

Debulking the Uterus: A Case and Review of Recent Literature Regarding Associated Risks

K Nguyen¹, C Newman², S Kapoor³ & S Vo^{1,2,3}

¹Liverpool Hospital, Sydney, Australia.

²Southwest Sydney Clinical School, University of New South Wales (UNSW), Liverpool Hospital, Sydney, Australia.

³Department of Obstetrics and Gynaecology, Fairfield Hospital, Sydney, New South Wales, Australia.

⁴Department of Obstetrics and Gynaecology, Liverpool Hospital, Sydney, New South Wales, Australia.

Introduction

Hysterectomies involving enlarged uteri or multiple fibroids, present a unique operative challenge of restricted exposure and pelvic space for exteriorisation of the uterus. To overcome this, uterine debulking approaches including myomectomy, size reduction techniques of bisection, coring, and wedge resection, as well as morcellation, can be considered¹. These approaches substantially reduce disease volume to deliver a bulky uterus through the surgical opening and facilitate hysterectomy completion. However, debulking the uterus carries established surgical risks, as well as rare but significant risk of uterine tissue dissemination.

Case Report

A 60-year-old, para 3 female presented to Gynaecology clinic with a several year history of heavy menstrual bleeding. She had regular 28-day menstrual cycles with prolonged, 10-day menses and associated syncopal symptoms requiring blood transfusions and intravenous iron. On abdominal examination, the uterine fundus was to the level of 2cm above the umbilicus. Pelvic ultrasound revealed a bulky multi-fibroid uterus measuring 15.3 x 9.9 x 13.8cm (1097cc) with the three large fibroids measuring 8.7, 7.5 and 5.6cm in diameter. The patient was consented for a total abdominal hysterectomy, with surgical risks of the procedure discussed.

A Pfannenstiel incision was performed through a previous Caesarean section scar, however, access to the fundus and exteriorisation of the uterus proved challenging due to the enlarged uterus and multiple fibroids. The decision was made for uterine debulking, and multiple myomectomies were performed to obtain vision and access to exteriorize the uterus. The procedure continued uneventfully. Histopathology showed benign myometrium with multiple benign leiomyomas.

