Gynecologic Oncology xxx (2016) xxx–xxx

Contents lists available at ScienceDirect

Gynecologic Oncology

journal homepage: www.elsevier.com/locate/ygyno

Outpatient laparoscopic nerve-sparing radical hysterectomy: A feasibility study and analysis of perioperative outcomes☆

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HIGHLIGHTS

- Outpatient laparoscopic radical hysterectomy is feasible in patients with early cervical cancer.
- Postoperative complications did not differ between outpatient and inpatient radical hysterectomy.
- Readmissions were similar comparing outpatient to inpatient radical hysterectomy.

ARTICLE INFO

Article history:
Received 17 June 2016
Received in revised form 29 July 2016
Accepted 6 August 2016
Available online xxxx

Keywords:
Outpatient
Laparoscopy
Radical hysterectomy

ABSTRACT

Objective. The goal of our study was to report on the feasibility of outpatient laparoscopic radical hysterectomy in patients with early-stage cervical cancer.

Methods. We included all patients who underwent a laparoscopic radical hysterectomy at the Instituto de Cancerología - Las Americas in Medellin, Colombia, between January 2013 and July 2015. The control group was a similar cohort of patients who were admitted after their surgery.

Results. Seventy-six patients were included [outpatient (31) and admitted (45)]. There were no statistically significant differences between groups regarding age, clinical stage, histology, nodal count, need of adjuvant treatment, visual pain scores at discharge or follow up time. All patients underwent a transversus abdominis plane block. The median operative time was 150 min (range, 105–240) in the outpatient group vs. 170 min (range, 97–300) in the admitted group ($p = 0.023$). The median estimated blood loss was 50 ml (range, 20–150) in the outpatient group vs. 120 ml (range, 20–1000) in the admitted group ($p = 0.001$). All patients were able to void spontaneously and tolerate a diet before discharge. In patients who were admitted, the median hospital stay was 1 day, (range; 1–6), and 39 (87%) were discharged at postoperative day 1. There were 6 postoperative complications, 3 in each group. There were no recurrences in the follow-up period in the outpatient group, and there were 3 (6.6%) recurrences in the admitted group.

Conclusion. Outpatient laparoscopic radical hysterectomy is feasible and can be performed safely in a developing country in well-selected patients.

1. Introduction

Cervical cancer is the second most common gynecologic malignancy worldwide; an estimated 560,505 new cases were diagnosed in 2015, and nearly 284,923 deaths due to cervical cancer were reported during the same period [1]. The most common surgical treatment for women diagnosed with early-stage (stage IA2–IB1) cervical cancer is radical hysterectomy and pelvic lymphadenectomy and this can be performed by an abdominal, vaginal, laparoscopic or robotic approach [2]. >1200 laparoscopic radical hysterectomies have been reported in the literature [3,4]. Although outpatient laparoscopic simple hysterectomy has become increasingly more popular due to its wide acceptance by patients, and surgeons in general [5,6], there is limited data regarding outpatient

☆ This data was presented in part at the 45th SGO Annual Meeting Tampa, Florida, March 2014 and at the 10th AAGL International Meeting, Barcelona, Spain, June, 2014.

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http://dx.doi.org/10.1016/j.ygyno.2016.08.233
0090-8258/

laparoscopic surgery in gynecologic oncology [7–10]. To our knowledge, there is just one retrospective study [10] describing 21 patients that underwent an outpatient laparoscopic radical hysterectomy, among 303 patients who underwent outpatient laparoscopic surgery for gynecologic malignancies, without any apparent increase in morbidity.

The aim of this study is to report on the feasibility of outpatient laparoscopic radical hysterectomy. In addition, we aimed to compare the outcomes of patients who underwent outpatient radical hysterectomy to a control group of patients who did not meet criteria for the outpatient approach during the same time period. We also defined criteria for implementation of outpatient laparoscopic radical hysterectomy.

2. Materials and methods

After Institutional Review Board approval, the medical records of the 76 patients who underwent a laparoscopic radical hysterectomy at Instituto de Cancerología (IDC) — Clínica Las Americas between January 2013 and July 2015 were retrospectively reviewed. Thirty-one patients were candidates and met criteria for outpatient radical hysterectomy and 45 patients were admitted because they did not meet eligibility criteria and this was our control group.

Patients were considered eligible for outpatient radical hysterectomy if the following criteria were met:Preoperative: signed informed consent, reside <50 km from the hospital, have a care-taker at home, ECOG 0, ASA 1, age ≤ 65 years old, body mass index (BMI) <35 kg/m^2. Intraoperative: surgery completed before 14:00, surgical time <180 min, estimated blood loss <200 ml, hypogastric nerve preserved on at least one side of the pelvis, availability of transversus abdominus plane (TAP) block performed by the anesthesiologist. Postoperative: tolerate diet and spontaneous voiding at 4 h post-surgery, a visual pain scale score < 3 (scale 0 to 10 points) prior to discharge, and desire for discharge upon meeting aforementioned criteria. (Table 1). Outpatient status was considered when patients were discharged the same day of the surgery. A 23-h observation was not considered an outpatient procedure.

