Total laparoscopic hysterectomy of an uterus of 1840 grams: a case report

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Abstract. This case report describes a total laparoscopic hysterectomy of a large uterus of a woman who recently underwent neurosurgery for a grade IV glioblastoma. Because of a severe anaemia due to chronic vaginal haemorrhage for a fibromatosis uterus, she was not able to start a chemotherapic oncological protocol. We thus decided to perform a total hysterectomy through a laparoscopic approach in order to reduce the hospital stay and to ensure a quick recovery. We studied a surgical but also anaesthesiological strategy in order to obtain a good result with no or as few as possible complications. (www.actabiomedica.it)

Key words: Laparoscopic hysterectomy, LAVH, TLH, large uterus

Introduction

Hysterectomy through abdominal, vaginal or laparoscopic approach, remains the most common gynaecological procedure for many indications. Since the 1980s, when the first laparoscopically assisted vaginal hysterectomy (LAVH) was described (1), questions are still open on its feasibility and indications (2, 3). Many studies (case-controlled, observational, randomized) tried to demonstrate its advantage against other techniques, but it still remains unclear if it is a sure and not risky procedure (4-6).

In particular, during the early period of LAVH, a large uterus was a contraindication² for this procedure and also for a vaginal approach, thus the only possibility was a laparotomic technique. Today, in spite of the improvements in laparoscopic techniques and instruments the trocar placement, the reduced possibility of a good laparoscopic view and the intrapelvic space still remain a problem.

We present a case report of an uterus of 1840 grams that was removed through a total laparoscopic approach, describing the surgical strategies and the motivations of our indication.

Case report

A 54-year old patient came to our attention in February 2008 for massive anomalous uterine bleeding that was non responsive to conventional anti-hemorrhagic pharmacological therapy.

She referred to us that in October 2007, during a haemorrhage, she also presented chronic headache and an anomalous value of a tumoral marker (CA 125:62 UI/1).

A TAC total body, carried out in another hospital, showed a cerebral neoformation.

In the same month she underwent neurosurgery with asportation of the cerebral mass that was diagnosed as a grade IV glioblastoma.

The standard protocol of treatment for this disease was 3 cycles of radiotherapy followed by chemotherapy.

She was treated only with radiotherapy but it was not possible to ensure tolerable chemotherapy due to her severe hemorrhagic anaemia. For this reason the oncological team decided to send her to our attention for the evaluation of pelvic surgery.

The patient was studied following our internal preoperative protocol with routine blood examination, gynaecological bimanual visit, trans-vaginal/trans-abdominal ultrasound, chest RX, ECG, Pap test, endometrial curettage, and anaesthesiological evaluation. After this evaluation, a fibromatous uterine with a very large uterus similar to 20 weeks of pregnancy was diagnosed.

In February 2008 she underwent a total laparoscopic hysterectomy with bilateral oophoro-salpingectomies (Table 1).

The day before surgery, the patient received mechanical bowel preparation. Anti-thrombotic prophylaxis with low-molecular-weight heparin was administered from the evening before surgery until mobilization, and prophylactic antibiotic therapy with cefazolin was given at the beginning of the operation, following our internal protocol.

Operative laparoscopy

Due to the recent neurosurgery, the anaesthesiologist decided to check the oxygen saturation and CO2

Table 1.	Surgical	outcomes
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Surgical outcomes		
Age (yrs)	54	
Uterine weight (g)	1840	
Operative time(mins)	180	
Blood loss	100 cc	
Hospital stay(days)	3	
Time to well being(days)	10	
Intra-operative complications n.	0	
Early minor complications n.	0	
Late complications n.	0	

level every 30 minutes until the end of the laparoscopy with an arterial blood analysis; the patient was in anti-Trendelemburg position in order to avoid hypercapnia; in fact a small quantity of CO2 may be absorbed by the diaphragmatic peritoneum.

