the Trocar
Official Online Journal of ISGE

Laparoscopy Myomectomy for Submucous Fibroid in Patient with Previous 3x Caesarean Section

Author: Indra Adi Susianto*,**, , Hervyasti Purwiandari**,

Affiliation: [1]University of Witten Herdecke; [2]Rheinlandclinics Dormagen

Keywords: pelvic floor; native tissue; laparoscopy

History: The Trocar Issue 1; 2020 (published online Nov.2020)

DOI: 10.36205/trocar1.2020002

Abstract:

Background : The most frequent benign tumours in females are fibroids which are muscular and classically seen throughout the middle and later fertile years of reproductive cycle. These tumours usually arise from the smooth muscle layer of the uterus. The surgical option for submucous uterine fibroid is either myomectomy or hysterectomy, but nowadays when women have the freedom to choose, we can offer the best for them.

Cases Presentation: Submucous uterine fibroids tumours are the fibroids situated on inner side of the uterus under the inner lining of the uterine cavity. This type of fibroid usually appears as a single fibroid. Transvaginal Saline infusion sonohysterography finding showed massive soft tissue mass with diameter 6,2 cm II Submucous fibroid >50% uterine wall invasion originating from uterine cavity type. This article demonstrates a case of a 42 year-old premenopausal patient diagnosed with heavy bleeding and a painful mass in lower abdomen with pain, gradually increasing abdominal size with fast growth over the past 6 months in conjunction with difficulty of breathing and significant anaemia. The Lasmar's pre-surgical score is 8, so an alternative approach non hysteroscopy technique, the laparoscopy myomectomy is considered .

Conclusions : Surgical excision of a fibroid tumour was done. Post operatively patient recovery was uneventful.

Keyword : Submucous uterine fibroids, Saline infusion sonohysterography Myomectomy, Premenopausal, Uterine wall invasion, The Lasmar Classification

INTRODUCTION

Uterine fibroids or Leiomyoma also known as fibroid tumours are a major cause of morbidity in women of a reproductive age [and sometimes even after the menopause] which usually arise in the uterus **[1]**.Even though they are structurally consisting of smooth muscle fibbers identical to the structural fibbers of the uterine wall; however, these fibbers are usually considerable thicker than in the normal myometrium of uterine wall. The shape of these benign tumours is usually round . These fibroids are usually restricted to the outer layer of the uterus. Some tumours known as submucosal fibroids are situated on inner side of the uterus under the inner lining of the uterine cavity. **[2]**. Clinical studies have confirmed that myoma of the uterus can cause infertility and anaemia. The results of a survey of patients with submucous myoma of the uterus showed that the disease can have a greater impact on the fertility and menstrual status of patients, and cause infertility, haemorrhagic anaemia and other symptoms. **[3]**.These structures are found in nearly half of women aged over forty; the incidence increases during the reproductive age and decreases after menopause. The most likely presentation of fibroids is by their effect on the woman's menstrual cycle or pelvic pressure symptoms **[4]**. The submucous uterine fibroids without symptoms are so not treated in most cases unless symptoms do arise. However, large submucous uterine fibroids often create surgical difficulties as it grows as a huge fibroid mass **[5].** The surgical option for submucous uterine fibroid is either myomectomy or hysterectomy, but nowadays when women have the freedom to choose the right choice the procedure we can offer them the best treatment. **[6]**. A well-managed and interesting case of a fibroid uterus is presented here

CASE REPORT

A 42 year-old woman with 3 previous Caesarean Sections, presented in a Anugerah Women & Children Emergency Ward with heavy bleeding and a painful lower abdomen. She had a clinical history of a series of blood transfusions and a very low count of Serum Fe level.

Regarding the menstrual history, menarche was at 13 years of age and she noticed menorrhagia since 6 months ago with regular blood transfusions.

On physical examination, she was severely anaemic and had a grossly visible large mobile uterus. On pelvic examination, she had a posteriorly displaced cervix with no lesions or inflammation. Her shortness of breath was likely due to the elevated diaphragm and severe anaemia. Her haemoglobin level was 6.2 gm/ dl.

Saline infusion sonography (SIS) (Fig 1) showed a massive soft tissue mass with diameter 6,2 cm originating from uterine cavity as type II submucous fibroid (FIGO Classification)

Fig 1 : Submucous Fibroid extended 2/3 of the uterus

Three dimension (3D) SIS showed tit to be a type II Submucous fibroid imbedded for >50% in the uterine wall (Fig 2). According to these SIS and 3DSIS we performed an evaluation with the Pre-Surgical score of Lasmar.