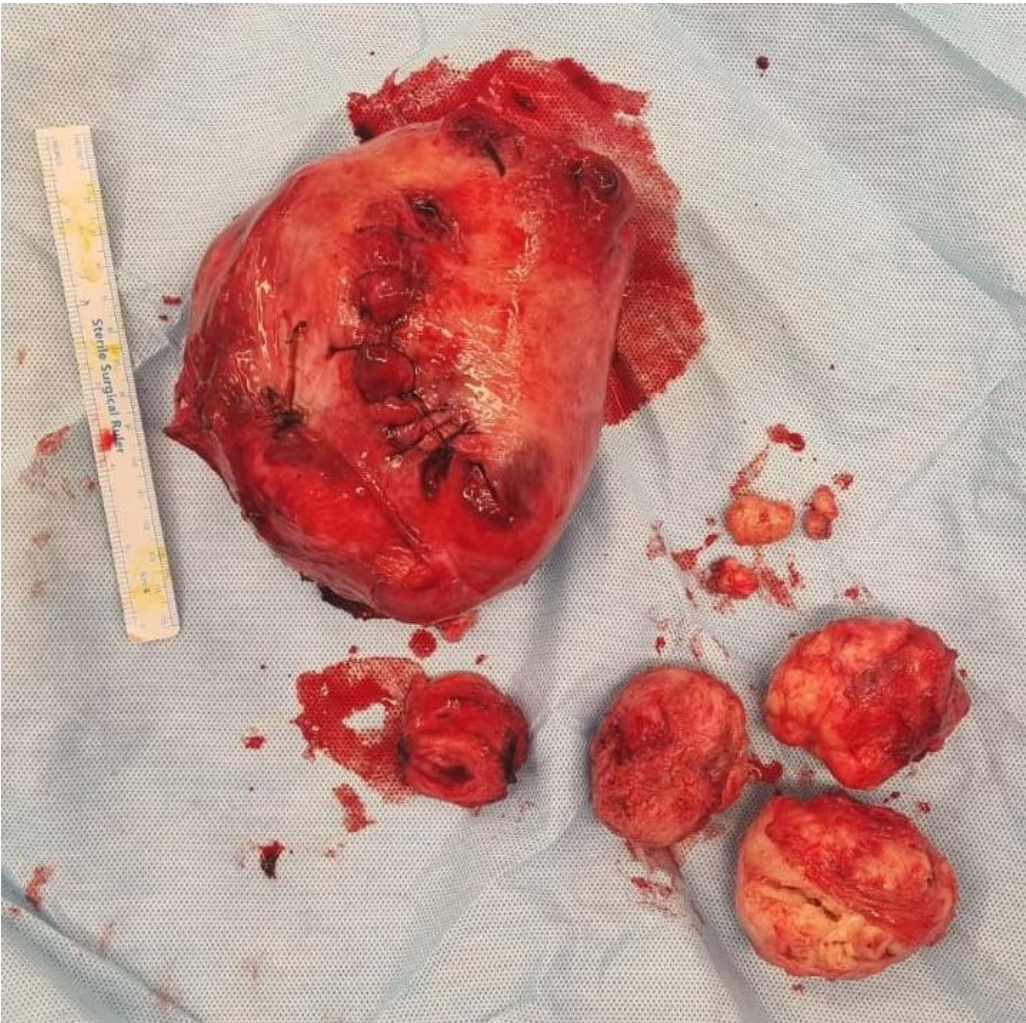


Image 1: Surgical specimens

Enlarged uterus 160 x 135 x 110 mm (top left), separate cervix 43 x 32 x 17 mm (bottom left), and 3 fibroids 65 x 50 x 50 mm, 65 x 50 x 48 mm, 60 x 50 x 43 mm (bottom right). Together the pieces weigh 1208 g. The surgical incision on the uterus represents the original location of the fibroids.

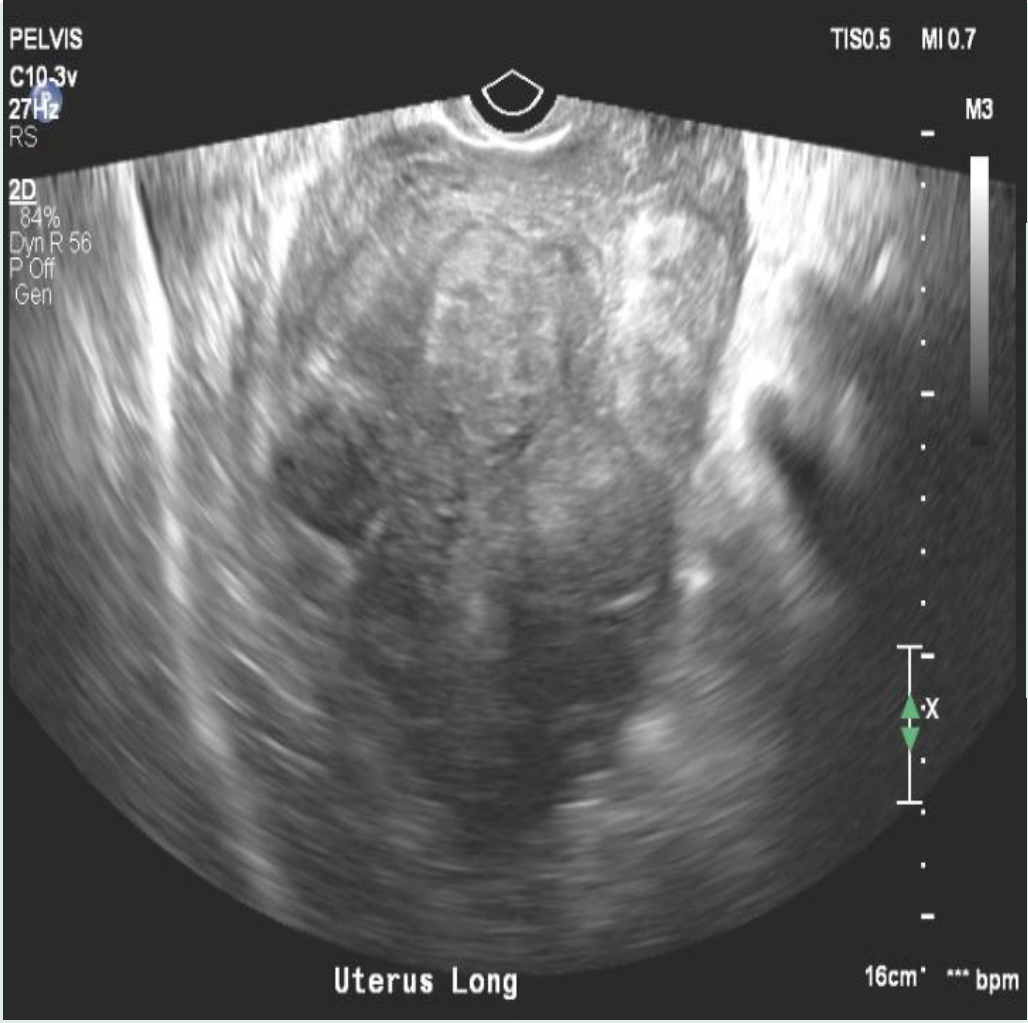


Image 2: Longitudinal view of the uterus on transvaginal ultrasound

Note multiple subserosal and intramural fibroids seen.

