

## A Case of Fallopian Tube Adenofibroma: Difficulties Associated with Differentiation from Ectopic Pregnancy

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**ABSTRACT:** Benign solid tumors of the fallopian tubes are extremely rare and often difficult to differentiate from tumors associated with adjacent organs or from various inflammatory diseases. Here, we present a patient who was diagnosed with ectopic pregnancy, based on preoperative tests and intraoperative macroscopic findings, but was later diagnosed with a fallopian tube adenofibroma, based on histopathological evidence, and intrauterine pregnancy. Although initial pregnancy test results were positive, no gestational sac (GS) was seen in the uterus and the patient was diagnosed with an ectopic pregnancy and underwent emergency laparoscopic surgery. A 20-mm, fetus-like solid mass was noted inside the GS-like cystic tumor of the left fallopian tube. From histopathological findings, the lesion was identified as a serous fallopian tube adenofibroma. The baby was born healthy with no problems. This case report suggests that fallopian tube adenofibroma should be considered in the differential diagnosis of suspected ectopic pregnancies.

**KEYWORDS:** adenofibroma of the fallopian tube, ectopic pregnancy

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### Introduction

Inflammation-induced pseudotumors such as pyosalpinx and hydrosalpinx are occasionally found in the fallopian tube, but benign solid tumors such as myoma, are extremely rare. To date, only five reported cases of fallopian tube adenofibromas have been reported and only one case of fallopian tube adenofibroma accompanying pregnancy has been reported, worldwide.<sup>1</sup> From an anatomical viewpoint, preoperative differentiation of fallopian tube solid tumors from other solid tumors such as ovarian tumors, uterine myomas, or retroperitoneal tumors is difficult. Consequently, solid tumors of the fallopian tube are often discovered during surgery. Here, we present a patient who was diagnosed with ectopic pregnancy, based on preoperative tests and intraoperative macroscopic findings, but was later diagnosed with a fallopian tube adenofibroma, based on histopathological evidence, and intrauterine pregnancy. The patient has given consent for the publication of this report.

### Case

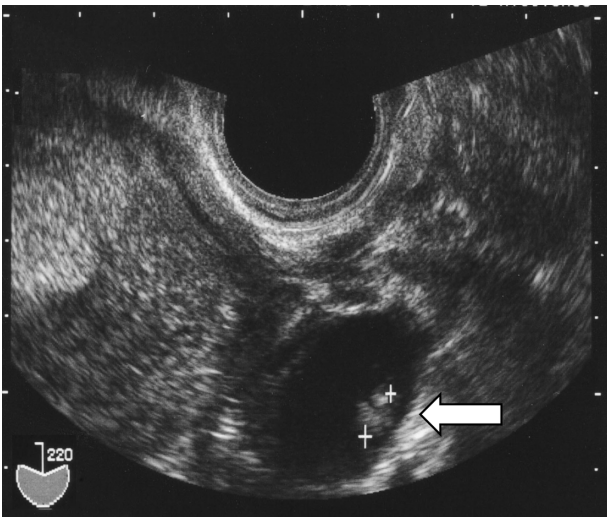
The patient was a 32-year-old woman with an irregular menstrual cycle and a previous menstrual period lasting 8 days (from November 29, 2002). Amenorrhea and pain in the lower left abdominal region prompted the patient to consult a neighborhood gynecologist. Although the result of a pregnancy test was positive, transvaginal ultrasonography did not reveal a gestational sac (GS) in the uterus. However, a cystic tumor containing a solid, fetus-like mass was observed in the left uterine appendage. Atypical genital bleeding was absent. Based on these findings, an ectopic pregnancy was suspected and the patient was referred to Iwate University Hospital the following day. The patient had been pregnant three times, two involved spontaneous abortions and one resulted in delivery. The patient's medical and family history did not present cause for concern. Pregnancy test results were positive, and transvaginal

ultrasonography did not reveal any symptoms normally associated with pregnancy, such as the occurrence of a GS in the uterus. However, a 28-mm cystic tumor (Fig. 1), containing a 6.5-mm, solid mass (Fig. 2), was observed in the left uterine appendage. Both side ovaries were observed by transvaginal ultrasonography. Urinary and blood human chorionic gonadotropin (hCG) levels were <1000 IU/L and 189 IU/L, respectively. Based on these test results, the patient was diagnosed with an ectopic pregnancy in the left uterine appendage; in response to the persistent pain in the lower left abdominal region, the patient was admitted for emergent laparoscopy. Swelling of the left fallopian tube ampulla was confirmed during surgery (Fig. 3), and with a diagnosis of ampullary tubal pregnancy, linear salpingostomy and evisceration were performed. A 20-mm, fetus-like, solid tumor was observed inside the cystic tumor