Data were obtained from medical and pathologic records. Data collected included age, BMI, FIGO stage, histopathologic subtype, surgical time, hospitalization time (outpatient vs. admitted), estimated blood loss, number of perioperative blood transfusions, time in recovery area, intraoperative and postoperative complications, conversion rates, pain evaluation using a visual scale, number and disease status of lymph nodes removed, and follow-up time. The distance from the hospital to the patient's residence was determined for the outpatient group, using http://maps.google.com.

Table 1
Inclusion criteria for outpatient laparoscopic radical hysterectomy.

Preoperative:
• Signed informed consent
• To reside <50 km away from hospital
• To have a care-taker at home
• ECOG 0
• ASA 1
• Age <65 years old
• BMI <35 kg/m^2
Operative:
• Surgery completed before 14:00
• Surgical time <180 min
• Estimated blood loss <200 ml
• Hypogastric nerve preserved on at least one side of the pelvis
• Availability of TAP block
Postoperative:
• Tolerate oral intake at 4 h post-surgery
• Spontaneous voiding at 4 h
• Visual pain scale score < 3 prior to discharge
• Desire for discharge upon meeting aforementioned criteria.

2.1. Surgical technique

After placement of a V-care uterine manipulator (Utica, NY), the procedure started with the use of five ports: a 10 mm supraumbilical used for the camera and two 5 mm lateral ports on each side, enabling the surgeons to operate on both sides of the patient. After a standard laparoscopy entry in the periumbilical area with an atraumatic trocar (ENDOPATH® XCEL™ Bladeless Trocars – Ethicon Endosurgery, Cincinnati, OH) an inspection of the abdominal cavity is performed in order to rule out metastatic disease. The first step in our approach is to open the pouch of Douglas. Second, dissection of right and left para-vesical and para-rectal spaces (lateral and medial), emphasis is placed on dissection and isolation of the branches of hypogastric nerve. Third, we develop the vesico-uterine space by placing upward traction on the uterus with the help of uterine manipulator and mobilizing the bladder inferiorly once the vesicouterine space has been identified. Fourth, we perform coagulation and cutting of the uterine vessels at the level of internal iliac artery (type III Piver and Rutledge classification, or type C2 Morrow-Querlieu classification). Fifth, we coagulate and cut the pedicles including uteroovarian/infundibulopelvic ligaments (depending on whether a salpingo-oophorectomy is performed), round ligaments, uterosacral ligaments, and parametria. Lastly, we perform resection of the specimen by proceeding with a colpotomy assuring to obtain a circumferential margin of 2 cm of upper vagina. The specimen is then extracted through the vagina. All patients then undergo a bilateral pelvic lymphadenectomy and the lymph nodes are removed through the vagina. The vagina is then closed using 0-Vicryl suture.

2.2. Pain management protocol

All patients, regardless of the approach, received midazolam 2 mgs IV preoperatively. Intraoperatively, all patients received fentanyl 200 mg IV, diclofenac 75 mg IM, and metamizol 2 g IV. At completion of surgery, a bilateral TAP blockade was performed. If the patient was admitted, metamizol 2 g IV every 8 h were given as the only analgesic. Upon discharge, all patients received a prescription (as needed) for acetaminophen 1000 mg oral every 6 h, ibuprofen 400 mg oral every 8 h, and no narcotics were prescribed. No anti-emetics were routinely prescribed. All patients that were managed as outpatients received instructions regarding warning signs and all were provided contact phone numbers to reach our team. All patients who underwent the outpatient procedure were contacted the day of surgery and daily during the first two postoperative days in order to assess adequacy of pain control and overall status. According to institutional policies, all patients were evaluated one week after the surgery.

2.3. TAP blockade

The transverse abdominis plane (TAP) block is a mode of analgesic infiltration used to anesthetize the nerves supplying the anterior abdominal wall (T10 to L1). A local anesthetic (levo-bupivacaine 0.25%) was injected (20 ml, one injection per side) under ultrasound guidance between the internal oblique and transverse abdominis muscles immediately deep to the fascial plane.

Statistical analyses were performed using IBM SPSS Statistics 20 (Chicago, IL). Associations between categorical variables and hospitalization time (outpatient vs admitted) were determined using Fisher's exact test. Nonparametric continuous variables were summarized and compared using the Wilcoxon rank sum test. All tests were two-sided, and a p-value < 0.05 was considered statistically significant.

Please cite this article as: G.J. Rendón, et al., Outpatient laparoscopic nerve-sparing radical hysterectomy: A feasibility study and analysis of perioperative outcomes, Gynecol Oncol (2016), http://dx.doi.org/10.1016/j.ygyno.2016.08.233