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Adenomyosis-surgical treatment for women's infertility Laparotomy with Osada technique

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ABSTRACT

Introduction: Adenomyosis became challenging in the gynecological field and healthcare economic aspect. The prevalence of adenomyosis is widely ranged in different countries. Infertility is one of the frightening complications. Thus a radical adenomyosis tissue removal method using the *triple-flap* (the Osada technique) could be done. Using this technique the adenomyosis tissue can be removed as much as possible while maintaining normal uterine function. Thus, in this case, report, we performed a woman diagnosed with adenomyosis underwent the surgery with Osada technique.

Case description: A 30-year-old woman went to the medical care of Kasih Medika. She has been married for 4,5 years and did not have any children. She had a history of abdominal pain every menstruation, and it has persisted since 2 months ago even though not on the menstrual schedule. Transvaginal sonographic examination revealed a diffusely enlarged uterus and thickening of the uterine wall. A laparotomy is performed using the Osada technique (*triple flap*). After that, around 1 month after surgery, the patient will undergo an ultrasound examination and the patient will undergo the GnRH agonist therapy (Tapros) 3 times.

Conclusion: Adenomyosis is one of the challenging diseases. Adequate treatment must be done to minimize the infertile probability Laparotomy with the Osada technique could be done. Infertility examination in both couples also must be done. Undergoing the GnRH agonist therapy also can give a better result for the patient.

Keywords: Adenomyosis, GnRH agonist therapy, laparotomy, Osada technique.

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INTRODUCTION

Adenomyosis is a condition in which endometrial tissue in the form of a functioning presence invades the myometrial lining.¹ This case became challenging in the gynecological field and healthcare economic aspect. The prevalence of adenomyosis is widely ranged in different countries. It has been reported around 20% to 30%.² Another study established that 16%-62% of women with adenomyosis underwent hysterectomy or other surgery.³ Nowadays, adenomyosis was found in women younger than 40 years old (20%). The presentation gets higher in line with increasing ages, such as 80%

among 40-50 years old.⁴ Age, multiparity, uterine surgery history, smoking, ectopic pregnancy, antidepressant drug consumption, mental health issues such as depression, history of tamoxifen treatment, and also the clinical phenotype of adenomyosis have been reported as risk factors in this case. The heterogeneity factors that might contribute become one of the reasons this disease has varieties prevalence in each country.²

Inappropriate endometrial tissue proliferation within the myometrium leads to symptoms through a variety of mechanisms.⁵ Adenomyosis is characterized by menorrhagia, pelvic pain, and dysmenorrhea.² Severe adenomyosis

results in infertility, severe dysmenorrhea, and hypermenorrhea. The most frequent symptoms in the remaining two-thirds are menorrhagia (50%), dysmenorrhea (30%), and metrorrhagia (20%). Dyspareunia may also be a complaint.⁴

One of the most feared complications is infertility. Few studies report a prevalence of 8% and 24% experiencing infertility after diagnosis with adenomyosis.³ If the nonsurgical diagnoses, such as transvaginal sonography (TVS) and MRI, then it became possible, the role of adenomyosis in infertility and early miscarriage was recognized.⁴ Several mechanisms may lead to infertility in this case such as a dysfunction of the

uterine junction zone. Spontaneous abortion could lead to uterine junction dysfunction due to the enlargement of the uterus diffusely rather than mass related to uterus enlargement. Inappropriate therapy eradicates the adenomyosis.⁴ One of the suitable treatments for couples who want to have children soon is a radical adenomyosis tissue removal method using the *triple-flap* method to reconstruct the uterine wall has been invented by Dr. Hisao Osada which is also known as the Osada Technique (*triple-flap*). Using this technique the adenomyosis tissue can be removed as much as possible while maintaining normal uterine function. The operation can be performed using laparoscopic or laparotomy techniques. Adenomyosis resection provides a new and entrusted image for patients who wish to preserve their uterus. After that, the fertility workup (both husband and wife) was done by using intrauterine insemination (IUI) or IVF. It may increase the probability of pregnancy for women who suffer from adenomyosis.⁶ GnRH agonist treatment is also helpful after surgery for increasing the fertility rate. Another case report published a live birth rate after treatment with GnRH agonist (GnRH-a) for 5 months was first reported. Moreover, the cumulative 3-year clinical pregnancy rate and final successful delivery rate were higher in adenomyotic women who underwent conservative surgery with or without GnRH-a compared with those who received GnRH-a alone for 6 months.⁴ Thus, in this case, the report we performed on a woman diagnosed with adenomyosis, and the Osada technique was done to eradicate the adenomyosis tissue.

