Parasitic Leiomyosarcoma After Myomectomy

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Whereas in decades past, hysterectomy was seen almost as a panacea for any uterine affliction, including leiomyomas [1], attention has been paid more recently to the development of pharmaceutical agents (medical treatment) [2–4] and procedures that are less invasive [5,6] or that are performed by routes that incur less morbidity than conventional laparotomy [7]. Frequently, such procedures are designed to retain the uterus. Therefore, organ-preserving intervention has become more and more popular [8]. Myomectomy may be one of the most frequently used strategies in the management of women with symptomatic uterine myomas [9]. However, malignant-type leiomyosarcomas should be kept in mind during the pathologic review, although the incidence is rare and the majority of leiomyosarcomas are diagnosed after hysterectomy or myomectomy [10,11]. Here, we present a case of leiomyosarcoma diagnosed from a myomectomy specimen from a 48-year-old woman.

A 48-year-old female, gravida 3, para 2, abortus 1, with a diagnosis of leiomyosarcoma based on a myomectomy specimen obtained through ultra-minilaparotomy (UML) [12], delayed undergoing complete staging surgery for 1 month for personal reasons. Computed tomography before the staging surgery failed to detect an abnormality. Operative findings showed a 2-cm parasitic mass located in the vesicouterine space, and a well-healed uterus. Complete staging surgery, including total hysterectomy, bilateral salpingo-oophorectomy, lymph node sampling and multiple random biopsies, was performed. The final pathology showed no residual malignant tumor within the uterus, except for the diagnosis of a metastatic leiomyosarcoma on the above-mentioned mass. Postoperative adjuvant pelvic radiation with 2,800 cGy was given. At the time of writing, the patient had been well and without recurrent disease for more than 3 years.

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Three important issues arise in this case report. One is how to distinguish between a leiomyoma and a leiomyosarcoma prior to the use of organ preservation therapy, including myomectomy. Although many imaging studies, including high-resolution ultrasound, computed tomography and magnetic resonance imaging, or even positron emission tomography, have been tried, none of them can achieve satisfactory sensitivity or specificity, partly because of the small sample size [11,13]. Second, what is the next step when patients are diagnosed with leiomyosarcoma on a myomectomy specimen? Here, there is little doubt; hysterectomy and bilateral salpingo-oophorectomy are considered the standard therapy for leiomyosarcoma of the uterus [14]. However, for young nulliparous women desiring pregnancy, clearly the patient and family must both be made aware of the problem and be involved in the final decision [15]. A strict follow-up and an obliterative procedure at the completion of reproductive life may be a viable alternative if the patient understands and accepts the risk [15]. Third, the physician must be aware of the potential occurrence of parasitic leiomyosarcoma or leiomyomatosis after myomectomy, because procedures that are less invasive than hysterectomy or exploratory laparotomy myomectomy can be used [15]. The real cause of disseminated leiomyomatosis is not fully understood, but it is believed to spread iatrogenically during surgery [16]. That is why there are more cases reported after myomectomy, especially laparoscopy and morcellation [17]. In this case, the appearance of parasitic leiomyosarcomas could be explained by pieces of myometrial tissue being left behind in the peritoneal cavity during myomectomy using the UML approach. In addition, rapid growth and dissemination of leiomyosarcomas can occur very soon after the original operation if it is incomplete, hinting that conservative therapy should be used with caution. However, no residual malignant leiomyosarcoma was found in the hysterectomy specimen in this case, which further supported the finding of previous studies that the acceptability of UML for myomectomy might be similar to that of conventional exploratory laparotomy for myomectomy [5,7].

We conclude that iatrogenic metastasis of leiomyosarcoma with rapid growth may occur in women who are treated with UML myomectomy, and re-staging surgery is recommended in these patients.

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