

Uterine adenosarcoma in a patient following microwave endometrial ablation: a case report

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Summary

In Japan, almost six million women are said to be suffering from menorrhagia. Microwave endometrial ablation (MEA) is a minimally invasive and effective surgical treatment for dysfunctional uterine bleeding using the application of microwave energy to the endometrium. Its popularity has been increasing over time in many countries because of its safety and simplicity. Recently, a number of cases of medical complications after MEA have been reported. Here, the authors present the first reported case of adenosarcoma diagnosed in a woman, five years after treatment with MEA. This finding highlights the need for gynecologists to use caution and perform close patient follow-up for a prolonged time period after MEA.

Key words: MEA; Adenosarcoma.

Introduction

Microwave endometrial ablation (MEA) is a procedure to treat heavy menstrual bleeding. MEA is used to treat the lining of the uterus and to stop or decrease the patient's menstrual flow. It is quick and easy to perform, requires minimal operative skill, preoperative preparation is straightforward, and the procedure can be performed at a same day surgery center [1]. Previously, the current research group found that MEA was useful in the control of menorrhagia and life-threatening uterine hemorrhage [2]. Recently, the authors identified a number of cases documenting successful MEA treatment of uterine bleeding due to endometrial carcinoma [3]. Thus MEA has several advantages over other treatments for menorrhagia, including hysterectomy and uterine artery embolization [4]. Complications have been reported after MEA. Up to now, the authors have performed MEA on more than 200 patients at Shimane University over the past ten years. They have experienced some complications, such as recurrence of menorrhagia, endometritis, myometritis, and rapidly enlarging leiomyoma following MEA [2, 5]. Das *et al.* observed the development of an acute pelvic abscess in a 44-year-old woman following MEA [6]. Here, the authors present the first worldwide case of uterine adenosarcoma detected in a woman, five years after MEA for menorrhagia.

Case Report

A 45-year-old Japanese woman (gravida 2, para 2) was referred to Shimane Medical University hospital in August 2011 with a chief complaint of excessive menstruation and severe anemia. The

patient had a ten-year history of hypermenorrhea. Her hemoglobin level was low (8 g/dl; normal range, 11.4–14.6 g/dl) prior to presenting to this gynecological department and she had often been treated with intravenous iron therapy in a private medical hospital, as she could not take iron supplement pills due to stomach irritation and heartburn. A diagnostic work up was initiated to detect the possible cause of excessive menstruation. She was diagnosed with an endometrial polyp by MRI (Figure 1). Endometrial malignancy was ruled out by diagnostic imaging (MRI and TVUS) and cytology. The endometrial polyp was resected via resection and MEA was performed in September 2011. MEA was performed under spinal anesthesia. Permission to perform MEA was obtained from the ethical committee of the Shimane University hospital. The total operation time was 26 minutes and the estimated blood loss was of insufficient volume to record. There

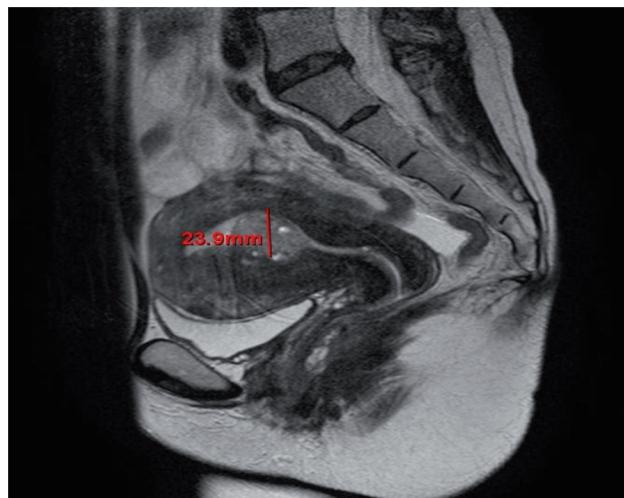


Figure 1. — MRI of the endometrium before MEA. T2-weighted imaging revealed an endometrial polyp (23.9 mm) in the uterus.

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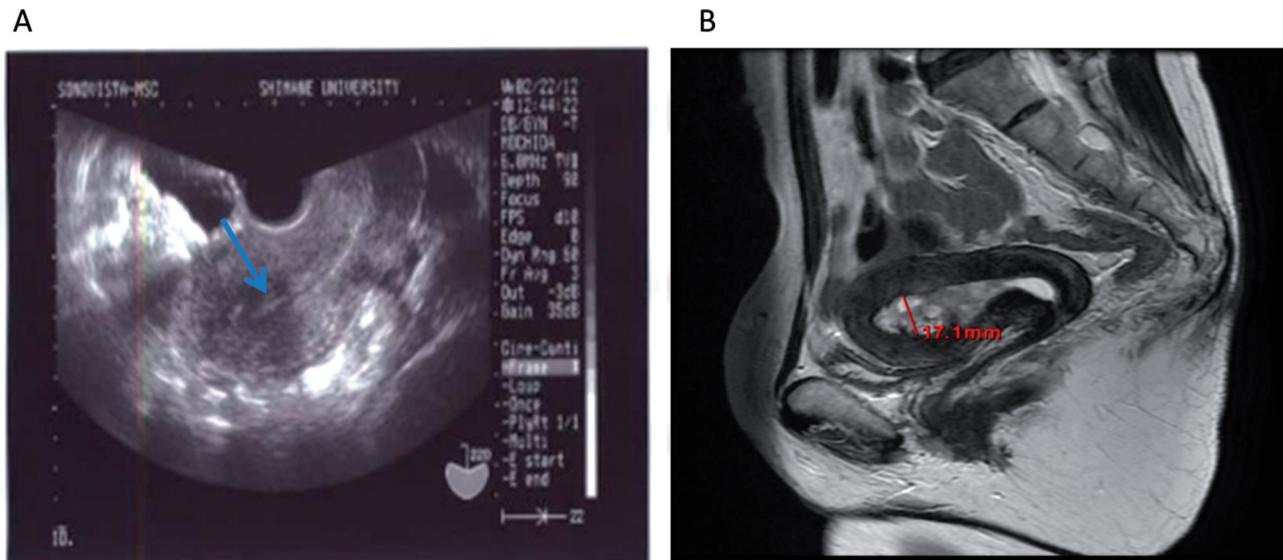