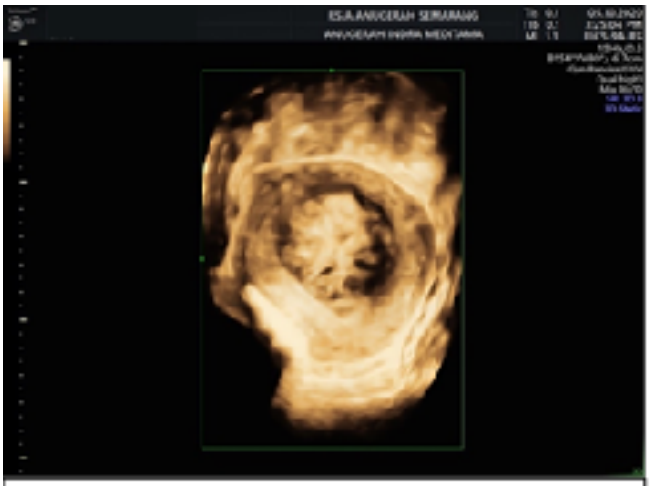

Fig 2 : The massive soft tissue mass with diameter 6,2 cm originating from uterine cavity

From the Lasmar's Pre Surgical Score, we found that the size of fibroid is > than 5 cm, sitting on the medium of the uterus extending more than 2/3 of uterus and penetrates > 50% of the myometrium. The final the pre-surgical score amounts to 8 [consider an alternative approach to hysteroscopy technique] with adhesion area in different regions due to the previous 3x caesarean section (Fig. 3).

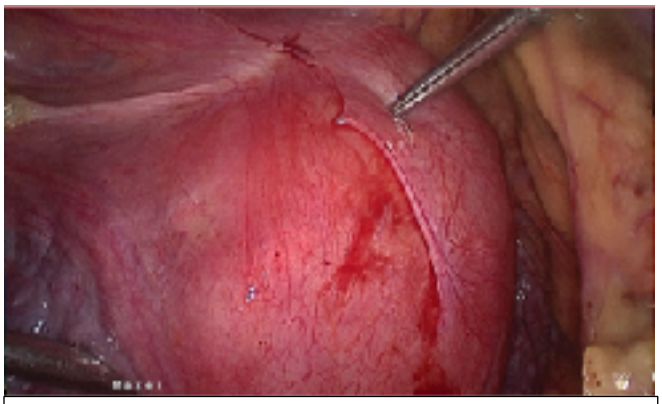

Fig 3. The bladder adhesion due 3x previous caesarean section

During the consultation with her and her husband it was concluded that myomectomy is the recommended treatment of uterine fibroids in women aged 40 years and above with infertility and who wish to become pregnant. If there is no need for further fertility preservation, hysterectomy should be offered, but the patient still insists in preserving her uterus because their wishes and faith. Therefore a myomectomy procedure was planned for her. After correcting the anaemia with 3 pints bags of packed cells 1 day before surgery, a laparoscopy myomectomy was done with HD 3 chip Laparoscopy integrated System (MAXER™). The uterus

was found to be hugely enlarged tightly occupying whole abdomen. The uterus was adherent to the sacrum on the posterior side, occupying whole of the pelvis with restricted mobility.

A midline incision in the uterus was performed. The fallopian tubes and ovaries could not be reached. A single mass of fibroid tumour was removed from the uterus. (Fig. 4)

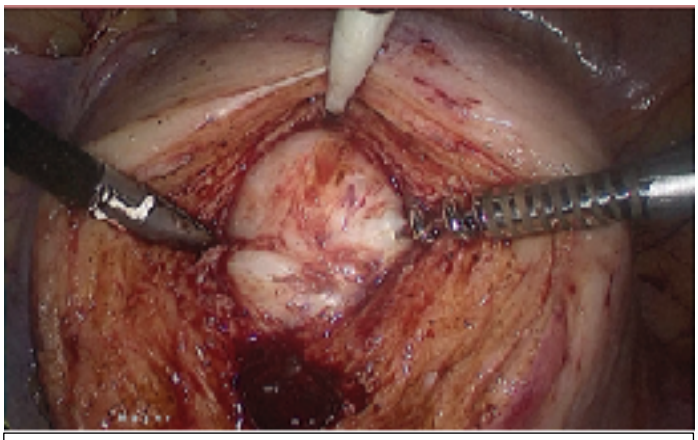

Fig 4. A Single mass fibroid sitting deep down the middle of 2/3 uterus

Although bleeding was average, one pint of blood transfusion was given during the operation. Histopathology demonstrated a leiomyoma (Fig 5).

