ABSTRACT

Objective: To determine the indications and complications of removal of the retained cervical stump (trachelectomy).

Material and Methods: Retrospective review of the records of 15 cases of removal of the retained cervical stump performed at the Department of Surgical Oncology NCI Cairo University and Nasser Institute Cairo between January 2005 and December 2009.

Results: Fifteen patients were identified with a mean age of 43.1 ± 8.4 years. The indications for subtotal hysterectomy were uterine fibroids, 7 (46.7%), abnormal bleeding, 5 (33.3%), and ovarian mass, 3 (20%) cases. Route of trachelectomy was abdominal in all cases. The indications for trachelectomy were cervical malignancy in 8 (53.3%), residual tumor at the hysterectomy specimen in 3 (20%), and persistent bleeding in 2 (13.3%) cases. The most common concomitant procedures with the trachelectomy were pelvic lymphadenectomy in 11 (73.3%), and oophorectomy in 10 (66.6%) cases. There were no postoperative mortalities. The most common complications were wound infection, 4 (26.6%), and urinary tract infection, 3 (20%). The mean estimated blood loss was 341.0 ± 82.3 ml. Hospital stay was 7.9 ± 5.1 days. The most common histological diagnosis was squamous carcinoma 9 cases (60%). The median follow-up period was 16 months.

Conclusion: Subtotal hysterectomy carries the risk of developing a stump cancer. Patient agreement is mandatory. Subtotal hysterectomy should be avoided whenever possible in populations with restricted access to screening programs for cancer of the uterine cervix.

Key Words: Trachelectomy – Cervical stump.

INTRODUCTION

Recently, subtotal hysterectomy (STH) has been issued after having been almost abandoned for a long period. Sparing the cervix at the time of performing hysterectomy may have advantages, including less surgical trauma and blood loss, fewer incidences of vaginal vault prolapse, enterocoele, and vaginal shortening. Beneficial effects of retaining the cervix on the neurophysiologic status of the pelvic organs and the psychosexual behavior of the patient have been suggested [1], but not proven [2]. Opponents of STH, either it is performed open or by a laparoscopic approach, often seem to be concerned with the risk of cervical stump symptoms such as vaginal bleeding, pelvic pain and cervical malignancy. Cancer in the cervical stump is difficult to treat and it is associated with a much higher complication rate than when the uterus is present [3].

Carcinoma of the cervical stump may be divided into two distinct groups: Coincidental cases and true cases. Coincidental cases are detected within 2 years after hysterectomy and are considered to be due to pre-existing disease that escaped detection at the time of hysterectomy. True cases are detected later and considered to arise de novo in the stump [1].

Pap smears must be continued per standard indications as human papilloma virus (HPV) is common. Some suggest that HPV testing be done before STH [4], especially for younger women, or women who are not in monogamous relationships. Cervical cancer rates continue to rise throughout a woman’s life with an age specific incidence of 30/100,000 at age 80, more than double that of age 30 to 40 [5].

Women with high-risk factors for cervical neoplasia such as HPV infection (HPV types 16, 18) [6, 7], human immune deficiency virus [8] and those with persistent inadequate or low grade cervical smear abnormalities should be adequately counseled about the risk of developing cancer of the cervical stump. This should also apply to women at risk of developing en-
dometrial cancer. These are women with poly-cystic ovarian disease, obesity, diabetes mellitus, previous history of breast or colon cancer and those taking Tamoxifen. It is prudent to avoid STH in women with risk factors for cervical and endometrial carcinoma. Subtotal hysterectomy in such women should only be performed for strong medical indication or after detailed counseling.

The purpose of this study is to determine the indications and complications of removal of the retained cervical stump (trachelectomy).

PATIENTS AND METHODS

Between January 2005 and December 2009, 15 patients underwent removal of the retained cervical stump at the Department of Surgical Oncology, NCI, Cairo University and Nasser Institute Ministry of Health. On admission a full diagnostic examination was performed which included physical examination, tomography of the abdomen and pelvis. Cystoscopy with examination under anesthesia was done for patients with carcinoma of the cervical stump. The clinical and pathological records of the previous treatment were reviewed to determine the primary disease, postoperative morbidity and mortality as well as complications. Question about if they know the risk of leaving a cervical stump and why they preferred to do this operation was asked for all patients.

All patients underwent exploration through abdominal incision with trachelectomy. All the patients were followed-up on monthly bases for the first year after surgery and at three-monthly intervals up to five years. A full physical examination was performed at each visit. Full abdominal and pelvic tomography was routinely performed every six months for the first five years of follow-up.

