Available online at www.sciencedirect.com
SCIENCE DIRECT®
European Journal of Obstetrics & Gynecology and Reproductive Biology 126 (2006) 259–263
ejog European Journal of Obstetrics & Gynecology and Reproductive Biology
www.elsevier.com/locate/ejogrb

Pelvic lymphadenectomy for cervical cancer: Extraperitoneal versus laparoscopic approach

Giovanni Larciprete [a,b,*], Beniamino Casalino [b], Mario F. Segatore [b], Sheba Jarvis [c], Vittorio Catarinella [b], Elio Cirese [b]

[a] *Associazione Fatebenefratelli per la Ricerca (A.Fa.R.), Department of Obstetrics and Gynecology, Fatebenefratelli Isola Tiberina Hospital, P.zza Fatebenefratelli 39, 00186 Rome, Italy*
[b] *Department of Obstetrics and Gynecology, Fatebenefratelli Isola Tiberina Hospital, P.zza Fatebenefratelli 39, 00186 Rome, Italy*
[c] *Guys, Kings and St Thomas' School of Medicine, Kings College London, London Bridge, London, UK*

Received 19 December 2004; received in revised form 25 July 2005; accepted 27 September 2005

Abstract

Objective: To compare the extraperitoneal versus the laparoscopic technique in performing pelvic lymphadenectomy in a series of patients undergoing a radical vaginal hysterectomy for locally advanced cervical cancer.
Study design: Retrospective study with 42 patients undergoing a radical vaginal hysterectomy for cervical cancer. Patients from group A (20 patients) had a laparoscopic lymph node dissection and patients belonging to group B (22 patients) had an extraperitoneal lymphadenectomy. Historical data, clinical and surgical characteristics, perioperative and post-operative complications were analyzed. Follow-up was conducted according to the oncologic requirements.
Results: No significant difference was observed between the two groups in terms of blood loss, post-operative pain, transfusions, hospital stay and post-operative hematomas. The extraperitoneal group (group B) significantly showed a reduced operating time, a greater number of nodes removed ($p < 0.05$). The only lymphocyst occurred in group B.
Conclusions: Extraperitoneal pelvic lymphadenectomy can be considered an adequate technique to complement radical vaginal operations for cervical cancer.

Keywords: Laparoscopic; Extraperitoneal; Pelvic lymphadenectomy; Gynecologic; Cancer

1. Introduction

Evaluation of lymph nodes is an integral part of the surgical treatment of women with gynecologic cancers. The deep anatomical location of pelvic lymph nodes means that they cannot be palpated until the time of surgery. Consequently, most gynecologic cancers are currently staged at the time of surgery, based on surgico-pathologic findings, which include the histopathologic analysis of lymph nodes at this time.

To date, there have been many case reports and case series, which describe a large number of new techniques for lymphadenectomy [1].

The technique using the extraperitoneal lymphadenectomy approach is potentially the most cost-effective option for surgically managing patients with gynecologic cancer since it encompasses shorter operating time, hospital stays, and additionally minimal requirements for surgical instruments [1].

The purpose of this retrospective study was to analyse and compare the extraperitoneal approach versus the laparoscopic technique in performing pelvic lymphadenectomy in patients undergoing radical vaginal surgery for locally advanced cervical cancer.

2. Materials and methods

From January 1999 to January 2003, 42 patients with histologic evidence of cervical cancer preoperatively staged

* Corresponding author. Fax: +39 668809988.
E-mail address: glarciprete@libero.it (G. Larciprete).

0301-2115/$ – see front matter
doi:10.1016/j.ejogrb.2005.09.019

between stage IB and IIA, with no evidence of extra-pelvic lymph nodes involvement, and who had undergone a type 2 or 3 radical vaginal hysterectomy (with or without bilateral oophorectomy) [2] were considered in this study. All these patients were operated at the Gynecology Departments of both Fatebenefratelli Hospitals, San Pietro and Isola Tiberina, in Rome, Italy. Furthermore, these patients had either a laparoscopic (group A) or an extraperitoneal (group B) pelvic lymphadenectomy. The same two surgeons carried out all operations for consistency. The whole set of laparoscopic procedures was performed by a gynecologist expert in laparoscopic procedures, M.P., whilst the extraperitoneal procedures were performed by the senior author E.C.

