Case Report

Laparoendoscopic Single-Site Ovarian Cystectomy and Concomitant Appendectomy in an Adolescent

Sonia Pérez-Bertólez MD, PhD *, Mercedes González MD, Nestavo de los Reyes MD, Israel Fernández-Pineda MD

Department of Pediatric Surgery, Unidad de Gestión Clínica Intercentro Hospital Infantil Virgen del Rocío - Hospital Universitario Virgen Macarena, Seville, Spain

A B S T R A C T

Background: Laparoendoscopic single-site surgery (LESS) is emerging as an alternative technique to conventional laparoscopy for the treatment of common surgical diseases.
Case: We report a case of a 13-year-old female with self-limited abdominal pain. Imaging studies showed a right ovarian mass with features of a dermoid cyst and an appendicolith within the appendix without signs of acute appendicitis. She underwent concomitant LESS ovarian cystectomy and appendectomy without any complications.
Summary and Conclusion: LESS is feasible with standard laparoscopic instruments. It is a safe technique with excellent cosmetic results and minimal postoperative pain.
Key Words: Dermoid cyst, Ovarian cystectomy, Laparoendoscopic single-site surgery, Single-port surgery

Introduction

Laparoscopic surgery revolutionized the management of numerous surgical conditions and brought significant advantages over open surgery, beneficial for both the patient and the surgeon. Decreased postoperative pain, faster recovery, and excellent cosmesis are now well-known attributes of minimal access surgery.

Laparoendoscopic single-site surgery (LESS), also known as single-port surgery, is a novel, rapidly advancing minimally invasive technique, in which the surgical procedure is performed via a single umbilical laparoscopic incision rather than several abdominal trocar sites. LESS is a recent attempt to further improve the cosmetic result of these operations while minimizing the potential morbidity associated with multiple incisions.[1]

With the recent availability of articulating instruments, LESS has been rapidly adapted into practice and different procedures have been successfully performed in adults and children using these special instruments. However, there are some recent reports describing the continued use of conventional laparoscopic instruments in LESS.[2]

Our case report describes a laparoendoscopic single-site ovarian cystectomy and concomitant appendectomy in an adolescent using conventional instruments and laparoscope.

Case

A 13-year-old female was referred to our emergency department with self-limited acute abdominal pain in the right lower quadrant with absence of fever or vomiting. Abdominal ultrasonography revealed a poorly demarcated heterogeneous right ovarian mass around 6 cm in size, and an appendicolith within the appendix without signs of acute appendicitis (Fig. 1, A). Laboratory studies revealed normal tumor markers (alpha fetoprotein, human chorionic gonadotropin, lactic dehydrogenase and cancer antigen-125), white blood cell count, and C-reactive protein concentration. Abdominal magnetic resonance imaging (MRI) showed a right ovarian mass measuring 3.5 cm consistent with right ovarian dermoid cyst.

After extensive counselling of the patient and her parents about the different techniques available to perform a combined surgical procedure, they chose to undergo concomitant laparoscopic ovarian cystectomy and appendectomy using the LESS technique, and they gave consent for the surgical procedure.

With the patient under general anesthesia, a 3.5-cm umbilical incision was made to enter the peritoneal cavity and introduce the GelPOINT Advanced Access Platform (Applied Medical Resources, Rancho Santa Margarita, CA). The GelPOINT device is a sterile single-use device that consists of GelSeal Cap, Alexis Wound Protector/Retractor (accommodates 1.5-7 cm incision sizes), Cannulas and Seals (accommodates 5-10 mm instrumentation), introducer for Cannulas and Seals and Instrument Shield.

After introducing the inferior ring of the Alexis Retractor, it was rolled until it tightened against the abdominal wall. The trocars were inserted through the GelSeal Cap under direct observation, and then the Cap was adapted over the Retractor (Fig. 2, A). The CO_2 insufflation distended the GelSeal Cap and a pneumoperitoneum was produced with pressure set at 12 mm Hg.

The patient was placed in the Trendelenburg position. Laparoscopy was performed using a 30° 5-mm laparoscope

The authors indicate no conflicts of interest.

* *Address correspondence to:* Sonia Pérez-Bertólez, MD, Servicio de Cirugía Pediátrica, Hospital Infantil Virgen del Rocío, Av. Manuel Siurot s/n, 41013, Sevilla, Spain
E-mail address: spbertolez@yahoo.es (S. Pérez-Bertólez).

