

Ultrasonographic evaluation of hysterectomized patients with and without concomitant adnexectomy?

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Summary

Objective: To present our experience with the use of ultrasonography in the evaluation of hysterectomized patients.

Methods: The study group was comprised of 100 consecutive women referred to our ambulatory unit for pelvic sonographic evaluation between April 1, 1996 and March 31, 1997. Inclusion criteria were previous hysterectomy for a benign condition with or without concomitant bilateral salpingo-oophorectomy and available medical and gynecological histories.

Results: No significant difference was observed in the rate of abnormal ultrasonographic findings among the patients who had had bilateral salpingo-oophorectomy 5/50 and those who had not (8/50). There was also no significant difference in pelvic mass rate between the patients who were receiving hormone replacement therapy and those who were not. The sensitivity of sonography in our study was 100% and the positive predictive value, 84.5%.

Conclusions: Sonography is a useful diagnostic tool in the follow-up and management of post-hysterectomy patients.

Introduction

In a national statistical study, Wilcox *et al.* [1] reported that hysterectomy is the most common non-pregnancy-related surgical procedure performed in women in the United States. Hysterectomy with or without adnexectomy, significantly reduces the possibility of genital pathology, but does not eliminate it altogether [2]. 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 [3].

We present our experience with the use of sonography in the evaluation of patients after hysterectomy with or without concomitant bilateral salpingo-oophorectomy (BSO).

Methods

A cross-sectional, prospective, observational study was conducted between April 1, 1996 and March 31, 1997 in the outpatient gynecological clinic of a major health maintenance organization serving the Ramat-Gan metropolitan area. The study comprised 100 consecutive women referred to our ambulatory unit for pelvic sonographic evaluation. Inclusion criteria included patients who had had a hysterectomy for benign conditions (50 with and 50 without a concomitant BSO), for whom detailed medical and gynecological histories were available.

Ultrasound examinations were performed using an Echocee ultrasound system (Toshiba, Tokyo, Japan) with 3.5 MHz and 6.0 MHz abdominal and vaginal transducers, respectively. In all cases, a transabdominal sonography with a full bladder (Pardo *et al.*, 1993) was performed initially followed by a transvaginal examination with an empty bladder. All masses detected

underwent detailed morphologic and structural analysis. For inpatients with detected abnormalities, blood was drawn to determine serum Ca-125 level, and follow-up scans were scheduled at intervals of three weeks, two months and six months. Minimal duration of follow-up was six months.

Results

Mean age of the BSO and non-BSO groups was 65.7 and 57.4 years, respectively. Duration of menopause for the whole cohort ranged from 1 to 25 years. Thirty-five percent of the BSO and non-BSO patients were receiving hormone replacement therapy (unopposed estrogen in all cases). Indications for sonography for the whole cohort were routine follow-up (41%), unsatisfactory bimanual pelvic examination (20%), suspected pelvic mass (17%), abdominal pain (18%) and other reasons (4%).

No statistically significant difference was observed in the rate of abnormal ultrasonographic findings between the BSO and non-BSO groups (8 and 5 patients, respectively). Furthermore, there was no significant difference in pelvic mass rate between the patients who were receiving hormone replacement therapy and those who were not. The sensitivity of sonography was 100% and the positive predictive value, 84.5%.

BSO group

Abnormal ultrasonographic findings were detected in eight patients.

Five patients had echo-free pelvic findings, indicating fluid collection; three were receiving hormone replacement therapy, which was not discontinued. Since Ca-125 levels were within normal range and follow-up scans showed no change in mass dimensions or morphology, the patients were scheduled for regular follow-up for six months.

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Two patients had recurrent endometriosis. They had been receiving estrogen for six and four months. The addition of continuous progesterone to the hormone replacement regimen led to the disappearance of the lesions within three months.

Only one patient underwent exploratory laparotomy because of a pelvic mass. She had been treated for breast cancer ten years before and had since been disease-free. The mass proved to be a solitary metastasis and was resected. The patient was referred for chemotherapy.

Non-BSO group

Abnormal ultrasonography findings were noted in five patients.

Four patients underwent surgery, one for ovarian cancer, one for a simple ovarian cyst, and two for hydrosalpinx.

The last patient had typical sonographic findings of a corpus luteum; and normal ovarian structure was noted after one month on follow-up scan.

Discussion

In hysterectomized patients, the presence of postoperative adhesions, abnormal location of the ovaries, and displaced bowel may make pelvic sonographic interpretation difficult. Other abnormalities, such as fluid collection, liquid-filled fallopian tubes and enlarged lymphatic nodes, may also interfere. Therefore, it is essential that the clinician first obtain all the original preoperative medical and gynecological data, especially indications for surgery.

The most common finding in the BSO group was fluid collection between adhesions. While this is not unusual phenomenon following hysterectomy [4], its natural history is not well documented. Furthermore, the observed predilection of the BSO group for this finding is difficult to explain, though we speculate that it may be related to the greater lymphatic damage associated with bilateral adnexectomy. We suggest that such masses be carefully followed, and if no morphological changes occur and CA-125 levels remain within normal limits, no intervention is necessary.

Post-hysterectomy patients receiving hormone replacement therapy are not usually prescribed progesterone in order to prevent unwanted side-effects and especially changes in the lipid profile. Recently, however, McCluggage *et al.* [5] described a case of sarcoma arising in the site of pelvic endometriosis in a hysterectomized patient receiving unopposed estrogen and suggested that progesterone should be added to the hormone replacement therapy protocol. This notion was supported in our study, wherein addition of progesterone to the regimen of both patients with endometriosis alleviated the abdominal pain and led to regression of the lesions. This observation, which is in accord with other studies [5, 6], suggests that the hormone replacement therapy protocol for post-hysterectomy and BSO patients should contain both estrogen and progesterone.

In the non-BSO group, the presence of both ovaries may account for the development of residual ovary syndrome (ROS). ROS is mainly related to further ovarian function and benign cyst formation and has a reported incidence of 0.89% to 3.38% [2]. In our study, the sonographic diagnosis of the simple ovarian cyst was correct, but surgery was performed because the cyst did not regress on follow-up and the serum Ca-125 level was elevated.

The two cases of hydrosalpinx in the non-BSO group, found only on surgery, emphasize the limitation of sonography in hysterectomized patients. Normally, sonography can accurately detect parovarian cysts and tubal pathology [7, 8]. However, hysterectomy changes not only the location of the ovaries, but also their relationship to the tube and parametrium. Unfortunately, in our patients, the mass could not be referred sonographically to the ipsilateral ovary.

The relatively small sample size and lack of a randomized control group limit the findings of this study. Nevertheless, we do suggest that sonography is a useful diagnostic tool in the follow-up and management of post-hysterectomy patients. The sensitivity of sonography in our study was 100% and the positive predictive value, 84.5%. These rates are similar to those reported for sonography in non-hysterectomized patients [9].

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