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CHALLENGES IN MANAGING AN INTERESTING CASE OF GIANT UTERINE TUMOUR AND REVIEW OF LITERATURE

Anaesthesiology

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ABSTRACT

Giant uterine tumours are rare and present significant challenges during intra-operative and postoperative management. Proper surgical intervention can greatly improve patient outcomes. Intraoperative stabilization, including ventilator support, blood transfusion, and fluid management, is critical for a successful surgery. Postoperative care is equally vital to ensure recovery. Here, we report a case of a giant uterine tumour weighing 8 kg with multiple challenging intraoperative and postoperative complications, highlighting the importance of meticulous surgical and postoperative management in achieving a favorable outcome.

KEYWORDS

Giant abdominal tumour, giant uterine tumour, malignant mixed müllerian tumour, perioperative complications, carcinosarcoma

INTRODUCTION:

Giant abdominal tumours, particularly those of uterine origin, are extremely rare and present significant challenges in management.[1] Large uterine tumours can disrupt normal physiological functions, leading to complications during the perioperative period. The lack of randomized controlled trials and established guidelines in the literature highlights the absence of consensus regarding anesthesia management for patients with giant uterine tumours.[2] We present a case involving an 8 kg giant uterine tumour, initially misdiagnosed as ascites with cardiac failure, highlighting the fact that preoperative assessment, optimization, and meticulous anesthesia planning are essential to mitigate perioperative risks.

Case report:

A 67-year-old female homemaker presented to the ER with complaints of breathlessness, pedal edema and abdominal distension suspected to be a case of ascites with cardiac failure. A CT scan of the abdomen and pelvis revealed a malignant complex uterine mass with metastatic disease, moderate ascites, a paraumbilical hernia containing omental fat with abdominal wall edema, and bilateral pleural effusion.

Considering the patient's condition, we performed a full preoperative evaluation. Preoperative pulmonary function tests showed restrictive impairment. Preoperative cardiac assessment was normal. Based on the assessment of the patient's physical condition and examination, we determined that the patient was American Society of Anaesthesiologists (ASA) grade III.

The day before surgery, the patient was fasting. To relive the patient's anxiety, Preoperative intravenous injection of midazolam was administered. From admission to removing the giant tumour, the patient received treatment in the mild left lateral position to avoid inferior vena cava compression (10~20°). Before surgery, as prophylaxis against thromboembolism, the patient wore elastic support stockings and Inj. Clexane 0.6 ml subcutaneous.

Surgical intervention involved debulking of a large uterine mass measuring 25x30 cm and weighing 8 kg, along with adhesiolysis, omentectomy, and hysterectomy. A subclavian line was placed preoperatively. Intraoperatively, the tumour was found to be very fragile and prone to bleeding upon touch. Despite initial concerns that debulking might not be feasible and the patient might not survive, the decision was made to proceed with the surgery. Anticipating massive bleeding, 4 units of FFP, 4 units of cryoprecipitate, and 8 units of platelet concentrate were ordered. During the procedure, the patient experienced significant blood loss of 4.5 liters. The patient's blood pressure was initially maintained with crystalloid fluids, and approximately 15 liters of fluid were infused. Noradrenaline was started when the patient's pulse became feeble.

Following transfusion, the patient's blood pressure stabilized, and the surgery, which lasted for 4 hours, successfully debulked the entire tumour, despite persistent bleeding from multiple tumour surfaces. Postoperatively, the patient was electively ventilated and not extubated immediately. Urine output during the surgery was minimal at 40 mL over 4 hours, but improved within 4 hours post-surgery after multiple blood transfusions.

Postoperatively, the patient exhibited puffiness of the face but did not develop pulmonary edema. The patient was kept intubated and continued on ventilator support. She was extubated on the third postoperative day. Paralytic ileus was present for 48 hours. Despite hypotension and reduced urine output during intraoperative period, the patient did not develop acute kidney injury. Multimodal analgesia was used after surgery, including epidural analgesia assisted by nonsteroidal anti-inflammatory drugs (NSAIDs). Histopathology confirmed the diagnosis of a malignant mixed müllerian tumour (carcinosarcoma) originating from the outer uterine myometrium. The patient subsequently improved and was discharged, with a plan to start chemotherapy for metastatic disease.