After general anesthesia and pneumoperitoneum, the insertion of videolaparoscope through the umbilicus was positioned: the uterine fundus reached the abdominal epigastric region and it was very large with multiple nodes (the maximum myoma was intramuralis with a medium diameter of 12 cm). For this reason we decided to position the insertion for videolaparoscope in the epigastric region and four further (5 mm) trocars were placed in the proximal and distal colic region, respectively (two for site). A 30° videolaparoscope was used to improve the laparoscopic vision. The first operator changed side from the right to the left side in order to have access to the uterus side, while the second operator controlled and used the laparoscopy and instruments in the epigastric trocar.

After bilateral visualization of the ureters, total hysterectomy and bilateral oophoro-salpingectomy with bipolar technique was performed; a good manipolation of the uterus is important in all laparoscopic hysterectomies, especially in this case.

It was impossible to extract the uterus through the vagina due to its size; we performed a section with laparoscopic knife (the endometrial curettage was negative for malignant cells) in order to remove it and four knots in laparoscopic way were applied in order to close the vagina.

The operative time was calculated from the induction of anesthesia to the patient's awakening (180 minutes). Estimated blood loss was calculated using the suction system and resulted in 100 cc.

No intra-operative or post-operative complications were observed; in the first 24 hours the patient was admitted to the intensive therapy unit in order to control all vital parameters.

She was discharged on the third day in good general conditions. The histological examination confirmed the presence of multiple uterine benign myomas.

After ten days the patient was able to begin the chemotherapy treatment, following the oncological protocol.

Discussion

Hysterectomy is the most common surgical procedure for benign gynaecologic conditions and the abdominal, vaginal or laparoscopic approach is a matter of continuing debate.

The best indication for this surgery is the vaginal approach. However, there are some conditions in which it is not possible.

In fact large uteri, excessive angle of Arcata pubis, rigidity of peritoneal plan, strength of sospensor legaments and reduced mobility of the uterus are all contraindications to vaginal hysterectomy.

In particular, during the early period of laparoscopic hysterectomy a large uterus was considered as a relative contraindication (2).

A comparison of women who underwent TLH (Total laparoscopic hysterectomy), with uterine weight greater than 500 g with those who had a uterus weighing less than 500 g, revealed that the former had an increased risk of haemorrhage, blood transfusion, vaginal cuff cellulites and more operative complications (i.e. fever, unintended major surgical procedures, life threatening events, re-hospitalization and death) (7).

Nevertheless, a review of the literature about hysterectomies for large uterus suggests that most gynaecologists choose the abdominal route (8).

However, in our past experience in laparoscopic hysterectomy we compared surgical outcomes of patients with a uterus weighing more than 500 g (500-1500 g) and patients with a uterus weighing less than 350 g (range 40-350 g) and we did not observe statistical differences between the two groups (9). In fact, in our department 98% of all surgical operations are performed through a laparoscopic approach, and as demonstrated by various studies, the surgeons' experience reduces the complications and makes TLH feasible in the case of a very large uterus.

In this case the laparoscopic approach allowed us to avoid a laparotomic incision, to reduce hospital stay, and to begin the chemotherapy as soon as possible.

However the major technical difficulties in performing a TLH for a large uterus include securing operative visibility, placing the trocars in proper areas, and removing the large uterus. We applied the classic bipolar tecnique (sec. Clermont Ferrand) which is safe and reproducible; we decided to place two and not only one 5 mm-trocar on each side in order to handle the instruments smoothly without being hindered by the large uterus and to ensure a good uterine vessels coagulation with less intraoperative blood loss (10). However in our case the voluminous uterus presented an elongated shape that was visible and accessible with surgery. We believe that even in case of a voluminous uterus the position that the first and second operator had as in this case made the technique possible.

The operative time was 180 minutes and no important blood loss or intraoperative complications were observed.

Recently Walid MS et al. reported a case report of laparoscopic hysterectomy for large uterus volume 3 kg with excellent results using laparoscopic surgical technique as a way similar to that described in our case (11).

In conclusion we believe that TLH is also possible for patients with a very large uterus in expert surgeon hands; it represents a minimally invasive surgery with all the mentioned benefits.

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