Pelvic abnormalities in hysterectomized patients-role of early postoperative ultrasonographic evaluation

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Summary

Objective: To assess the incidence of post-hysterectomy pelvic fluid collection in the early post operative period and to study its natural history.

Study Design: Cross-sectional, prospective, observational study.

Patients and Methods: The study sample comprised 36 consecutive patients undergoing hysterectomy for benign conditions in our department. All patients underwent two pelvic ultrasonographic examinations, the first on the third postoperative day and the second one year later. All postoperative complications were thoroughly evaluated.

Results: Thirty-two patients completed the study evaluations. Abnormal ultrasonographic findings were detected in 4 of them on the early postoperative scan. Three (9.4% of the sample) had pelvic fluid collections which persisted on the follow-up scan. The fourth patient had a simple ovarian cyst 4 cm in diameter which disappeared on follow-up. None of the patients with pelvic fluid collections had a febrile morbidity during the postoperative course.

Conclusions: Transvaginal ultrasonography can detect asymptomatic early postoperative pelvic fluid collections and enables conservative management, thereby reducing patients stress, medical costs, and the need for unnecessary interventions.

Key words: Hysterectomy; Pelvic collections; Ultrasound.

Introduction

Sonography has become an almost routine part of the gynecological follow-up of hysterectomized patients and is usually the preferred imaging tool in cases of suspected disease [1]. Recently, we conducted a cross-sectional observational study of the ultrasonographic findings in 100 hysterectomized patients remote from surgery [2]. Five patients had echo-free pelvic findings, indicating fluid collection. While fluid collection is not unusual following hysterectomy [3], its natural history is not well documented. The aim of the present study was to assess the incidence of post-hysterectomy pelvic fluid collection in the early postoperative period and to study its natural history by a follow-up ultrasonographic evaluation of the pelvic anatomy one year later.

Methods

A cross-sectional, prospective, observational study was conducted between January 1 and May 31, 1997 in the gynecological ward of Rabin Medical Center. The study population comprised all consecutive patients undergoing hysterectomy for benign conditions for whom detailed medical and gynecological histories were available. Signed informed consent was obtained from all participants prior to onset of the study.

Two ultrasonographic examinations were performed, the first on the third postoperative day while the patient was still hospitalized, and the second one year later. Both were done with the Echocee Ultrasound System (Toshiba, Tokyo, Japan) with a 3.4 MHz and a 6 MHz abdominal and vaginal transducer, respectively. In all cases, a transabdominal sonogram with a full bladder [4] was followed by a transvaginal examination with an empty bladder. All masses detected underwent morphological and structural analysis, and the echogenic content was categorized as clear, opaque or mixed. The results of the early examination were compared to those noted one year later. Masses were considered unchanged if their location and dimensions remained constant.

All patients underwent routine postoperative care by the attending gynecologists who were blinded to the early postoperative ultrasonographic assessments. All postoperative complications were thoroughly evaluated.

Results

Among the patients undergoing hysterectomy for benign conditions during the study period, 36 gave signed informed consent to participate in the study. Four of them failed to return for the follow-up scan one year later and were excluded from the analysis. It should be emphasized that no abnormalities were observed in the initial scans of the dropouts. Furthermore, all were reminded by telephone to return for the second scan, and all reported good health but unwillingness to undergo any further medical examinations.

The mean age of the 32 patients who completed the study was 47 years. The indications for surgery were: fibroid uterus (14 patients), menometrorrhagia (15 patients) and benign ovarian cyst (3 patients). Bilateral salpingo-oophorectomy (BSO) was performed in all patients aged 45 years or more (n=18).

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Table 1. — *Characteristics of pelvic fluid collection*

Patient No.	Type of operation	Echogenicity	
		Early ultrasound evaluation	One-year ultrasound evaluation
1	TAH + BSO	Clear	Clear
2	TAH + BSO	Mixed echogenicity	Clear
3	TAH	Clear	Clear

TAH = Total abdominal hysterectomy
BSO = Bilateral salpingo-oophorectomy

Abnormal ultrasonographic findings were detected in 4 patients on the initial postoperative scan. Three (9.4% of the cohort) had pelvic fluid collections which remained constant on follow-up. The echogenic content of the pelvic fluid collections are presented in Table 1.

In the fourth patient, who underwent hysterectomy without BSO, the initial ultrasonographic evaluation revealed a simple ovarian cyst 4 cm in diameter. The cyst had not been observed during surgery performed 3 days earlier. Follow-up scans performed one month and one year later showed no evidence of a cyst.

