

# Complicated abdominal hysterectomy subsequent to uterine embolization for large fibroids

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## Summary

Uterine artery embolization (UAE) has increasingly been offered as a safe alternative method for treating uterine fibroids with major symptoms. By this technique patients could avoid surgical cure or definite treatment such as hysterectomy. UAE decreases the uterine blood supply to the tissues and this might predispose to intraabdominal adhesion formation as a result of tissue necrosis. A case of a complicated routine hysterectomy due to strong adhesions found intraabdominally during surgery is reported. Our patient had no predisposing factors for adhesions, but she had undergone UAE one year earlier for large fibroids and decided to proceed to surgical therapy when symptoms returned.

**Key words:** Uterine artery embolization; Fibroids; Adhesions; Hysterectomy.

## Introduction

Uterine fibroids are a common finding among women of reproductive age with an estimated incidence of 20–25% but their prevalence is estimated to be as high as 77% [1]. In recent years UAE has been offered as an alternative to surgical procedures or hormonal therapy and is associated with reduction in uterine volume and decrease in excessive uterine bleeding [2]. However, by decreasing the uterine blood supply this technique might predispose to intraabdominal adhesion formation as a result of tissue necrosis. It appears that the larger the myomas the higher the possibility of creation of dense adhesions since the necrotic tissue is also enlarged. Adhesions should be expected between the uterus and the surrounding organs like adnexes, small bowel, omentum and peritoneum and could complicate a routinely performed hysterectomy.

## Case Report

A 41-years-old patient presented at the Fibroid Clinic of our Unit complaining of menorrhagia and pressure symptoms associated with a large fibroid uterus. The patient was nulliparous with no obstetrical history and no previous abdominal surgery. Concerning gynecological history, one year earlier the patient presented with similar symptoms and was offered all the options for treating fibroids. She had no interest in infertility issues or future pregnancy but rejected abdominal surgery (myomectomy or hysterectomy) and decided to proceed to UAE. She did not present for follow-up, thus fibroid volume reduction was not estimated.

On clinical examination the uterus was enlarged with fibroids palpated. The patient mentioned that the symptoms returned six months after UAE and deteriorated the last month. Magnetic

resonance imaging (MRI) revealed multiple fibroids including two large myomas, one of which was situated in the lower segment of the uterus and the other at the uterine fundus (Figure 1). Unfortunately previous MRI findings were not available so as to compare the number and size of fibroids. After counseling, the patient decided to undergo hysterectomy considering her decision that future pregnancy be excluded.

Hysterectomy was started via a subumbilical midline laparotomy. As it was not possible to exteriorize the uterus, the incision was extended cephalad. Despite releasing relatively minor adhesions between the uterus and small bowel, it was still not possible to maneuver the uterine fundus into the laparotomy incision. Palpating the uterus inside the abdomen, we noted a solid, dense mass between the fundus and the peritoneum which was obviously restricting uterine mobility. Rather than extending the incision up to the xiphisternum, we decided to proceed to hysterectomy without freeing the uterine fundus. The surgery was performed with some difficulty. Once the cervix had been separated from the vagina, we were able to elevate the uterus towards the chest and free a mass of dense adhesions measuring approximately 8 x 2 cm which was attached to the fundal fibroid (Figure 2). Reviewing the patient's MRI films, we considered that the mass most probably corresponded to adhesions created around a large fundal fibroid following UAE. The patient's postoperative course was uneventful.

## Discussion

Large fibroids do not seem to be a contraindication for UAE and these patients have similar response with respect to menorrhagia to their counterparts with small fibroids. Compared with surgical treatment the quality of life score of UAE at one year is similar [3]. However, large fibroids are more difficult to treat, while fibroid size (more than 10 cm) and volume are considered predictive factors for subsequent surgery after UAE [4, 5]. It is reported that 12 months after UAE, approximately 10% of patients undergo surgery, mainly hysterectomy [6].

It has been suggested that embolization of uterine myomas might result in tissue necrosis predisposing to

Fig. 1



Fig. 2

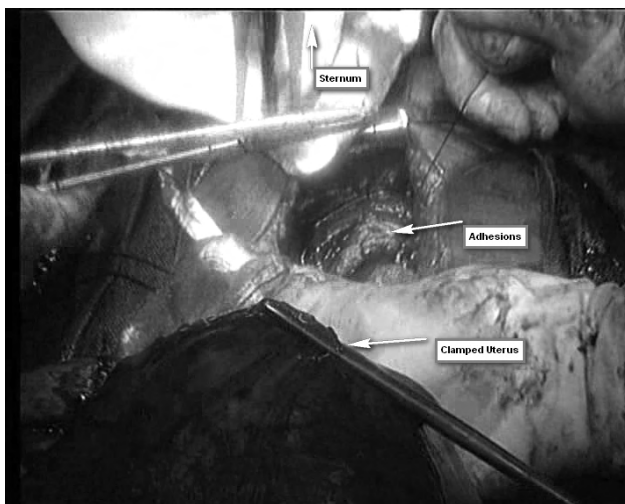


Figure 1. — Magnetic resonance imaging revealing multiple fibroids. The large myoma with hyperintense foci situated at the uterine fundus, corresponds to the area where the strong adhesion was found.

Figure 2. — Site of dense adhesion. This strong adhesion existed between the uterine fundus and the peritoneum. At the bottom we notice the freed bulky uterus with clamped fundus. (The chest of the patient is mentioned for orientation).

adhesion formation. Although other causes may operate in some patients (e.g., previous surgery, adnexal torsion, infection, malignancy), it is widely felt that embolization of large subserous myomas itself can play a role in the development of de novo intraabdominal adhesions between the uterus and the adnexae, bowel, peritoneum and/or omentum through thrombosis and necrosis of the tissue [1].

A recent case controlled study [6], has confirmed the impression gained from isolated case reports [7, 8] and concluded that UAE can be associated with the formation of intraabdominal adhesions, with large myomas in particular predisposing to such adhesions due to increased volume of the necrotic area.

Our patient, who had no risk factors for intraperitoneal adhesions apart from having undergone UAE a year earlier, was found to have extensive adhesions involving the uterus, including very dense adhesions on to a large fundal fibroid. As a result we carried out the hysterectomy with the uterine fundus still adherent inside the abdomen and only freed the fundus by ultimately reflecting the uterus towards the sternum to gain access to the fundal adhesion. With this surgical maneuver there were no serious sequelae (incision extension or severe bleeding), but it has to be noted that the operation was completed with considerable difficulty.

Our experience, and that of others, shows that women who undergo hysterectomy after UAE, especially in the presence of relatively large fibroids, should be warned about potential surgical problems during surgery such as

extension of the initial incision, bleeding, and bowel injury, as a result of the development of UAE-associated adhesions.

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