Total laparoscopic hysterectomy
Our experience from 2008 to 2012

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Total laparoscopic hysterectomy. Our experience from 2008 to 2012

OBJECTIVES: *Nowadays total laparoscopic hysterectomy (TLH) is a surgical procedure increasingly adopted for the treatment of benign and malign uterine disease. The aim of our study is to revise our recent experience of TLH.*
METHODS: *This is a retrospective observational study conduced on 101 patients between 2008 and 2012. The surgical procedure has been performed by the same surgeon and with the same surgical technique. Patients with benign disease and I-II stage endometrial cancer (FIGO 2009) were considered eligible for the study. Data collected were concering weight, height, BMI, age; kind of disease; type of surgery performed and possible variants; surgery duration; intra-operative and post-operative complications.*
RESULTS: *In 80 patients TLH was performed for benign disease, in 42 cases uterine fiboids; salpingo-oophorectomy has been performed in 37 patients; the mean surgical time was 81 minutes for benign disease and 112 minutes for malign disease. In 1 case conversion to laparotomy was required; in 5 patients we recorded post-surgical fever; in 1 patients we recorded deiscence of vaginal vault. None of the considered factors (age, BMI, kind of surgery) was significantly associated with increased frequency of intra- and post-operative complications.*
CONCLUSIONS: *Our clinical experience on TLH is increasing as years pass by, and our results are in line with those reported by other Centers. On the basis of our experience, in agreement with recently published data, we believe that vaginal vault closure should be performed through vaginal access.*

KEY WORDS: Laparotomic hysterectomy, Total laparoscopic hysterectomy, Vaginal hysterectomy

Background

Total hysterectomy is one of the most common gynaecological surgery procedure [1,2] generally performed for benign disease such as myomas, abnormal uterine bleeding associated or not associated with endometrial hyperplasia, adenomyosis, pre-invasive disease like cervical dysplasia or for malignant disease such as endometrial cancer [3].

Beside the traditional open access and vaginal access, laparoscopy is getting more and more relevant. Twenty years have passed since when Harvey Reich performed the first total laparoscopic hysterectomy (TLH) [4], afterwards many efforts have been made by gynaecologic surgeons to improve this technique. In present days the majority of gynaecological surgery centers, ours included, adopts Koh's technique [5], which shortens the learning curve and improves outcomes, reducing iatrogenic urinary-tract damages, intraoperative blood loss [6], hospitalization time and recovery time [7], furthermore this

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procedure is feasible on the majority of patients, with a small risk of post-operative consequences such as infections, haemorrhages and thromboembolic events [8,9].
With the improvement of surgical skills, performing this kind of surgery with a day-surgery hospital stay has been considered [10-12].
Therefore TLH is increasingly adopted both for benign and malign disease and especially for early endometrial cancer stadiation (peritoneal washing, pelvic lymphadenectomy, salpingo-oophorectomy, TLH) [9]. Very recently it has also been described a technique of single port laparoscopically assisted hysterectomy, via a single peri umbilical incision [13]. This technique is promising. However, the increased operating time in absence of substantial advantages for the patient makes this procedure rarely used
The aim of this study is to revise our recent experience as far as TLH is concerned, both for benign and malign disease.

Methods

This is a retrospective study made on 101 TLH performed by our gynaecological surgery team between 2008 and 2012. Data were collected from our database and an accurate revision of clinical documentation was carried out. Al the procedures were performed by the same surgeon with the same technique; previous antibiotic prophylaxis was administered according to International Guidelines [14].
Patients with uterine benign disease and I-II stage endometrial cancer (FIGO 2009) were considered eligible for this study. The latters underwent an extrafascial hysterectomy, bilateral salpingo-oophorectomy, peritoneal washing, lymph nodes sampling and/or pelvic/aortic lymphadenectomy.

TABLE I - *Patients features*

Parameter	Mean value	SD
Age (years)	51.6	9.5
BMI (kg/m²)	27.5	3.5
Operative time (min)	88.5	20.2
Hospital stay (days)	3.0	1.1

TABLE II - *Demographic features*

	N.		N.
Nulliparous	17	Primiparous	36
Multiparous	48		
Fertiles	51	Menopause	50
Caucasians	54	Africans	25
Caribbeans	16	Asians	6

Data collected were concerning weight, height, BMI, age, parity, race and comorbidities; kind of disease; type of surgery performed and any possible variants, surgery duration, intra and post-operative complications and hospital stay.
The surgical approach was decided considering, beside the kind of disease, BMI, parity, previous abdominal surgery, uterine volume. Obesity is generally considered to increase technical difficulties and infectious and hemorrhagic complications 1; so does great uterine volume [15] and aderential syndrome, restricting the possibility to adopt laparoscopic access.
Statistical analysis was performed using PASW-SPSS Statistics v.18 (2009) software.