RESULTS

A total of 15 patients underwent trachelectomy. Their mean age was 43.1 years (range 32 to 56 years).

Reasons for having subtotal hysterectomy:

The reasons for having the hysterectomy were fibroid in 7 cases (46.7%), abnormal bleeding in 5 (33.3%), ovarian mass in 3 (20%). All patients did not know the risk of leaving the cervical stump and would have preferred to do total hysterectomy if they were aware of this risk.

Indications for trachelectomy:

The most common indications for trachelectomy were cervical malignancy in 8 (53.3%) cases, residual tumor at the hysterectomy specimen in 3 (20%) cases of these 2 endometrial carcinoma and 1 cervical carcinoma, persistent bleeding in 2 (13.3%) cases, pelvic mass in 1 (6.7%) case, and abnormal pap smear in 1 (6.7%) case (Table 1).

Six patients underwent ureteric stenting before exploration. The common concomitant procedures with the trachelectomy were pelvic lymphadenectomy in 11 cases (73.3%), oophorectomy in 10 cases (66.6%), cystectomy in 2 cases (13.3%) and bowel resection in 2 cases (13.3%). The 2 patients who have total pelvic excenteration underwent primary colonic anastomosis and ileal loop conduit as urinary diversion (Figs. 1-4).

Outcome and complications:

The mean estimated blood loss was 341.0±82.3ml. The operating time ranged from 180 to 345min with a mean of 216min. Patients stayed 8-20 days in hospital after operation with a mean of 7.8±5.1 days. For the 8 patients with cervical stump carcinoma and the patient with cervical carcinoma at the hysterectomy specimen, the postoperative pathology was squamous carcinoma, with positive iliac nodes in 3 patients, for the 2 patients with endometrial carcinoma there was no residual tumor. One of the 2 patients with persistent bleeding had chronic cervicitis and the other had endometrial hyperplasia. The patient with pelvic mass had benign ovarian cyst. Pathological examination of the patient with abnormal pap smear proved squamous dysplasia (Table 2).

There was no intraoperative or postoperative mortality. The overall complication rate after trachelectomy was 46.6% (7/15 patients). Wound infection occurred in 4 cases (26.6%), urinary tract infection in 3 (20%), urinary leakage in 1 (6.7%) and wound dehiscence in 1 case (6.7%). All complications were managed conservatively. The 9 patients with cervical carcinoma received postoperative radiation therapy. The median follow-up period was 16 months.
Fig. (1): Specimen after trachelectomy with bilateral lymphadenectomy, note here a long cervical stump.

Fig. (2): Specimen after anterior pelvic exenteration, the pelvic peritoneum, lower part of the ureters, remaining cervix, bladder, and draining lymph nodes are removed.

Fig. (3): Specimen after trachelectomy, bilateral lymphadenectomy and bilateral oopherectomy.

Fig. (4): Specimen after trachelectomy showing ulcer at vault of vagina.

Fig. (5): Cervical stump carcinoma. A) Preoperative CT showing bulky cervical stump, B) Specimen after trachelectomy, bilateral lymphadenectomy and bilateral oopherectomy.
A controversy arises between preservation or removal of the uterine cervix during hysterectomy. Some have argued that supracervical hysterectomy better preserves bladder and sexual function [11]. However, for routine cases, the available literature does not confirm that one procedure is superior [12]. Roovers and colleagues [13] compared the effects of vaginal hysterectomy, subtotal abdominal hysterectomy, and total abdominal hysterectomy (TAH) on sexual wellbeing over six months in more than 400 women in Netherlands. They found that sexual activity did not change after surgery, but general satisfaction about sexuality improved. The authors also reported that the three surgical techniques were associated with similar persistence and development of bothersome problems during sexual activity. El-Toukhy and colleagues [14] found no negative impact on sexual function 6 months after laparoscopic subtotal hysterectomy (LSH) or laparoscopic total hysterectomy (LTH). Hendrix and colleagues [15] observed similar rates of cystocele, rectocele, and stress and urge incontinence in women with and without hysterectomy.

Three randomized controlled trials specifically addressed perioperative or postoperative complications of TAH compared with STH [2-16-17] and they concluded that, although STH may be associated with less blood loss and a shorter surgical time, these parameters have not been found to be clinically significant.

