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CLINICAL ARTICLE

Safety and caregiver satisfaction associated with laparoscopic hysterectomy among young patients with intellectual disability

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ABSTRACT

Objective: To evaluate the safety of laparoscopic hysterectomy for young patients with intellectual disability and the postoperative satisfaction levels of their caregivers. *Methods:* A retrospective analysis was conducted of all patients with intellectual disability who underwent laparoscopic hysterectomy at a center in Thailand between January 5, 2004, and August 31, 2010. Information was retrieved about preoperative, intraoperative, and postoperative characteristics. Caregiver satisfaction levels were assessed 3 months after surgery using a Likert-type scale. *Results:* The mean age of the 74 included patients was 14.9 ± 4.2 years. The cause of intellectual disability was unknown for 30 patients (41%); 22 (30%) had Down syndrome. Total laparoscopic hysterectomy was performed among 66 (89%) patients. No major operative complications were noted. Overall, 72 (97%) caregivers were extremely satisfied with the surgical outcome; the remaining 2 (3%) reported being very satisfied. *Conclusion:* Laparoscopic hysterectomy was safe and had good outcomes among patients with intellectual disability. This procedure might be a feasible option to induce therapeutic amenorrhea among young patients with intellectual disability, especially in countries with limited resources.

1. Introduction

Intellectual disability presents before the age of 18 years and is characterized by substantial limitations in cognitive functioning and a lack of the behavioral skills required for daily living. Owing to their inability to care for themselves, female patients with intellectual disability are prone to gynecologic and social problems, such as poor menstrual hygiene, inappropriate behavior during menstruation, sexual abuse, unwanted pregnancy, and sexually transmitted infections [1,2]. Furthermore, conducting a gynecologic examination can pose challenges because of limited co-operation, physical issues, and ethical difficulties.

The main problem encountered among women with intellectual disability is poor menstrual hygiene. One case–control study found that 67% of affected individuals in Finland sought therapeutic approaches to achieve amenorrhea at some point in their lives [3]. Management of menstrual hygiene in this patient population should start with the least invasive options, such as long-term hormonal medication, before progressing to therapies that require complex forms of consent, such as hysterectomy [4,5]. Inappropriate multidisciplinary health care, inadequate familial support, and poor economic status are potential obstacles to the use of long-term hormonal medication. In addition, parents or caregivers often find it difficult to care for individuals with poor menstrual hygiene. Surgical intervention should be considered only after other reasonable and less invasive alternatives have been attempted [6–11]. Surgery might be an appropriate alternative option for some young patients with severe intellectual disability, especially in resource-limited settings.

Hysterectomy is the most frequent surgical intervention performed among young women with intellectual disability because it not only combats problems associated with menstruation but can also prevent unwanted pregnancy, pelvic inflammatory disease, and other uterine or cervical diseases. Studies with both short-term and long-term postoperative follow-up data [7,8] have indicated that the parents of young patients with intellectual disability are highly satisfied with the postoperative outcome. Furthermore, quality of life for these patients was also improved following surgery [9].

The use of open hysterectomy among women with intellectual disability is controversial, and this approach remains under constant scrutiny given the associated complications of major surgery [1,2,9]. By contrast, laparoscopic hysterectomy for benign gynecologic pathologies has been widely accepted and is considered to be preferred approach [12–14]. The advantages of laparoscopic hysterectomy over open hysterectomy include reduced postoperative pain, fewer complications, shorter length of hospital stay, and rapid recovery [12,13]. In addition, advances in laparoscopic equipment and improvisation of techniques

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have, in our experiences, further reduced complication rates and operation times.

The aim of the present study was to evaluate both the safety of performing laparoscopic hysterectomy among young patients with intellectual disability and the postoperative satisfaction levels of their caregivers.

2. Materials and methods

A retrospective analysis was conducted of all patients with intellectual disability who underwent laparoscopic hysterectomy in the Department of Obstetrics and Gynecology, Siriraj Hospital, Bangkok, Thailand, between January 5, 2004, and August 31, 2010. The present study was approved by the institutional review board of Siriraj Hospital. Consent for inclusion in the present study was not required because of the retrospective nature of the analysis.

Patients had been screened and subsequently diagnosed with intellectual disability by either their pediatricians or psychiatrists specializing in the care of children and adolescents. All hysterectomies were requested by the parents or guardians of the affected individuals; these requests were reviewed and a second opinion obtained before the operation could be approved. All the parents and guardians refused to try other less invasive options for affected individuals.

All the procedures were performed either by experienced surgeons or by trainees enrolled in an endoscopic fellowship program who were supervised by experienced members of staff. The type of laparoscopic hysterectomy performed depended on the individual surgeon's preference. Laparoscopic hysterectomy was defined as subtotal if the cervix was preserved and as total if the entire procedure, including vaginal cuff closure, was conducted via the laparoscopic route. In all other cases, the procedure was classified generally as laparoscopic hysterectomy [14].

All the procedures were conducted with the patient in the lithotomy position and under general anesthesia. Bladder drainage was achieved using a 12-French Foley catheter; the uterus was maneuvered with a sound–tenaculum combined manipulator. Laparoscopic ports were placed using a 10-mm intraumbilical port and two or three 5-mm ancillary ports. All plane dissection and coagulation of vascular pedicles were performed by bipolar coagulation.

