Rapidly enlarged uterus following microwave endometrial ablation: a case report

K. Sanuki1, K. Nakayama1, K. Nakamura1, T. Ishibashi1, M. Ishikawa1, N. Ishikawa2, S. Kyo1

1Department of Obstetrics and Gynecology, 2Department of Organ Pathology, Shimane University School of Medicine, Izumo, Shimane (Japan)

Summary
Microwave endometrial ablation (MEA) is an effective treatment for menorrhagia and several reports have established its efficacy in treating menorrhagia. However, according to recent reports, relapse of menorrhagia can be one of the long-term clinical outcomes following MEA and often necessitates re-surgery. The authors present the case of a patient with severe abdominal pain for over a month due to a sudden enlarging myoma. Two and a half years prior, she had undergone MEA. Therefore, the patient needed an emergency hysterectomy. This is the first reported case of a rapidly enlarging myoma following MEA. Therefore, a patient who has undergone MEA must be followed up closely for at least three years.

Key words: MEA; Myoma; Menorrhagia; Relapse; Re-surgery.

Introduction
Menorrhagia is one of the most frequently reported gynecologic concerns. It is known that the second generation of microwave endometrial ablation (MEA) is a safer technique, easier to perform, involves shorter hospital stays, and can be performed under local anesthesia [1-4]. On the other hand, some complications have also been reported. Recently, it has been reported that younger women, particularly, need to be made aware of the higher risk of a subsequent MEA [5]. The present authors have performed MEA in more than 200 patients at their institution in the past ten years with some patients experiencing a recurrence of menorrhagia and endometritis [6]. The long-term outcomes of this procedure have been well known. Age > 48 years and > 4 myomas are independent risk factors for recurrence of menorrhagia or dysmenorrhea [7]. In patients with recurrences, the uterus enlarges gradually after MEA and there is no report of a suddenly enlarged uterus after MEA. Here, we report the case of a patient with severe abdominal pain for over a month, due to which she was referred to Shimane University Hospital. Laboratory examination indicated elevated white blood cell count of 10,690 WBC/µl and C-reactive protein value of 4.98 mg/dl. Emergency MRI revealed an extremely large denatured mass measuring 17.5×15.6×13.7 cm, while it was 10.6×8.3×7.5 cm one month prior (Figure 1). The abdominal pain was so severe that the patient had to undergo total abdominal hysterectomy and bilateral salpingo-oophorectomy (Figure 2). The abdominal pain resolved and she was discharged. Pathological examination revealed that the mass in the uterus was a leiomyoma. In this case, the smooth muscle cell bundles were more thickened compared with normal leiomyoma, due to venous dilation and marked edema secondary to circulatory disorder. Furthermore, degeneration of smooth muscle cells and bleeding, with hemosiderin, was also observed (Figure 3).

Case Report
A 50-year-old woman (gravida 2, para 2) underwent MEA two years and five months prior for menorrhagia because of enlarging myomas; her symptoms resolved after MEA. The present institution had obtained the approval of the Ethics Committee of Shimane University’s Medical Department to perform the procedure and the same committee approved this study. Written informed consent was obtained from this patient. The patient complained of a lower back pain fort one week and a fever of 39°C for three days, due to which she was referred to Shimane University Hospital. Laboratory examination indicated elevated white blood cell count of 10,690 WBC/µl and C-reactive protein value of 4.98 mg/dl. Emergency MRI revealed an extremely large denatured mass measuring 17.5×15.6×13.7 cm, while it was 10.6×8.3×7.5 cm one month prior (Figure 1). The abdominal pain was so severe that the patient had to undergo total abdominal hysterectomy and bilateral salpingo-oophorectomy (Figure 2). The abdominal pain resolved and she was discharged. Pathological examination revealed that the mass in the uterus was a leiomyoma. In this case, the smooth muscle cell bundles were more thickened compared with normal leiomyoma, due to venous dilation and marked edema secondary to circulatory disorder. Furthermore, degeneration of smooth muscle cells and bleeding, with hemosiderin, was also observed (Figure 3).

Figure 1. — (A) T2-weighted MRI before microwave endometrial ablation (MEA). The diameter of the myoma is 10 cm. (B) T2-weighted MRI two years and five months after MEA. The diameter of the myoma is 17 cm.
MEA is a quite effective method for treating menorrhagia. However, recently, the authors also identified that women younger than 48 years old undergoing the procedure have significantly higher rates of recurrence of menorrhagia and require re-surgery [7].

The authors presented the case of a patient who, following MEA, developed a rapidly growing myoma and required re-surgery. In this report, the authors attempted to elucidate why the uterus suddenly grew to a large size. Kanaoka et al. reported that in some cases the entire submucous myoma became necrotic after MEA and shrank in the following few months [8]. It was thought that hypoxia in the submucous myoma tissue, after the endometrium and adjacent myometrium becoming necrotic, may be the underlying cause. Most of the submucous myoma tissue with intact blood supply may be necrotized by microwaves. On the other hand, the myoma in this case enlarged rapidly after MEA. Pathological examination in this case revealed venous dilatation, edema, and hemorrhage in the myometrium widely. These findings suggest that the uterine endometrium was cauterized, and many uterine glands and microvessels were closed, leading to accumulation of blood and coagulation in the intrauterine cavity. As a result, the uterus became enlarged. Because of these changes, the circulation in the uterus was disrupted, resulting in edema, extensive exudative changes, hemorrhage, and necrosis.

Although, there have been reports of excellent results with MEA from multiple institutions in Japan [4, 9], the current case serves as a reminder to gynecologists to ensure extended follow-up in patients undergoing MEA.

In summary, the present case suggests that patients undergoing MEA should be warned about the possibility of this serious adverse result several months after MEA, and they need to be followed-up for at least three years with a high index of suspicion.

References