Discussion

Uterine debulking techniques, including myomectomy, carry established surgical risks. The restricted pelvic space, increased vascularity, and limited operative exposure characteristic of the bulky uterus, predispose patients to a higher risk of complications compared to simple hysterectomies. This includes haemorrhage and haemoglobin drop given that fibroids and their surrounding myometrium have a rich vasculature². Literature has shown that 7% of abdominal and 5% of laparoscopic surgery patients required a blood transfusion following hysterectomy of enlarged uteri respectively. This risk would also be higher if debulking manoeuvres are performed prior to securing uterine vessels³. The well-established trend of increased risk associated with abdominal compared to minimally invasive debulking has also been observed with urinary and systemic infection, and inadvertent injury to adjacent structures, particularly the bladder and bowel, and less frequently, the ureters and major pelvic vessels. This is slightly counterbalanced by the longer operative times associated with debulking, which is more pronounced with minimally invasive vaginal and laparoscopic approaches compared to open abdominal debulking⁴.

Although rare, debulking techniques, namely morcellation, poses risk of uterine tissue dissemination. Morcellation involves fragmentation of tissue for removal through a small entry in minimally invasive surgery, during which uterine tissue fragments spilled can seed and grow into parasitic leiomyomas, endometriosis and disseminated peritoneal leiomyomatosis. These can cause pain, abnormal uterine bleeding, bowel and bladder obstruction and peritonitis, with some cases necessitating further surgical management⁵.

More concerning, recent cases of upstaging disease via malignant intraperitoneal seeding of occult uterine leiomyosarcoma have brought controversy to the use of morcellation. The risk is estimated to range from 1 in 770 surgeries to 1 in 10,000, however, given that leiomyosarcoma cannot be reliably excluded pre-operatively and carries a poor prognosis, contained morcellation must be performed with extreme caution only when malignancy is not suspected⁶. Thus, the choice between abdominal debulking which carry more surgical risks, must be weighed against the rare, but significant risks of uterine tissue dissemination in minimally invasive techniques.

Conclusion

Mitigating risks associated with uterine debulking involves careful pre-operative assessment of uterine size, shape and malignancy risk to determine surgical route and approach and specimen containing strategies. Patient counselling of operative risks and shared decision making is also paramount.

References

1. Singh, Saroj, and Garima Goel. "A Comparison of Intraoperative and Postoperative Morbidity in Women Undergoing a Nondescent Vaginal Hysterectomy by Debulking Procedures vs the Conventional Method." *Journal of South Asian Federation of Obstetrics and Gynaecology*, vol. 11, no. 3, 1 June 2018, pp. 144–147, 10.5005/jp-journals-10006-1702. Accessed 23 July 2026.
2. Ala Uwais, et al. "A Comparison Between Total Abdominal Hysterectomy Versus Total Laparoscopic Hysterectomy." *Gynecology and Minimally Invasive Therapy*, vol. 13, no. 1, 7 Dec. 2023, pp. 43–47, 10.4103/gmit.gmit_72_23.
3. Uccella, Stefano, et al. "Laparoscopic Versus Open Hysterectomy for Benign Disease in Uteri Weighing >1 Kg: A Retrospective Analysis on 258 Patients." *Journal of Minimally Invasive Gynecology*, vol. 25, no. 1, Jan. 2018, pp. 62–69, 10.1016/j.jmig.2017.07.005. Accessed 23 July 2026.
4. C. Gnanachandran, et al. "Myomectomy Benefits, Risks, Long-Term Outcomes, and Effects on Fertility and Pregnancy Outcomes: A Literature Review." *Journal of Gynecologic Surgery*, vol. 39, no. 4, 1 Aug. 2023, pp. 151–157, 10.1089/gyn.2022.0127.
5. Kuessel, Lorenz, et al. "Reducing Peritoneal Cell Dissemination in Laparoscopic Uterine Surgery: A Comparative Pilot Study on Morcellation Techniques and Peritoneal Irrigation." *Journal of Clinical Medicine*, vol. 14, no. 10, 13 May 2025, p. 3383, 10.3390/jcm14103383. Accessed 23 July 2026.
6. ACOG. "Uterine Morcellation for Presumed Leiomyomas." *Obstetrics & Gynecology*, vol. 137, no. 3, Mar. 2021, pp. e63–e74, 10.1097/aog.0000000000004291.