The postoperative course was uneventful in all but 5 patients (12.5%) with febrile morbidity; 3 due to urinary tract infections and 1 to a wound infection. None of the patients with fluid collection had a febrile disease or other postoperative complications.

Discussion

Hysterectomy with or without BSO significantly reduces the possibility of genital pathology, but does not eliminate it altogether [5]. While sonography is the main tool in the diagnosis and follow-up of these patients, the presence of postoperative adhesions, abnormal location of the ovaries, and displaced bowel may make its interpretation difficult. Indeed, one of the major drawbacks of sonography is that it does not always enable the differential diagnosis of benign and malignant pelvic findings. In a recent report, we examined 100 hysterectomized patients remote from surgery. Abnormal sonographic findings were detected in 13, leading to 5 operative procedures, 2 of which were for what proved to be benign conditions [2]. These patients underwent repeated medical examinations and serum CA-125 measurements, with their accompanying anxiety and cost. Furthermore, the most common finding in this report was fluid collection between adhesions (5 cases) or within the fallopian tubes (2 cases), which further complicated our diagnostic ability. These results prompted us to conduct the present study in order to assess the clinical importance of post-hysterectomy pelvic fluid collection and its natural course.

In the present investigation, we examined the patients very early after hysterectomy and again one year later, including detailed ultrasonographic mapping of the pelvic anatomy. The four cases of pelvic fluid collections all appeared early in the postoperative course and were unrelated to the development of febrile morbidity. Furthermore, while the content echogenicity changed after a year in some of them, the location and dimensions of the collections remained stable. Therefore, we suggest that pelvic fluid collections can be followed conservatively, thereby reducing patient stress, medical costs and the need for multiple interventions.

Although postoperative pelvic fluid or blood collections are frequently implicated in postoperative febrile morbidity there is little evidence to support this claim [6]. Our study, like that of Slavotinek *et al.* [3], found no correlation between postoperative pelvic fluid collection and a febrile course. By contrast, in the early transvaginal sonography study of Toglia and Pearlman [1] 9 of the 13 post-abdominal-hysterectomy patients (69%) with fluid collections had a febrile disease. The authors concluded that pelvic fluid collections are common after hysterectomy and affected women are at increased risk of infection and culf cellulitis. They also suggested that transvaginal sonography may facilitate the diagnosis of post-hysterectomy pelvic fluid collections which are not readily detected by pelvic examination. Although their overall rates of both postoperative pelvic fluid collection and febrile morbidity (34.2% and 31.6%, respectively) were higher than ours (9.4% and 12.5%, respectively), the incidence of non-febrile pelvic fluid collections was comparable (9.4% and 10.5%, respectively). Douglas drains, which are liberally used in our department to reduce postoperative febrile infection [7], were not mentioned by Toglia and Pearlman [1], but they routinely close the vaginal cuff, thereby adding to this morbidity. Furthermore, 27 out of 38 patients in the study by Toglia and Pearlman [1] underwent pelvic scans in the first 2 days after surgery, and 11 did so after 3 to 5 days. This difference may explain the increased incidence/overdetection of pelvic fluid collections above the vaginal vault, which in our patients, had enough time to drain or reabsorb.

Slavotinek *et al.* [13] also reported a high incidence (59%) of vaginal vault fluid collections on the first postoperative scan in 32 patients after hysterectomy. However, most of their affected patients (79%) had no significant pyrexia. In contrast to our observation, all collections detected on the early postoperative scans resolved or were smaller on follow-up, whereas two asymptomatic patients had vaginal vault fluid collections on follow-up.

In non-BSO patients the presence of both ovaries may account for the development of residual ovary syndrome (ROS). ROS is related mainly to further ovarian function and benign cyst formation and has a reported incidence of 0.89% to 3.38% [5]. In the present study, one non-BSO patient had an early postoperative simple ovarian cyst which was not observed during operation probably reflecting its functional nature. It is noteworthy that elevation in serum CA-125 levels led us in our previous study to perform surgery [2].

There is the issue of timing for the first sonographic evaluation to detect pelvic fluid collection. Since this examination does not add to the postoperative management, it may be delayed to the first ambulatory follow-up

visit, usually a few weeks later, thereby decreasing patient discomfort due to the introduction of a vaginal probe early after operation. This is especially true for transvaginal hysterectomy with vaginal colporrhaphies. Despite the small sample investigated here, we believe this policy is applicable to every post-hysterectomy patient.

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