Patients were retrospectively selected as having complete perioperative data. Pre-operative clinical staging included the following investigations: physical examination, chest X-rays, CT/MRI scans, and routine pre-operative blood tests.

The technique and extension of lymphadenectomy were identical, as previously described elsewhere [3–5]. The pelvic laparoscopic procedure was the same as extensively reported by Altgassen et al. [4] and no step was changed.

The pelvic extraperitoneal lymphadenectomy was performed according to Silver et al. [5] however this was modified slightly with regards to the method of abdominal incision. In our study, Pfannenstiel incisions were carried out by dividing the skin of the lower abdominal wall bilaterally along an 8-cm line, extending between two points placed 2 cm medial to the anterior iliac spines. The skin, the subcutaneous tissue, the external and internal oblique muscles, transversus abdomininis muscle and their fascia, were divided to enter the pre-peritoneal space. By reflecting the peritoneum medially, the retroperitoneal space was exposed allowing for clear visualization of the pelvic lymphatic tissue. Pelvic lymphadenectomy was performed by resection of the entire lymphatic tissue overlying the common iliac, external iliac and internal iliac vessels and the obturator nerves. The lymphatic tissue from the upper third of the common iliac vessels was also removed (Fig. 1).

All patients were booked for a scheduled follow-up every 3 months, which was comprised of pelvic examinations and Pap smears and additionally yearly chest X-rays for the first 2 years. Subsequently, patients were followed with bi-yearly examinations and Pap smears. Data were recorded and analysis of patient characteristics, pathological findings, length of procedures, duration of hospital stay, intraoperative and post-operative complications were carried out extensively. The operating time was recorded from the abdominal incisions to the skin sutures.

Post-operative pain was evaluated (from 1 to 10), using the visual analogue scale (VAS) as previously reported elsewhere [6].

Post-operative haemoglobin value of 7 g/dl was used as threshold for blood transfusions, as stated by Hardy [7].

The occurrence of lymphocysts or retroperitoneal hematoma was diagnosed on clinical and instrumental basis, by using ultrasound scans as opposed to CT-scans [8,9].

Statistical analysis was carried out with Mann-Whitney *U*-test for continuous variables and the Fisher exact test for the frequency data. Significance was set at a probability value of <0.05.

3. Results

3.1. Patient characteristics

Forty-two patients were enrolled in the study. The mean age was 47 years. The mean BMI was 24.7 (Table 1). The

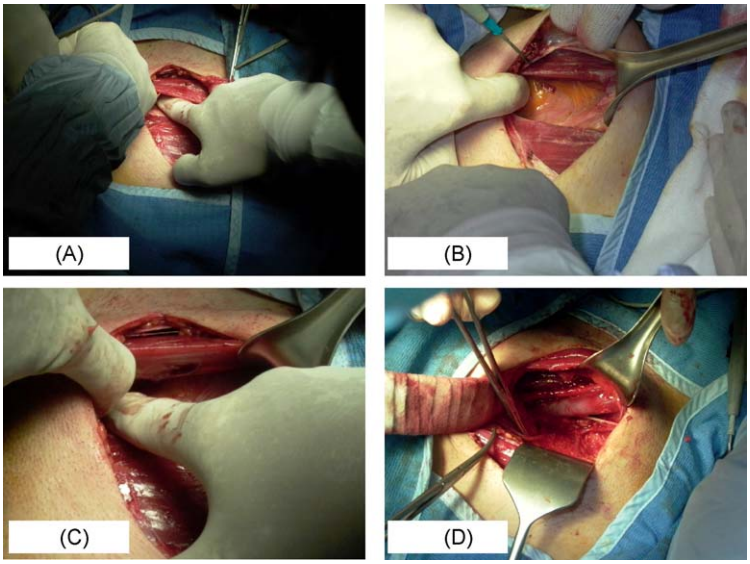

Fig. 1. (A) Pfannenstiel incision. (B) Opening of the abdominal wall by cutting the anterior fascia and separating the recti muscles. (C) The space between abdominal wall layers and parietal peritoneum is developed by moving the fingers inside the correct dissection plane. (D) Extraperitoneal space at the level of the pelvic vessels. From the upper to the lower side of the surgical field: external iliac artery, external iliac vein, obturator nerve, internal iliac artery and uterine artery.