Results

TLH were 1 in 2008 (1%), 2 in 2009 (2%), 22 in 2010 (22%), 41 in 2011 (40%) and 34 (34%) up to September 30th 2012. Epidemiological features are resumed in table I and II. 54 patients were Caucasians, 25 Africans, 16 the Caribbeans and 6 Asians.
80 patients underwent TLH for benign disease, in 37 cases the bilateral salpingo-oophorectomy was performed. The presence of symptomatic fibroids has been the most common indication for hysterectomy (42 cases, 41% of the total and 52.5% of cases of benign disease), followed by dysfunctional uterine bleeding (19 cases, 23.7% of cases of benign disease). Other benign causes of hysterectomy were atypical hyperplasia (10 cases), symptomatic adenomyosis (6 cases) and cervical dysplasia (3 cases). The mean operative time for laparoscopic hysterectomy for benign disease was 81 minutes. The surgery for malignancy staging was performed in 21 patients (20.7% of total), with a mean operating time of 112 minutes.
In three patients we recorded intraoperative major complications: in 1 case (1%) conversion to laparotomy was required because of technical difficulties caused by the uterine size and the associated copious intraoperative bleeding,in 1 case (1%) has occurred abnormal intraoperative bleeding, which necessitated the use of blood transfusion, in 1 case (1%) we recorded a large intestine peritoneal serosa injury, which was sutured immediately. We found no complications related to injuries of the urinary tract (bladder, ureters) or the small intestine.
7 patients had postoperative complications, among whom we recorded five cases of fever (4.9%), 1 case of wound infection (1%) 6 days after surgery, which made medications and antibiotic therapy necessary, and 1 case of vaginal vault dehiscence (1%), which necessitated hospitalization of the patient and to be sutured again through the vaginal access.
None of the parameters (age, BMI, type of surgery) showed statistically significant association ($p < 0.05$) with the risk of intraoperative and postoperative complica-

tions, although it is interesting to underline that all cases of postoperative infection occurred in patients with BMI >30 kg/m².

Discussion

Our clinic experience of TLH is increasing as years pass by, demonstrating how the technical skill and experience of the operator play an important role in choosing the surgical approach. Our results are in line with those reported by other centers concerning operative time, length of hospital stay and the incidence of major complications, even considering that we have included in our study also oncological patients.
Among the intraoperative complications we reported only 3 cases (3%), of whom 1 conversion to laparotomy was required because of copious intraoperative bleeding in an obese patient with bulky uterus.
Regarding the incidence of major postoperative complications occurred 1 case of partial and asymptomatic dehiscence of vaginal vault, diagnosed accidentally during the routine post-operative visit at 22 days after surgery. A current hot topic, as shown by two recent works of Ceccaroni et al [16] of 2011 and Uccella et al. in September 2012 [16], is the outcome of the laparoscopic closure of the vaginal vault compared to the suture through the vaginal route. In our study, in 57 occasions the suture of the vaginal vault was performed with laparoscopic technique using intracorporeal knots, while in the remaining 44 patients the suture was performed through the vaginal route (for the operator's choice). The only case of dehiscence occurred in the group of patients with laparoscopic closure of the dome, a partial confirmation of the greater reliability of vaginal colporrhaphy claimed by Ceccaroni [16] and Uccella [17].
Our series, although encouraging, is currently too small to draw definitive conclusions. However, we believe to have acquired adequate surgical experience to offer our patients an effective and safe intervention, which allows a rapid functional recovery.

Riassunto

L'isterectomia totale laparoscopica (TLH) è un intervento ad oggi sempre più frequentemente praticato per il trattamento della patologia uterina benigna e maligna. L'obiettivo del nostro studio è una revisione della nostra esperienza recente di TLH.
Metodi: Si tratta di uno studio retrospettivo osservazionale condotto su 101 pazienti tra il 2008 ed il 2012. La procedura chirurgica è stata effettuata dallo stesso operatore e con la medesima tecnica chirurgica in tutte le pazienti. Le pazienti eligibili per il nostro studio erano affette da patologia benigna o da ADK endometriale in stadio I-II sec. FIGO 2009. I dati raccolti riguardano IMC, età, parità, razza, indicazione chirurgica, tipo di intervento, durata dell'intervento, durata della degenza e complicanze intraoperatorie e postoperatorie.
Risultati - Su 101 interventi di TLH, 80 sono stati effettuati per patologia benigna, di cui 42 per fibromatosi uterina sintomatica; in 37 pazienti è stata praticata salpingo-ovariectomia bilaterale; il tempo operatorio medio è stato di 81 minuti per patologia benigna e di 112 minuti in pazienti con malignità. In 1 caso abbiamo dovuto procedere a conversione laparotomica; 5 sono stati i casi di febbre post-chirurgica; in 1 paziente si è verificata deiscenza di cupola vaginale. Nessun fattore considerato (età, BMI, tipo di intervento) si è dimostrato associato ad un significativo incremento di complicanze intra- e post-operatorie.
Conclusioni: Presso la nostra clinica la casistica di isterectomia laparoscopica si sta ampliando di anno in anno, ed i nostri risultati sono in linea con quelli presentati da altri centri. Alla luce della nostra esperienza e di quanto pubblicato in letteratura, riteniamo che la chiusura della cupola vaginale abbia outcomes ottimali quando eseguita con accesso vaginale.

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