Figure 2. — (A) Ultrasound reveals a thin endometrium (2 mm) three months after MEA. (B) MRI reveals a thickened endometrium (17 mm) five years after MEA.

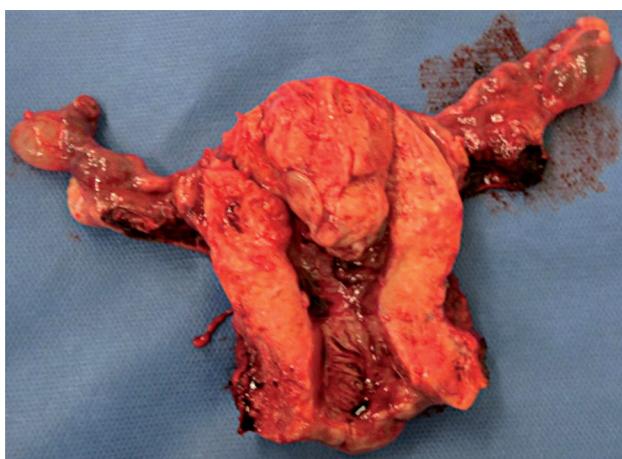


Figure 3. — Operative findings. Adenosarcoma is present in the uterus.

was no pre- or postoperative complications. Afterwards, the patient maintained a follow up program every six months in the present gynecological department. Upon examination on May 2017, tTVUS demonstrated thickening of the endometrium (17 mm). Cytology and histology could not be performed due to narrowing of the cervical canal; instead, MRI was performed (Figure 2). MRI demonstrated an intrauterine tumor shadow; the differential diagnosis included Stage 1A endometrial cancer. The patient underwent laparoscopic modified radical hysterectomy, bilateral salpingo-oophorectomy, and pelvic lymph node dissection. Pathological examination revealed a Stage C (International Federation of Gynecology and Obstetrics 2008), pT1cpN0M0 adenosarcoma (Figures 3 and 4).

Discussion

MEA is a second generation surgical technique that is widely used to treat excessive vaginal blood loss, and it is generally a safe and effective procedure. However, rare but

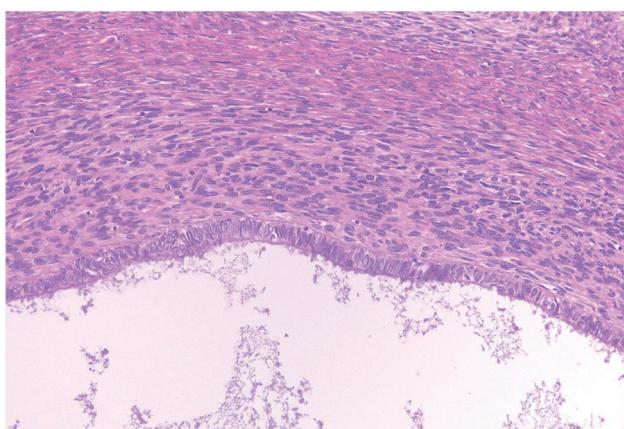


Figure 4. — Pathological examination. Adenosarcoma with high grade sarcomatous overgrowth.

serious complications may occur. Here, the authors reported the rare case of a patient diagnosed with adenosarcoma five years after MEA. They are not aware of any published data reporting the development of adenosarcoma following MEA.

The endometrium may become infected or inflamed during MEA. In a review, Howard T. Sharp explained that the incidence of infectious complications after endometrial ablation included the following: endometritis (1.4-2.0%), myometritis (0-0.9%), pelvic inflammatory disease (1.1%), and pelvic abscess (0-1.1%) [7]. Previously, the current authors experienced a patient with postsurgical intestinal heat damage after MEA that required emergency surgery [8]. Recent data have expanded the concept that inflammation is a critical component of tumor progression. Many cancers arise from sites of infection, chronic irritation, and inflammation. Inflammatory mediators include metabolites of

arachidonic acid, cytokines, chemokines, and free radicals. Chronic exposure to these mediators leads to increased cell proliferation, mutagenesis, oncogene activation, and angiogenesis. The ultimate result is the proliferation of cells that have lost normal growth control [9].

The development of adenosarcoma after MEA in the present patient could be due to persistent inflammation. The patient had been suffering from rheumatism and was treated with steroids for several years. Prolonged steroid use is known to dampen the immune response, which could provide another explanation for prolonged inflammation and the development of adenosarcoma.

MEA can be described as one of the great gynecological success stories, with excellent results. There are no published papers until now addressing the time limitation for follow up after MEA. Recently, the current authors diagnosed a patient with rapidly enlarging uterus three years after MEA [5]. The current report demonstrates that serious malignancy, adenosarcoma, can occur up to five years after MEA. This case, combined with previous cases in this hospital, serves as a reminder to gynecologist to ensure prolonged, close follow-up of patients treated with MEA.

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