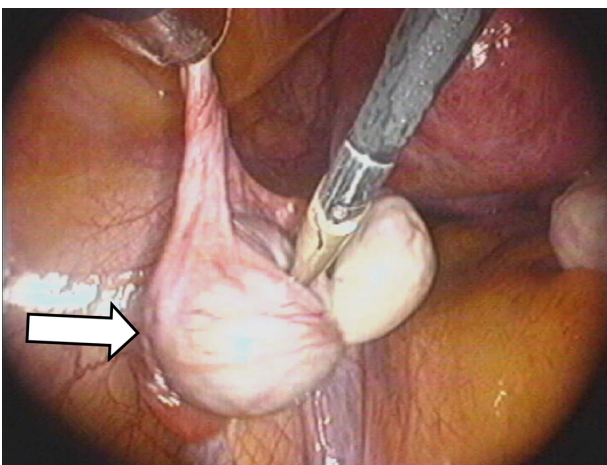
(Fig. 4). Postoperatively, the patient recovered well and was discharged 5 days after surgery. Since chorionic villi were not seen macroscopically in the resected mass, we carefully checked up the level of hCG value. However, 7 days after surgery, urinary (1800 IU/L) and blood (2289 IU/L) levels of hCG were elevated compared to preoperative values. Furthermore, transvaginal ultrasonography, performed 16 days after surgery revealed a 25-mm GS in the uterus as well as fetal heartbeats. Histopathological observations of the excised tumor confirmed adenofibroma of the left fallopian tube. At the insistence of the patient and her spouse, the pregnancy continued to term and a 3394 g baby girl was vaginally delivered at 39 weeks gestation. The baby was born healthy, with mother and infant discharged 6 days after delivery. The infant's post discharge condition was satisfactory.

### Microscopic Investigation

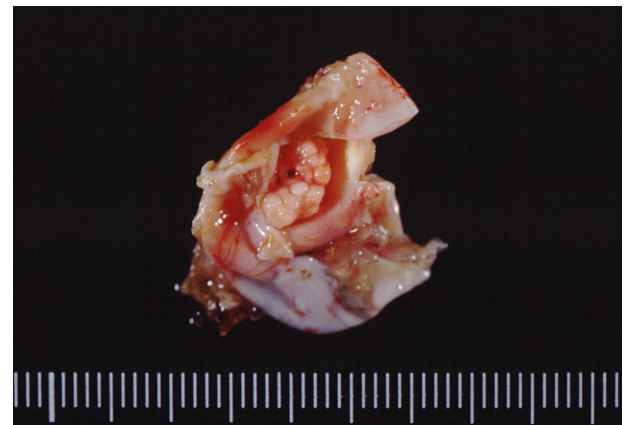
The tumor was firm, with a cauliflower-like surface. Microscopically, it was papillary in appearance and composed of fibrous tissue containing scattered glands. Chorionic villi were not seen macroscopically in the resected mass. (Fig. 4).



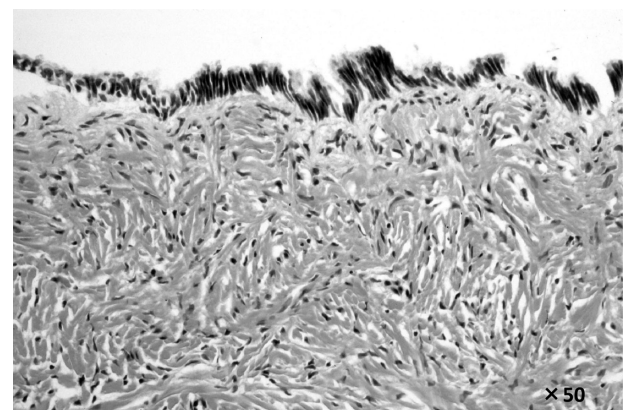
**Figure 1.** Transvaginal ultrasonography: A 6.5-mm solid mass is seen inside the cystic tumor in the left adnexa uteri (arrowhead).