CASE DESCRIPTION

A 30-year-old woman went to the medical care of Kasih Medika. She has been married for 4,5 years and did not have any children. Thus, she planned to program her pregnancy. She had a history of abdominal pain every menstruation, and it has persisted since 2 months ago even though not on the menstrual schedule. Transvaginal sonographic examination revealed a diffusely enlarged uterus and thickening of the uterine wall. Because the patient was planning to pregnant laparotomy to eradicate it was done.

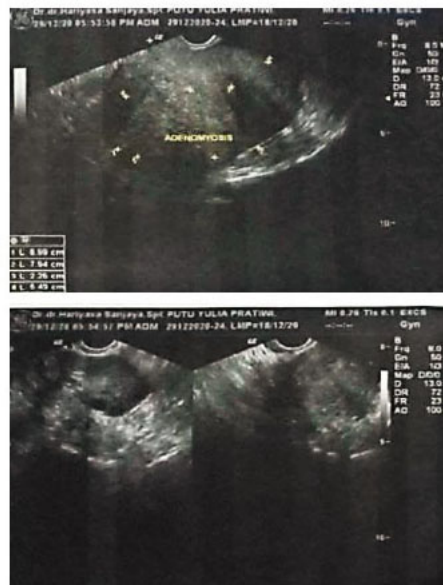


Figure 1. Ultrasound transvaginal examination.

To reduce uterine damage, a laparotomy is performed using the Osada technique (*triple flap*), otherwise, it can reduce pain. After the procedure was done, adenomyosis tissue was carried out to the pathological anatomy (PA) department to see the histological finding. The result of the histology examination did not show any signs of malignancy on the tissue and concluded adenomyosis. After that, around 1 month after surgery, the patient will undergo an ultrasound examination and the patient will undergo the GnRH agonist therapy (Tapros) 3 times.

DISCUSSION

Adenomyosis is a condition in which endometrial tissue in the form of glands that is still functioning invades the lining of the myometrium. Adenomyosis can be described as a diffuse invasion of endometrial elements into the uterine myometrium, as distinct from fibromyomatous growth; whereas, there is no clear boundary between normal uterine tissue and lesions.¹

The requirements of Adenomyosis surgery to maintain reproductive function namely, first, it is ideal if tubal patency can be maintained to allow natural pregnancy. Second, the uterine wall must be reconstructed properly to support the growth of the fetus after conception. Third, the uterine cavity must be preserved to allow for a natural pregnancy. In other



Figure 2. The adenomyosis tissue of the patient.

words, the operator must reconstruct the uterine wall which can endure the thin lines associated with the expansion of the uterine cavity. In the end, it results in the development of pregnancy.⁷ In this case a laparotomy with the Osada technique was done.

The surgical technique consists of excision of adenomyotic radicals (leaving the tissue edge 1 cm above the endometrium and 1 cm tissue edge below the serosal layer), followed by *triple-flap* uterine reconstruction. In reaching the peritoneal cavity transverse incision of small size was conducted. When the uterus is outside the peritoneal, a rubber tube about 6 mm wide is placed around the proximal cervix, then it is wrapped around the uterine blood vessels like a tourniquet to prevent bleeding during surgery. After the *triple-flap* reconstruction, the tourniquet can be removed because the overlapping