The main disadvantage of STH over TAH is the fact that in 1 per 1000 women develops carcinoma in cervical stump. Although the frequency of cervical stump carcinoma is low especially in some developed countries because of the efficient screening programmes, screening for squamous cell carcinoma of the ecto-cervix has its inherent risks. Likewise, screening for cervical stump adenocarcinoma is not reliable and screening for endometrial carcinoma is not available. Cervical stump endometrial carcinoma is possible but rare. Endometrium from incompletely excised body of the uterus may give rise to endometrial carcinoma as in the reported cases of endometrial carcinoma arising from minute residual pockets of endometrium, after trans-cervical endometrial resection [18]. In our study 8 out of 15 patients (53.3%) underwent trachelectomy due to the development of cervical carcinoma after STH.

Symptoms related to the cervical stump requiring further surgery frequently occur following a supracervical hysterectomy. Twenty-five percent of the patients continued to menstruate, and 10% had discharge. Careful long-term analysis of results demonstrates a high complication rate reporting symptoms related to the cervical stump in 24% of patients, all requiring further operations. Adhesions, especially between the bowel and the cervical stump, endometriotic lesions, cervical pathologies (chronic cervicitis, mucocoeles), myomas and prolapse have been reported at long-term follow-up [5,19]. In our study 2 out of 15 patients (13.3%) underwent trachelectomy due to continuous vaginal bleeding after STH.

In our study, 3 patients (20%) had residual tumor at the hysterectomy specimen and 2 (13.3%) had cervical carcinoma within 2 years of the initial hysterectomy that may be due pre-
existing disease that escaped detection at the
time of hysterectomy. This is also a reason for
our preference as to do total rather subtotal
hysterectomy.

McKinnon et al. [20] believed that every
patient presenting by a diseased cervix in associ-
ation with other uterine conditions requiring
hysterectomy should have a total hysterectomy.
This belief is based on the fact that 95 per cent
of carcinomas of the cervix arise from erosion
and chronic cervicitis. Cauterization of the
cervix does not as a rule remove all gland-
bearing tissue, nor does it remove the epithelium
from the portio vaginalis which is frequently
the primary focus of cervical cancer. Therefore,
as a substitute for total hysterectomy, application
of cautery to cervix is a poor second [20].

Many gynaecologists use the term STH with
incomplete procedure, while leaving part of the
body of the uterus (Fig. 1). In the proper oper-
ation the uterus must be amputated at the level
of internal os. Donnez [21] suggested that uterine
amputation above the level of the internal cer-
vical ostium might be a cause for the high
occurrence of vaginal bleeding following LSH.
Lieng [22] showed a significantly higher rate of
postoperative vaginal bleeding in patients treated
by less experienced surgeons.

In a retrospective study of 390 cases done
by van Evert et al. [23], they found that LSH,
as compared to the laparoscopic hysterectomy
(LH), was associated with less short-term complica-
tions but more long-term complications such as cervical stump problems and dyspareu-
nia. The incidence of cervical cancer is very
low, but in view of the persistent risk, all women
must continue to undergo routine cytological
screening following a SCH [24]. In our country
we do not do routine screening for cervical
carcinoma even for patients that underwent
subtotal hysterectomy.

Each woman should have proper preopera-
tive information about the risks of leaving her
cervix. Women with pelvic pain and/or endome-
triosis should in addition be informed of the
possibility of persistence of pelvic pain and the
increased risk of repeated surgery following
STH. One study found that only 17% of physi-
cians provide such counsel to their patients [25].
In Egypt we have a different culture and most
of the patients will refuse STH because of the
risk of malignancy, even if small, and this what
I also concluded from patients who underwent
trachelectomy.

As regards surgery after subtotal hystere-
tomy, it needs specialized centers. Trachelecto-
my is difficult due to the presence of adhesions,
there is no uterus to pull on during surgery, also
you may need stinting of the ureters to prevent
its injury. In our study, we stinted 6 cases before
operation. Complications following this major
surgery were minor and need no surgical inter-
vention. Two patients required total pelvic ex-
centration that could have been avoided if total
hysterectomy was done during primary surgery.

Conclusions:

Trachelectomy is a safe procedure, especially
when performed at a specialized centre. Current
data do not support many of the benefits of
subtotal hysterectomy. The risk of developing
cervical stump cancer must be investigated
before offering the procedure to a patient. Patient
agreement is mandatory. Subtotal hysterectomy
should be avoided if screening programs for
cancer of the uterine cervix are not available.

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