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Case Report

Effects of Endometrial Ablation on Treatment Planning in Women With Endometrial Cancer

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ABSTRACT To evaluate effects of endometrial ablation on the staging and treatment planning of postablation endometrial cancer. After authorization from the institutional review board, we performed a retrospective chart review of patients with a history of endometrial ablation and a subsequent diagnosis of endometrial cancer from July 2006 to December 2013. The information obtained included patient's age at time of cancer diagnosis, pre-ablation endometrial biopsy histology, dilation and curettage histology at time of ablation, endometrial biopsy-to-ablation interval, ablation-to-hysterectomy interval, final pathologic diagnosis, Fédération Internationale de Gynécologie et d'Obstétrique (FIGO) staging, and treatment recommendations for adjuvant therapy. The histopathology was examined by a gynecologic pathologist. The National Comprehensive Cancer Network guidelines were applied to determine need for adjuvant therapy. Six of 490 (1.2%) patients with endometrial cancer were identified to have an antecedent ablation. Mean patient age was 48.2 years (range: 40–53). The time interval from office pre-ablation endometrial sampling to ablation ranged from 1 to 17 months. Four patients (67%) had an undetected endometrial cancer at the time of ablation, despite having benign pre-ablation histology. Following surgical staging, 4 patients (67%) had no evidence of residual carcinoma, and 2 (33%) had evidence of endometrial adenocarcinoma grades 1 to 2. There was no evidence of myometrial invasion in all cases, and a FIGO stage of IA was assigned. No adjuvant therapies were indicated. There have been no documented cancer recurrences, with a follow-up range from 16 to 52 months (average 30.2). Endometrial ablation artifact does not appear to hinder evaluation and treatment planning in the presence of endometrial cancer. Journal of Minimally Invasive Gynecology (2015) ■, ■–■

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Ten to 35% of women experience heavy menstrual bleeding [1]. Endometrial ablation has emerged as a common treatment for many patients [2]. Ablation serves as an alternative to hysterectomy for the treatment of menorrhagia by scarring the endometrium using either hydrothermal or radiofrequency techniques. Endometrial ablation represents approximately 60% of procedures performed to treat menorrhagia [3]. An ablation procedure is indicated for menorrhagia due to benign causes in premenopausal women for whom childbearing is complete [4]. A known or suspected endometrial carcinoma or a premalignant condition of the endometrium is a recognized contraindication to the procedure [4].

Endometrial ablation should not be used as treatment for women with undiagnosed uterine bleeding. An undetected endometrial cancer could be obscured by scarring of the endometrium, and proper staging could be hindered. In addition, little is known about patients who could develop endometrial cancer remote from their ablation procedure. Because endometrial ablation is a relatively new technology, its effects on staging and treatment of

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subsequent endometrial cancers are unknown [5]. The purpose of this study is to evaluate if endometrial ablation alters or limits the staging and treatment planning of subsequent endometrial cancer.

Methods

This study was approved by the St. Francis Hospital and Medical Center Institutional Review Board. The hospital's health information management database was evaluated to provide a series of patients with a history of endometrial ablation and a subsequent diagnosis of endometrial cancer from July 2006 to December 2013. A cross encounter of events was performed using Current Procedural Terminology procedure codes for the endometrial ablation procedure as an initial encounter, followed by the *International Classification of Disease-Ninth Revision-Clinical Modification* diagnosis code for endometrial cancer as a subsequent encounter.

Each case was evaluated for initial endometrial histology before ablation, elapsed time from the biopsy to endometrial ablation, whether endometrial curettings were obtained at the time of ablation, time from ablation to hysterectomy, patient's age at the time of cancer diagnosis, and endometrial cancer stage. Uterine pathology was examined by a single gynecologic pathologist. Histology characteristics of ablation artifact depth, cancer depth of myometrial invasion, lymphovascular invasion, and cervical involvement were recorded. Treatment for each patient was assessed for compliance with National Comprehensive Cancer Network (NCCN) guidelines [6].

Results

Four hundred ninety patients with diagnosed endometrial cancer were referred to the Division of Gynecologic Oncology, St. Francis Hospital and Medical Center. A total of 6 cases with prediagnosis ablation procedures were identified for study. Mean age was 48.2 years (range: 40–53 years) at the time of cancer diagnosis. Ablation was performed using thermal techniques in 4 cases, radiofrequency in 1 case, and unknown in a single case. The initial endometrial histologic diagnosis before an ablation procedure is listed in Table 1. Benign histology was documented in 4 cases, simple hyperplasia without atypia in 1 case, and 1 case was unknown. Women underwent their ablation procedures at varying time intervals from the initial biopsy, ranging from 1 to 17 months. At the time of the ablation, endometrial curettage performed immediately before ablation revealed grade 1 endometrial adenocarcinoma in 4 women (cases 1–4), despite each having benign pre-ablation histology. These women underwent hysterectomy and surgical staging within 3 months of the ablation. The remaining 2 cases (cases 5 and 6) were diagnosed with endometrial cancer remote from their ablation procedure at 34 and approximately 60 months afterward.

Following the diagnosis of endometrial cancer, surgical staging was performed in all 6 cases. Table 2 shows the final uterine pathology, including tumor characteristics. The first 4 cases had no evidence of residual carcinoma, and their final pathology diagnosis was endometrial adenocarcinoma, unless not otherwise characterized. The remaining 2 cases were endometrial adenocarcinoma grades 1 and 2, respectively. In all 6 cases, there was no evidence of myometrial invasion. There was no lymph node metastasis in the 4 cases that had lymph node sampling. Lymphovascular invasion was negative in 5 cases and was indeterminate in the remaining case. In all cases, the pelvic washings were negative, and there was no evidence of cervical involvement. All 6 cases were determined to have Fédération Internationale de Gynécologie et d'Obstétrique stage IA endometrial cancer, with cancer confined to the uterine corpus and <50% myometrial invasion. At present, there are no documented cancer recurrences, with a follow-up range from 16 to 52 months, and an average of 30.2 months.

The histologic appearance and extent of myometrial changes after ablation were characterized. In the cases in whom hysterectomy was performed within 3 months of ablation, the ablation artifact included fibrinoid necrosis,

Table 1

Timing of office and ablation procedures and histology results

Case #	Age (yrs)	Office endometrial biopsy pre-ablation	Time from endometrial biopsy to ablation (mos)	D&C histology at ablation	Time from ablation to hysterectomy (mos)
1	40	Benign	3	Endometrial adenocarcinoma (grade 1)	3
2	48	Benign	1	Endometrial adenocarcinoma (grade 1)	2
3	50	Simple hyperplasia, no atypia	11	Endometrial adenocarcinoma (grade 1)	2
4	51	Benign	17	Endometrial adenocarcinoma (grade 1)	1
5	47	Benign	1	Benign	34
6	53	Unknown	Unknown	Unknown	60 (approx.)

D&C = dilation and curettage.