1083-3188/$ - see front matter
http://dx.doi.org/10.1016/j.jpag.2013.05.005

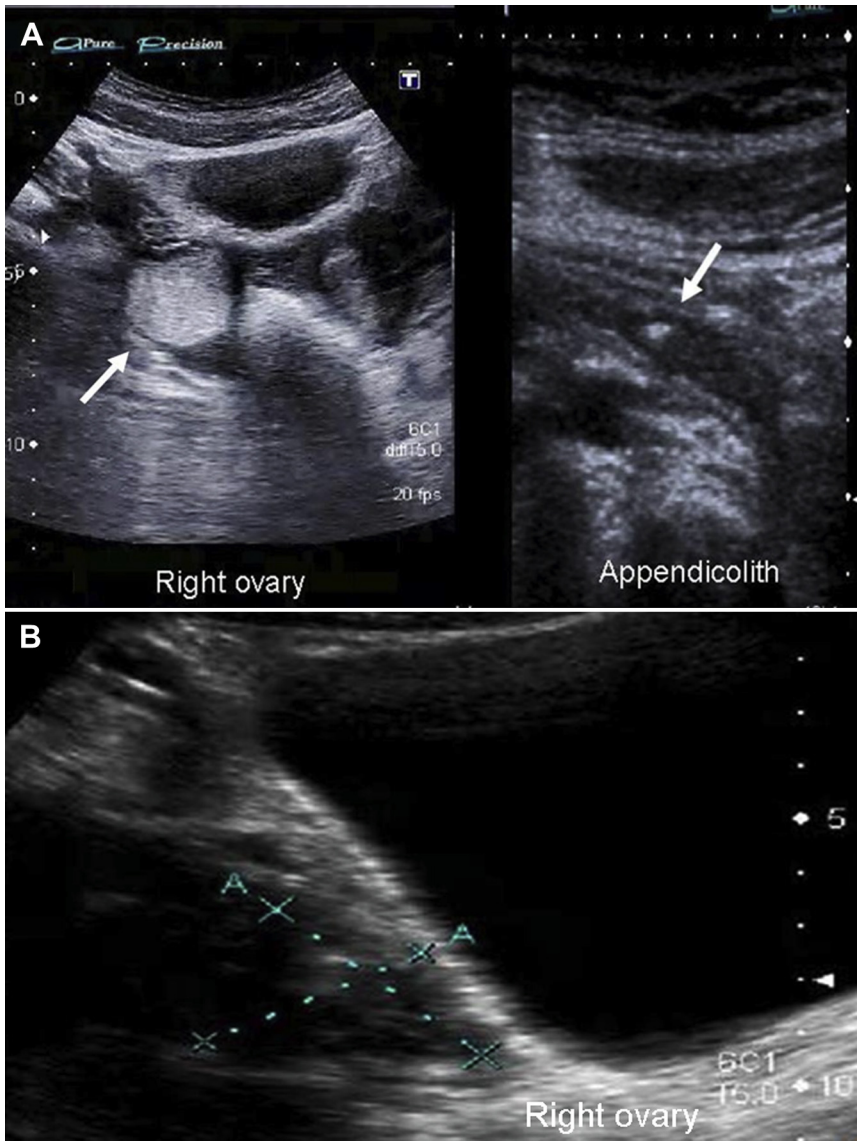

Fig. 1. A, Preoperative ultrasound showing a right ovarian mass and an appendicolith. B, Postoperative ultrasound revealing a normal right ovary after 1 year of follow-up.

(Olympus Medical Systems, Tokyo, Japan) and conventional instruments.

We started the procedure by exploring the abdominal cavity. The right ovarian mass was evident, while the rest of the organs, including the left ovary, were normal. There was little free peritoneal fluid; we sent a sample for cytology. The laparoscopic cyst resection was performed by making a cortical incision in the right ovary, identifying a cleavage plane and enucleating and stripping the cyst from the normal ovarian tissue without rupturing it (Fig. 2, B). Hemostasis was achieved with 5-mm conventional bipolar forceps applied on the ovarian parenchyma. The dermoid cyst was put in an Endobag and delivered through the umbilical Alexis Retractor after removing the GelSeal Cap, without the need for wound extension.

The GelSeal Cap was readapted without difficulty. For the laparoscopic appendectomy, the patient's left side was rotated downward. The mesoappendix was coagulated and divided using a monopolar cautery. The appendix was divided after securing the base with two pretied absorbable loops (Endoloop, Ethicon, Cincinnati, OH) and subsequently retrieved through the umbilical Alexis Retractor.

The peritoneal cavity was lavaged with warm normal saline. The GelPOINT device was completely removed and the umbilical fascia was closed with interrupted absorbable sutures; the subcutaneous tissue and the skin were closed in a subcuticular fashion.

The single-port simultaneous right ovarian cystectomy and appendectomy was successfully completed without the need for extra-umbilical skin incision or conversion to standard laparoscopy. Total postoperative time was 84 min, and the estimated blood loss was 35 mL. There were no intraoperative or postoperative complications.

Postoperative recovery was uneventful and the patient reported minimal postoperative pain. She was discharged from the hospital on postoperative day 1. Histologic studies demonstrated the presence of a mature cystic teratoma or