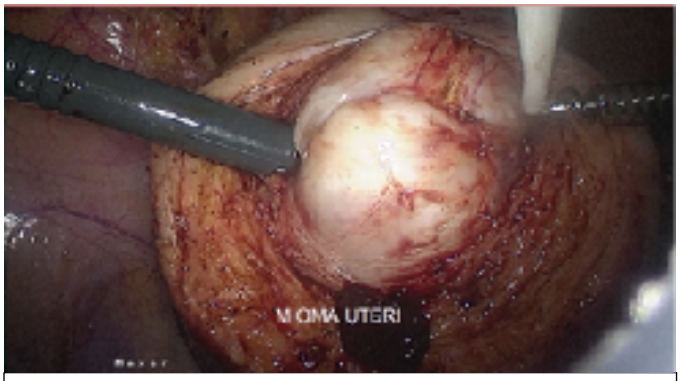

Fig 5. A confirmed leiomyoma from the histopathology result

After securing the bleeding from the tumour bed, a reconstruction of the uterus with 1.0 Knotless Tissue Control Suture (STRATAFIX™) was performed (Fig 6). The fibroid was morcellated using a Cordless Laparoscopic Morcellator (LiNA Xcise™) from the central camera port.

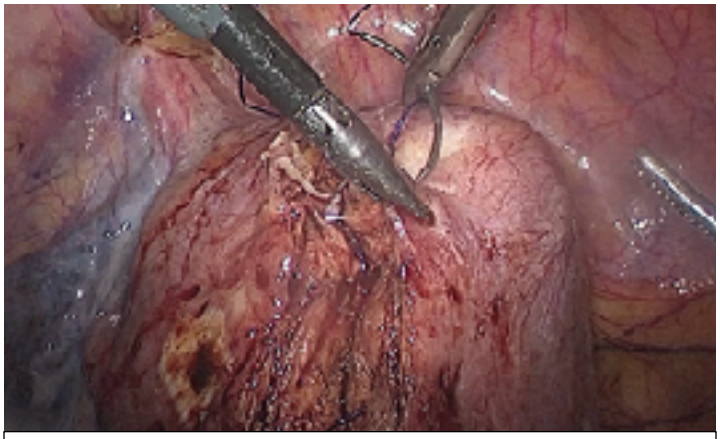

Fig 6. Laparoscopy reconstruction of the uterus with 1.0 Knotless Tissue Control Suture

DISCUSSION

Myomectomy has become a commonly performed surgical procedure in recent years as more women desire conservation of their uterus in the presence of symptomatic uterine fibroids **[7]**.

The results of a survey for patients with submucous myoma of the uterus showed that the disease can have a greater impact on the fertility and menstrual status of patients, and Fibroids who do cause infertility, haemorrhagic anaemia and other symptoms **[8]**. These fibroids most often result in irregular menstrual cycles, pain in pelvic region, and exerts pressure symptoms on adjacent tissues and organs **[9]**. Although the incidence rate of submucous myoma of the uterus is only 5–10%, these can cause more serious clinical symptoms, mainly excessive menstruation, prolonged menstrual period, shortened menstrual cycle and dysmenorrhea, symptoms that can also lead to secondary anaemia and infertility. The presence of fibroids may become live threatening in some cases when the pressure effects involve the urinary bladder, ureters and other neighbouring organs **[10]**.

Management of a patient with uterine fibroids is highly dependent on the anatomical position of the latter, the clinical conditions and the patient wishes. In many cases, the management of the fibroids carries surgical risks, and in some women, the fibroids with symptoms in the premenopausal age group are best left alone. Women without symptoms who have small fibroids but are close to menopause or who are trying to conceive should be offered conservative treatment with analgesics and haematinics.

SIS based imaging is usually used as a supplementary imaging modality for characterization of focal uterine masses diagnosed on B-mode ultrasound images. During transvaginal ultrasound, a uterine mass may appear as an area of increased echogenicity bulging into the endometrial cavity with echogenicity similar to that of the myometrium **[11]**. SIS is also effective in distinguishing diffuse endometrial changes and focal intracavitary protuberances. However, it is limited in its ability to differentiate between endometrial hyperplasia [premalignant polyps] and endometrial carcinoma **[12]**.

