

A Case of Giant Uterine Leiomyomas Posted for Total Abdominal Hysterectomy with DJ Stenting

Dr. Mohammed Shoeb¹, Dr. Liqayatul Wadud Al Hadi², Dr. Nirmala B C³

¹JR, Department of Anaesthesiology, MVJ Medical College and Research Hospital

Email: mohammedshoeb60[at]gmail.com

Phone: +919964668479

²Jr, Department of Anaesthesiology, MVJ Medical College and Research Hospital

³Professor, Department of Anaesthesiology, MVJ Medical College and Research Hospital

Abstract: *Background:* Leiomyomas are the commonest gynecological tumor found in women. Leiomyomas may appear as a solitary tumor or as a conglomerate mass of uterine leiomyomas presenting as a single uterine tumor. Cases are reported in the literature. Perioperative management of leiomyomas can be challenging due to the large tumor size and the risk of hemorrhage. *Case presentation:* We report a case of a 46-year-old woman with huge leiomyoma. En bloc tumor resection with a 6000-mL estimated blood loss was planned. The surgical treatment for symptomatic uterine leiomyomas is facilitated by general or regional anaesthesia. General anesthesia was preferred for such cases as surgical resection takes time, incisions will be wide and there will be major hemodynamic variations. We went for regional anaesthesia. It was challenging as the size was big requiring higher levels of block. We describe the case of giant uterine leiomyomas posted for TAH with DJ stenting. *Conclusion:* The large size and a complex anatomy of this mass presented an unusual challenge for anesthetic management. Appropriate hemodynamic monitoring and blood loss management strategies are particularly helpful for anaesthetic management of huge leiomyomas.

Keywords: Leiomyoma, Regional anesthesia, Hemodynamic monitoring, Case report

1. Background

Leiomyomas are benign tumors developed from smooth muscle cells of uterus. Massive tumours are likely to be neoplasms believed to be malignant leiomyosarcomas. Leiomyoma is an otherwise common conditions with small tumours which are benign. Changes in intra-abdominal pressure during the resection and blood loss are likely to cause hemodynamic instability, must be closely monitored. DJ stenting in advance to minimise the ureteric injury. An advanced discussion among the surgical team, the anaesthesiology team, and blood bank is essential to cope up with potential life-threatening hemorrhage. Herein, we describe a case of an en bloc resection of a large leiomyoma in a woman.

2. Case Presentation

A 46-year-old woman (weight 55 kg, height 148 cm) came with complaints of Heavy Menstrual bleeding from 2 days with dysmenorrhea. This patient was a married, with two children and under irregular menstruation. With the history of increasing dull pain in the abdomen, heavy bleeding associated with a palpable solid mass, diagnosis was made as AUB associated with query twisted leiomyomas or ovarian tumor. Patient was posted for emergency surgery (laparotomy and procedure) in view of persistent pain. Her medical history was positive for recently diagnosed hypothyroidism with TSH 5.83 μ IU/ml and she was on Tablet Thyroxine 12.5mcg. General physical examination showed bulging abdomen and pallor. Patient was anemic Her hemoglobin level was of 8.9gm/dl. She received blood transfusion of 1 unit of PRBC of A negative blood group with repeat Hb of 10.7 gm/dl. Abdominopelvic ultrasonography showed a large well defined heterogeneously hypoechoic lesion 10.3x9.4 cms.

leiomyoma. All other routine investigations were carried out which were in normal range. She had normal resting electrocardiogram with sinus rhythm with heart rate of 90 beats/minute and pulmonary function tests were at the lower limit of normal range. Lower limb ultrasonography was also performed to rule out venous thromboembolism. Her baseline vitals were pulse rate 90/min, regular, blood pressure 118/78mm of Hg and Spo2 97% on room air. Airway examination: Mallampatti Grade 2, no loose or artificial teeth, mouth opening >3 fingers adequate, temporomandibular joint and neck movements were adequate.

