from surrounding structures the origin of the cyst from

the right fallopian tube was clearly evident allowing for a comprehensive resection. Preservation of the follopian where possible is ideal.

This experience reaffirms the potent diagnostic and therapeutic capability of the laparoscope for abdominal pathology in children. In addition it demonstrates how neither a history of significant previous surgery nor the magnitude of a parovarian cyst should be a deterrent to utilising the laparoscopic approach.

CONSENT

As per international standard or university standard, parental(s) written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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