The quality of the image obtained is dependent on the amount of deformation induced by the saline injection (pressure) into the uterine cavity. If the amount of saline injected is too

little, the deformation induced is too small to provide images with a reasonable signal-to-noise ratio. This situation has led to generation of suboptimal strain images in some instances because of the minimal deformation of the tissue. The amount of deformation applied via saline injection is dependent on the ability of the patient to tolerate the discomfort induced due to saline injection into the uterus but mainly to the ability of the person injecting; in other cases, insufficient deformation is due to the presence of saline from a previous infusion and the inability to withdraw sufficient fluid before starting a new infusion **[13]**.

In this case, the treatment option for the specific patient who still wants to preserve the uterus is a laparoscopic myomectomy procedure **[14]**. The case presented here indicates that the myoma was lying deep in the uterine wall. After removal of the myoma of uterus, the fallopian tubes and ovaries were visualized, both ovaries were normal. After surgery, the patient symptoms were relieved, so the patient herself enjoyed an expectant management. Medical management GnRH analogues (GnRHa) are commonly used before myomectomy to make surgery easier and safer, but in this emergency case, in which the patient was suffering with pain, heavy bleeding and anaemia (haemoglobin 6.2 gm/dl) the GnRHa therapy averred to be impossible and an emergency surgery was performed **[15]**. Even fast developing lumps may not be excised as routinely practiced because the possibility of a malignant leiomyosarcoma even if very rare, only 0.23 percent has been reported in one study **[16]**. The procedure for myomectomy in premenopausal women should be focussed towards improvement in symptomatic relief and quality of life of patient who desire to retain their uterus; proper counselling and probability of myomectomy have to be suggested in patients carrying symptomatic fibroids as well as in those patients with huge, asymptomatic fibroids **[17]**. If the GnRH analogues treatment continues for long time, the latter is usually connected with extraordinary cost, weakness of bone due to demineralization, high risk of recurrence and menopausal symptoms **[18]**. In our country negligence concerning women's reproductive health, perpetuated by law, is part of a larger, systematic discrimination against women. Laws obstruct women's access to reproductive health services. Laws protecting of women's reproductive health are rarely or inadequately implemented (**19]**. With the Pre-Surgical Lasmar Score more than 8, a laparoscopic surgical management was indicated. A laparoscopy both for exploration and adhesiolysis was the only method available due to the size and location of the mass. Laparoscopic myomectomy for large submucous myomas is a technically feasible procedure. It can be performed by experienced surgeons irrespective of the size or depth of the myoma **[20]**. The risk of massive blood loss specifically due to increased vascularity of the tumours is the major technical hazard of surgical removal of large uterine fibroids **[21]**.

CONCLUSION

After hysterectomy a woman experiences symptoms such as severe vaginal dryness and decreased libido quite commonly. These are the main issues for women to avoid hysterectomy and choose to preserve their uterus.

In order to avert the complications like an incomplete excision, our group performs laparoscopic myomectomy for patients with large submucous fibroids more than 5 cm. The presence of a submucous fibroid larger than 4 cm and with an intramural extension greater than 50%, laparoscopic rather than hysteroscopic myomectomy has to be performed for the sake of safety and, if needed, for the concomitant removal of fibroids of a non-submucous type. However, this particular approach should be performed only by surgeons skilled in laparoscopic suturing. Recurrency for submucous fibroids is very low due the decline in ovarian function toward the later part of the reproductive age and the consequent hypoestrogenic state that ensues.

Abbreviations
FIGO : Federation International Gynaecology and Obstetrics

GnRHa : Gonadotrophin Releasing Hormone analogue

Acknowledgements
None

Authors' contributions
Indra Adi Susianto performed the surgery as a main surgeon, and Hervyasti Purwiandari as a second surgeon. The manuscript was prepared by Indra Adi Susianto. All authors read and approved the final manuscript

Funding
None of the author received any funding for this study

Ethics approval and consent to participate

The privacy of the patient was considered, and the manuscript does not include any identifying information.

Consent for publication Informed consent for publication of the patient's clinical data and the accompanying

images was obtained from the patient.

Competing interests
The authors declare that they have no competing interests.