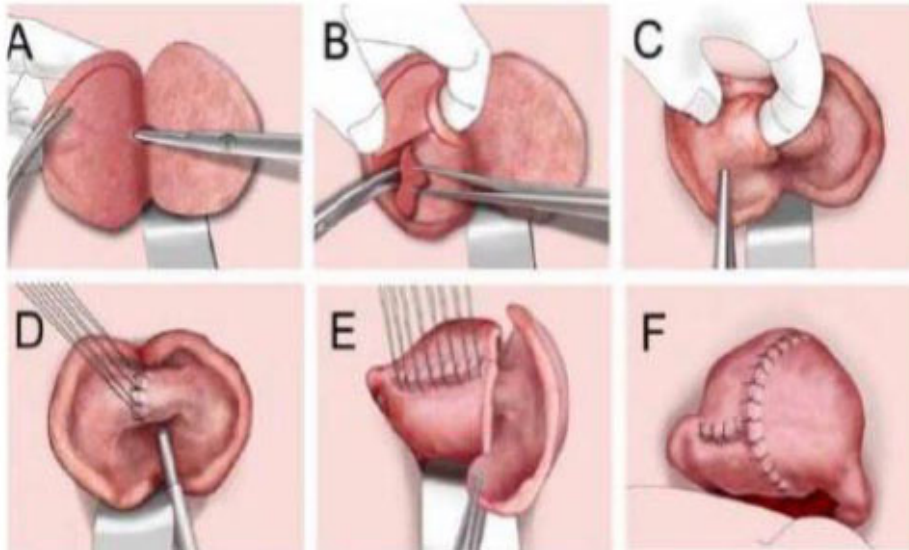


Figure 3. Osada technique (Triple Flap).^{8,9}

part will prevent further bleeding. In this way, the whole adenomyosis can be seen clearly. The endometrial cavity was opened to insert the index finger for protection and guidance during the excision of the adenomyosis tissue. The tissue is grasped using Martin's forceps and cut from the surrounding myometrium. This leaves the myometrium with the thickness of the serous layer above it and the endometrium layer below it, of 1cm. This action is done carefully to avoid damage to the fallopian tubes. Removal of the adenomyosis tissue results in an outer wall of the uterus composed of serous as well as a 1 cm myometrial lining and an inner uterine wall equal in thickness to the normal myometrium and endometrial line (Figures 3B and C). Then, myometrial defects should be closed using the *triple-flap* procedure, with care to avoid overlapping suture lines from the anteroposterior plane with many sutures interrupted using 2-0 vicryl (Figure 3E). Then the contralateral side of the uterine wall is carried over the first side and reconstructed in such a way as to cover the seromuscular suture line (Figure 3F). When uterine reconstruction is complete, the rubber tube that had been placed around the proximal tissue that acts as a tourniquet can be removed.^{8,9}

Based on a study conducted by Osada in 2011, observations ten years after the

Osada procedure involving 104 subjects showed excellent results in the likelihood of recurrence of adenomyosis. However, it showed a low percentage of pregnancy rate. Then the patient should do GnRH agonist therapy (Tapros) and continue to do ultrasound sonography examination to fulfill fertility.⁸ In A review of six studies that treat the patient with adenomyosis by using surgical treatments only 18,2% had a spontaneous pregnancy. The probability of pregnancy was getting higher after GnRH analogs treatment for 24 weeks. If we compare patients with surgical treatment only rather than with GnRH combination, it showed 40,7% the probability with therapy combination, and 15% for surgical only ($P=0,02$). Thus, we can conclude that, even though the surgery was an appropriate treatment for preparing the pregnancy but the combination with GnRH analogs remains to increase the probability of pregnancy.¹⁰

CONCLUSION

Adenomyosis is one of the challenging diseases. Adequate treatment must be done to minimize the infertile probability. Laparotomy with the Osada technique could be done. Infertility examination in both couples also must be done. Undergoing the GnRH agonist therapy also can give a better result for the patient.

DISCLOSURE

Conflict Of Interest

None.

Author Contribution

All of the author.

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