**Figure 2.** Laparoscopic findings: A swollen ampulla of the left fallopian tube is seen on the left side of the forceps (arrowhead). The left ovary is seen on the right side of the forceps.



**Figure 3.** Macroscopic findings of the excised tumor: Inside the excised cystic tumor, a 20-mm, fetus-like solid mass is seen.



**Figure 4.** Microscopic view of the papillary adenofibroma of the left fallopian tube (hematoxylin and eosin staining, ×50).



## Discussion

The present case illustrates the difficulties associated with preoperative diagnosis of early-stage ectopic pregnancy, as well as the fundamental necessity of histopathological examination before a diagnosis can be confirmed. Of the various tumors associated with the female reproductive system, benign and malignant tumors of the fallopian tube are extremely rare.<sup>1–3</sup> Most fallopian tube adenofibromas are considered to be benign mixed Mullerian tumors, analogous to those of the ovary.<sup>2,4</sup> Consequently, fallopian tube tumors are often very difficult to diagnose, preoperatively. Because of their sub-epithelial location in the fallopian tube, the tumors may be misdiagnosed as ectopic pregnancies during ultrasonography, as in the present case.<sup>1</sup> Overall, most fallopian tube tumors are discovered accidentally during surgery. There have only been six reported cases of fallopian tube adenofibromas, and only two cases of accompanying pregnancy,<sup>1</sup> one of which accompanied an ectopic pregnancy.<sup>5</sup>

In the present patient, transvaginal ultrasonography did not reveal a GS in the uterus, despite a positive pregnancy test. In addition, GS-like changes in the left uterine appendage were marked, and the patient had pain in the same area. Given these symptoms alone, preoperative suspicion of any condition other than ectopic pregnancy would have been extremely difficult. Furthermore, as intraoperative macroscopic examination of the lesion in the left fallopian tube ampulla revealed that it was fetus-like in appearance, we were convinced that the patient had an ectopic pregnancy (ampullary tubal pregnancy) until the histopathological findings were available. However, even after surgery, urinary and blood levels of hCG continued to increase, and a GS and fetal heartbeats were confirmed. A histopathological examination confirmed a left fallopian tube adenofibroma accompanying an intrauterine pregnancy.

This diagnosis created a highly stressful clinical situation for the patient and her spouse, both of whom were very desirous of having children. Upon confirmation of the intrauterine pregnancy, they were apprehensive to terminate the pregnancy, since around 4 weeks of pregnancy encompasses organogenesis and is thus the most crucial with regard to structural malformations.<sup>6,7</sup> After several meetings, they decided not to terminate the pregnancy, and the patient gave birth to a healthy, full-term baby girl by vaginal delivery. The effects of many drugs on early-stage pregnancy have not been clarified, and clinical situations like the present case are difficult to manage.

Uterine curettage is one of the recommended techniques for distinguishing incomplete abortion from ectopic pregnancy<sup>8</sup> and also uterine evacuation by dilation and curettage is a useful diagnostic aid for women with nonviable of unknown location.<sup>9</sup> However, in the present patient, transvaginal ultrasonography, performed by the previous gynecologist, showed features typically associated with ectopic pregnancy; no other evidence contradictory to this diagnosis was noted. Furthermore, since the patient did not show genital bleeding, and also chorionic villi were not seen macroscopically in the resected mass, we believed that curettage would not be necessary to rule out an incomplete abortion. We were certain that the present patient had an ectopic pregnancy until histopathological findings of the excised tumor confirmed fallopian tube lesion adenofibroma accompanied by normal pregnancy. This case report suggests that, in cases of diagnosed ectopic pregnancy, adenofibroma of the fallopian tube should be considered in the differential diagnosis

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## Author Contributions

Wrote first draft of the manuscript: A Fukushima. Contributed to the writing of the manuscript: T Shoji. Agreed with manuscript result and conclusions: S Tanaka. Made critical revisions and approved final version: T Sugiyama. All authors reviewed and approved the final manuscript.

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