REFERENCES

1. Reynolds A. Diagnosis and management of uterine fibroids. Radiologic Technology. 2007;79[2]:157-78.
2. Robboy SJ, Bentley RC, Butnor K, Anderson MC. Pathology and pathophysiology of uterine smooth- muscle tumors. Environmental Health Perspectives. 2000:779-84.
3. Beckmann MW, Juhasz-Böss I, Denschlag D, Gaß P, Dimpfl T, Harter P, Mallmann P, Renner SP, Rimbach S, Runnebaum I, et al. Surgical methods for the treatment of uterine fibroids - risk of uterine sarcoma and problems of morcellation: Position paper of the DGGG. Geburtshilfe Frauenheilkd. 2015;75:148–164. doi: 10.1055/s-0035-1545684.
4. Stovall DW. Clinical symptomatology of uterine leiomyomas. Clinical Obstetrics and Gynecology. 2001;44[2]:364-71.
5. Zimmermann A, Bernuit D, Gerlinger C, Schaefers M, Geppert K. Prevalence, symptoms and management of uterine fibroids: an international internet-based survey of 21,746 women. *BMC Womens Health*. 2012;12:6.
6. Rosalind Pollack Petchesky. Reproductive Freedom: Beyond "A Woman's Right to Choose"Vol. 5, No. 4, Women: Sex and Sexuality [Summer, 1980], pp. 661-685

7. acobson GF, Shaber RE, Armstrong MA, Hung YY. Changes in rates of hysterectomy and uterus-conserving procedures for treatment of uterine leiomyoma. Am J Obstet Gynecol. 2007;196:601–6.
8. Beckmann MW, Juhasz-Böss I, Denschlag D, Gaß P, Dimpfl T, Harter P, Mallmann P, Renner SP, Rimbach S, Runnebaum I, et al. Surgical methods for the treatment of uterine fibroids - risk of uterine sarcoma and problems of morcellation: Position paper of the DGGG. Geburtshilfe Frauenheilkd. 2015;75:148–164. doi: 10.1055/s-0035-1545684
9. Hillard PJ. 14 Benign Diseases of the Female Reproductive Tract. Berek & Novak's gynecology. 2007:431.
10. Kraus PA, Boston RJ. Saline infusion sonohysterogram as initial investigation of the endometrium and uterine cavity. Aust N Z J Obstet Gynaecol. 2001;41:433–435. doi: 10.1111/j.1479-828X.2001.tb01324.x.
11. Levens ED, Wesley R, Premkumar A, Blocker W, Nieman LK. Magnetic resonance imaging and transvaginal ultrasound for determining fibroid burden: implications for research and clinical care. *Am J Obstet Genecol*. 2009;200[5]:537.
12. Omari, EA, Varghese T, Kliewer MA. A novel saline infu- sion sonohysterography-based strain imaging approach for evaluation of uterine abnormalities in vivo: preliminary results. *J Ultrasound Med*. 2012;31[4]:609–615.
13. Davidson KG, Dubinsky TJ. Ultrasonographic evaluation of the endometrium in postmenopausal vaginal bleeding. *Radiol Clin North Am*. 2003;41:769–780.
14. PG Paul, George Paul, KT Radhika. Laparoscopic Myomectomy for a Plethora of Submucous Myomas. J Minim Invasive Gynecol. Sep-Oct 2017;24[6]:893-894.
15. M.Kamath, E Kalampokas et al. Use of GnRH analogues pre-operatively for hysteroscopic resection of submucous fibroids: A systematic review and meta-analysis. European journal of obstetrics, gynecology, and reproductive biology 2014 : 177
16. Goetsch AL, Kimelman D, Woodruff TK. Fertility preservation and restoration for patients with complex medical conditions. Springer; 2017.
17. P. Ciarmela, A. Ciavantini, Stefano R et al. Management of leiomyomas in perimenopausal women. Maturitas. 2014. Volume 78, issue 3, P168-173, JULY 01, 2014
18. Vilos GA, Allaire C, Laberge PY, Leyland N, Vilos AG, Murji A, Chen I. The management of uterine leiomyomas. Journal of Obsetrics and Gynaecology Canada. 2015; 37[2]: 157-78.
19. Rebecca J. Cook. International Human Rights and Women's Reproductive Health, Studies in Family Planning. Vol. 24, No. 2 [Mar. - Apr., 1993], pp. 73-86
20. Rakesh Sinha et al. Laparoscopic removal of large submucous myomas. Gynecological Surgery volume 9, 2012: 37–4
21. Exacoustòs C, Romanini ME, Rinaldo D, Carusotti C, Arduini D, BenedettiPanici P, Romanini C. F02Sonographic preoperative assessment of myometrial invasion in endometrial cancer. Ultrasound in Obstetrics & Gynecology. 2000;16[s1]:35.