Culdolaparoscopic Cholecystectomy During Vaginal Hysterectomy

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ABSTRACT

Background: Exploration of the abdominal cavity is routinely performed during abdominal and laparoscopic hysterectomies. The visualization of the abdomen during vaginal hysterectomy, however, is not usually done. During a vaginal hysterectomy, after the uterus is removed, an opening is present in the cul-de-sac, which offers a unique opportunity for the performance of not only exploratory but also concomitant surgeries, such as a cholecystectomy.

Method: Culдолaparascopy is a culdoscopy assisted laparoscopic technique that utilizes a 12-mm trocar in the vagina as a multifunctional port in conjunction with laparoscopy and minilaparoscopy. A cholecystectomy was performed utilizing the vaginal trocar as an insufflation, visual, and extracting port during a vaginal hysterectomy.

Conclusion: Culдолaparoscopy, when performed during vaginal hysterectomy, can be used for exploration and operation in the abdominal cavity. This case report illustrates the feasibility of a cholecystectomy performed using this surgical concept.

Key Words: Vaginal hysterectomy, Cholecystectomy, Laparoscopy, Culdoscopy.

INTRODUCTION

Ventroscopy, a technique used for visualization via colpotomy, was described a century ago. Dr. E. Klaften described colpolaparoscopy, which involves the use of the posterior fornix in diagnostic endoscopy. Drs. A. Decker and T. Cherry later described culdscopy, an application of the aforementioned technique as performed in the knee-chest position. Laparoscopic surgeons may use the posterior fornix for insufflation of the peritoneal cavity. A posterior colpotomy is used as an extraction port for laparoscopic myomectomies, oophorectomies, appendectomies, and cholecystectomies. However, the use of the vaginal port as a visual or operative port, in association with laparoscopy and minilaparoscopy, is a more recent development. This technique provides the option for easy exploration of the abdominal cavity that is customarily not used during vaginal hysterectomy. We applied this concept to an operation in the abdominal cavity during vaginal hysterectomy and present a case of symptomatic cholelithiasis treated with the culдолaparoscopic technique.

The operating room must be equipped with 2 video monitors. It is important that the monitors are not stationary and that they have an articulating arm stand to facilitate mobilization. This is necessary when the surgeon operates in front of the vaginal port. One of the monitors should be cephalad to the patient.

The patient is placed in the lithotomy position and in the Trendelenburg position. We utilize Allen®-type telescopic stirrups. Cleansing of the vagina is done with povidone-iodine 10%, and preoperative intravenous Metronidazole and Cefephalosporin is given. A Foley catheter and Venodyne® boots are also used.

CASE REPORT

An 81-year-old obese female had total uterine prolapse, hydronephrosis, and a symptomatic enlarged gallbladder with large multiple gallstones. This patient underwent a vaginal hysterectomy. After the uterus was removed and hemostasis was achieved, a 12 mm in diameter by 15 cm in length trocar sleeve was placed vaginally into the cul-de-sac and was secured with a purse-string suture at the...
vaginal vault edge. Soaked vaginal packing was placed around the cannula to avoid leakage of pneumoperitoneum. This port was used for insufflation. After the pneumoperitoneum was developed, a 10-mm scope was placed. (I used a 30-degree angle with longer optics.) The 5-mm abdominal trocars were placed under culdoscopic surveillance given that the scope was in the vaginal port.

After confirming the feasibility of proceeding with the cholecystectomy, with regard to angulation and length of instruments, we dissected the hilum. Calot’s triangle and supra-Calot’s triangle were clearly identified. The clip applier was introduced through the umbilical port. The cystic duct and the cystic artery were transected, and the gallbladder was dissected off the gallbladder bed with the hook cautery. When the specimen was extracted, a 5-mm scope was introduced through an abdominal port, and the specimen was removed through the vaginal port by using an Endobag®. Extraction was accomplished by removing the vaginal packing, releasing the purse-string suture, and finally, extracting the trocar and the gallbladder.

The procedure then continued with enterocele repair, bladder neck suspension, and a cystocele and rectocele repair. The postoperative course was not complicated. The patient appeared to have been recuperating well during the first and fourth week follow-up visits.

**DISCUSSION**

The visualization of the abdominal cavity during vaginal hysterectomy can be accomplished from the vaginal port by using the approach presented herein. The abdominal ports are placed under culdoscopic vision. This provides a safer entrance. Culdolaparoscopy involves a resourceful and versatile approach that can effectively overcome the limitations associated with the use of smaller abdominal ports. The surgeon operates from the lateral side of the patient and moves to operate between the patient’s legs depending on the stage of the operation. This approach requires more than 1 size of laparoscope and instruments, and in some instances, the ability to operate against the direction of the optics. The technique allows for the use of smaller abdominal ports that are unlike those typically used for laparoscopic cholecystectomy. It is not necessary to extend any abdominal incisions for extraction. The use of culdolaparoscopy deserves further consideration given the potential advantages it may provide in the exploration and operations of the abdominal cavity during vaginal hysterectomy.

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Acknowledgments: We thank the operating room team and Dr. J Padouvas. Their support made this operation possible on August 20, 1999.