A monopolar hook was used to open the vaginal vault, aided by a vaginal tube that had been modified by the Thai-German Multidisciplinary Endoscopic Training Center at Siriraj Hospital. This customized vaginal tube helped to demarcate the level of the cervix, as well as outline the vault for ease of cutting. Four sizes of tube were available (Fig. 1); the two smallest (22.5 mm and 30.0 mm) were used in most procedures.

The uterine specimen was removed predominantly through the vagina. When the specimen was large, it was first subjected to mechanical morcellation before retrieval through the vagina. The 12-French Foley catheter was removed immediately after surgery. Postoperative care was conducted as per the routine departmental protocols. Hemograms were performed only if the estimated blood loss exceeded 1000 mL.

Information was retrieved about preoperative, intraoperative, and postoperative characteristics of the patients. These measures included age, body mass index (BMI, calculated as weight in kilograms divided by the square of height in meters), results of intelligence quotient (IQ) testing, diagnosis, type of laparoscopic hysterectomy performed, operation time (from first incision until complete skin closure), intraoperative blood loss, requirement for blood transfusion, conversion to laparotomy, length of hospital stay, pathology report, and contact telephone number for the parents or caregivers.

Major complications of surgery were also recorded. These complications included internal organ injury, hemorrhage requiring transfusion, blood loss in excess of 1000 mL, postoperative fever, and wound infections. Estimated intraoperative blood loss was defined as the difference between the volume of fluid in the suction equipment and the volume of saline solution used during irrigation. Postoperative fever was defined as a temperature of at least 38 °C, measured on two separate occasions at least 12 hours apart, after the first day of the postoperative period. The presence of a purulent or foul-smelling discharge was considered symptomatic of wound infection. Laparo-conversion was defined as the need to use laparotomy to complete the procedure.

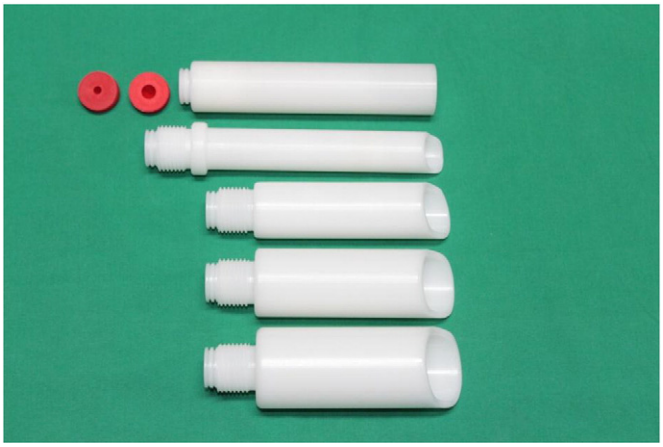

Fig. 1. The vaginal tube used at the Thai-German Multidisciplinary Endoscopic Training Center. A handle (top) is attached to a tube of the chosen size. Four sizes of tube are available: SS (22.5 mm), S (30.0 mm), M (35.0 mm), and L (40.0 mm). The base of the handle is covered with a red silicon cap (5 or 10 mm) that includes a valve to prevent gas leakage and allow the insertion of a 5- or 10-mm instrument through it for specimen retrieval. The vaginal tube is made of a heat-resistant polyplastic material (polyoxymethylene copolymer).

Late postoperative complications were determined after 6 weeks, 3 months, and 6 months. A Likert-type scale [15] was used to assess the satisfaction levels of caregivers 3 months after surgery through a telephone interview and feedback.

The present sample size was based on pre-existing institutional data. The total major complication rate of laparoscopic hysterectomy at Siriraj Hospital between January 4, 2006 and December 26, 2008 was 3.8% (22 of 582 cases). Because of a limitation in the number of patients, a 95% confidence interval and a precision of 5%, instead of 1.9%, were used for the calculations [16]. Using a simple formula appropriate for a prevalence study, it was determined that at least 56 patients were required to provide a representative sample size.

The data were analyzed using SPSS version 13.0 (SPSS Inc, Chicago, IL, USA). Data were presented as number (percentage), mean ± standard deviation, median, mean difference (range), or odds ratio (95% confidence interval), as appropriate. The Pearson χ^2 or Fisher exact tests were used to compare proportions. $P < 0.05$ was considered statistically significant.

3. Results

During the present study period, laparoscopic gynecologic surgery was conducted among 97 patients with intellectual disability, of whom 22 (23%) underwent laparoscopic tubal sterilizations and 1 (1%) a laparoscopic ovarian cystectomy. These 23 patients were excluded from the analysis; therefore, the final sample included 74 patients. No appreciable difference was detected in the results of IQ testing between patients who underwent tubal sterilization and those who underwent laparoscopic hysterectomy (data not shown).

The median follow-up for the 74 patients was 3 months (range 3–6). The mean age at time of surgery was 14.9 years (median 14; range 9–32); most of the patients were aged 9–19 years (Table 1). The mean IQ testing result was 45.7 (median 44; range 14–79). Poor menstrual hygiene was the main issue behind the decision to perform surgery for 72 (97%) patients; dysmenorrhea and inappropriate behavior due to fear of menstrual blood were the main reasons for the other 2 patients. The underlying cause of intellectual disability was Down