We planned for combined spinal epidural anesthesia. 2 IV cannulas of 18g were inserted on the patient's right and left arm to facilitate intraoperative fluid management, blood transfusion and postoperative fluid support. Inside the operating room, standard monitors were connected. Patient was preloaded with 500ml of ringer lactate. The lumbar epidural space was localized, using a midline approach with an 18-gauge Tuohy epidural needle by loss of resistance technique with 2 mL of saline, 20-gauge epidural catheter was inserted Spinal anesthesia was given in sitting position between L1 and L2 after epidural catheter placement with 0.5% bupivacaine heavy 3ml. T6 level was achieved. The surgery started in the lithotomy position. Patient underwent DJ stenting before the procedure. Urologist could only secure the stent on the right side as the left ureter could not be visualized. After opening the abdomen, The gynecologist decided to go ahead with en bloc removal of the tumor with total abdominal hysterectomy. As the size was big and there were dense adhesions to small intestine patient had major blood loss. Patient systolic blood pressure stated dropping which was corrected by colloids. Then blood and blood products were started. As the surgery was prolonged anesthesia was maintained by the epidural catheter.

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Intraoperative hemodynamic changes were maintained with in the normal range with the help of fluids, colloids, blood and vasopressors. Her urine output was around 1500ml. At the end of the operation, the patient was shifted to the surgical



intensive care unit (ICU). Postoperative analgesia was achieved by intermittent low-dose of ropivacaine and buprenorphine through epidural catheter for the first 48h. Early mobilization was done.



3. Discussion

This case report describes the anaesthetic management of surgical resection of a giant leiomyoma with total abdominal hysterectomy. Myomectomy can increase the morbidities and the rate of mortality especially when hysterectomy is performed. Intraoperative complications, such as DIC, fluid overload, ARDS, and hemodynamic disturbances that may necessitate blood transfusion may threaten the patient health. Therefore, anesthetic management in these patients must be well-planned. The combined spinal epidural (CSE) technique emerges as an optimal solution to address the limitations of single-shot spinal anesthesia¹. While general anesthesia (GA) poses risks such as increased blood loss and potential airway complications leading to increased perioperative morbidity and mortality. The risk of perioperative deep vein thrombosis is more with general anesthesia compared to regional anesthesia in major abdominal-pelvic surgeries². Early Ambulation after surgery can be permitted in regional anesthesia as analgesia can be maintained with epidural topups. In contrast, the CSE technique, facilitated by epidural catheters, enables precise titration of sensory and motor blockade, offering better control over the hemodynamic consequences of sympathetic blockade. Moreover, routine employment of the CSE technique reduces the incidence of post-dural puncture headache (PDPH) and can aid in the prevention of venous thrombosis through early mobilization. Spinal anesthesia has demonstrated efficacy and safety by reducing blood loss during surgery through its effects on the sympathetic nervous system, leading to decreased vascular tone and hypotension³. Additionally, spinal anesthesia is preferred over general anesthesia due to its lower incidence of postoperative complications such as nausea, vomiting, and cognitive dysfunction⁴. This preference is further supported by its cost-effectiveness, with spinal anesthesia being approximately 9.93% less expensive than general anesthesia while maintaining comparable patient outcomes⁵.

4. Conclusion

In women with large leiomyoma uterus planning for surgical removal, gynecology-Anaesthesia team discussion and carefully choosing the best anesthetic technique, taking into account the location and the size of myoma, expected volume of blood loss, and surgical complications are important for patient safety. Anesthesiologists are increasingly opting for regional anesthesia (RA) due to its advantages, including

superior muscle relaxation and effective postoperative pain management. In cases where early mobilization is crucial, such as the one described, regional anesthesia plays a pivotal role by facilitating quicker recovery and early mobilization post-surgery. Moreover, regional anesthesia has been demonstrated to decrease operative blood loss, a significant benefit in surgeries where minimizing blood loss is crucial. Additionally, the risk of deep vein thrombosis (DVT) is reduced with regional anesthesia, further enhancing its appeal as a preferred anesthetic technique in various surgical procedures. Overall, the utilization of regional anesthesia offers a comprehensive approach to perioperative care, improving patient outcomes and recovery.

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