DISCUSSION:

Patients with abdominal masses or tumours, particularly giant ones, are deemed high-risk for surgical and anesthesia procedures. These tumours, which can originate from diverse sources like ovarian tumours, sarcomas, and pseudomyxoma peritonei, require meticulous preoperative evaluation, optimization, and detailed anesthesia planning to minimize perioperative risks and complications. [2]

Carcinosarcomas, also known as malignant mixed Müllerian tumours, predominantly occur in the uterus but can also affect other anatomical sites such as the cervix, ovaries, fallopian tubes, vagina, peritoneum, and extra-genital locations. While most cases are seen in women in their fifth decade, they occasionally occur at younger ages. [3] Postmenopausal women with low parity are at higher risk, typically presenting around the age of 65.5 years on average, with disseminated disease at diagnosis.[4]

Large uterine tumours can disrupt normal physiological functions by increasing intraabdominal pressure and causing compression-related respiratory, hemodynamic, and gastrointestinal symptoms. Changes in intrathoracic pressure due to patient positioning and intraoperative ventilation can further contribute to hemodynamic instability. Hemorrhage is a frequent complication during surgical removal, necessitating preparedness from anesthesiologists. Surgery remains the mainstay treatment, addressing potential risks like organ injury,

infections, and bleeding. [2] Some patients may require additional therapies such as radiotherapy or chemotherapy post-surgery, as noted in previous research. [5]

Dividing the anesthesia phases into before and after tumour removal highlights significant aspects. Prior to tumour removal, complications may involve respiratory, hemodynamic, renal, and gastrointestinal systems. Compromised cardiorespiratory function due to diaphragm splinting and inferior vena cava (IVC) compression leading to reduced cardiac output and potential pulse loss, underscore the importance of maintaining a supine position to mitigate these risks. [6]

Another critical issue during the management of such tumours is significant bleeding, which can occur during adhesiolysis or due to the malignant type of the tumour. This bleeding can pose life-threatening risks due to challenges in achieving hemostasis. Intraoperative blood loss of 1200-5300ml noted in several reports. Some surgeon used a snare to reduce bleeding, which proved effective.[7] This patient, intraoperative blood loss was estimated at 4500mL, 8U pints of PRBC, 4 pints fresh frozen plasma, 6 pints of platelets concentrate were injected.

Postoperative management of these tumours remains debatable because of their rarity. [5]

Post operative drainage is advised to avoid from a pathologic perspective. Regarding intraoperative drainage, an increasing number of researchers prefer slow drainage at 0.5–1 L/min. The potential risks of drainage are abdominal fluid leakage and the spread of ovarian cancer, as well as an elevated risk of abdominal infection, bleeding, and adhesions. [8]

After tumour removal, there is a rapid reduction in intrathoracic pressure, which can lead to hemodynamic instability and the potential development of re-expansion pulmonary edema (RPE).[2]

Postoperative intestinal distention occurs due to sympathetic activity and the diffusion of gases into the bowel lumen following decompression. Intestinal ileus has also been observed in some cases. Measures to alleviate intestinal distention include the use of an abdominal binder and a nasogastric tube. [9]

Delayed postoperative recovery can be attributed to severe pain, underscoring the significance of effective postoperative analgesia. To manage this, multimodal analgesia was employed, combining epidural analgesia with nonsteroidal anti-inflammatory drugs (NSAIDs).

For the management of patients with giant abdominal masses, preoperative planning with multidisciplinary approach is critical in achieving intraoperative success and favorable postoperative results.

CONCLUSION:

In conclusion, we have described a multidisciplinary approach for a patient with a giant ovarian tumour for successful perioperative management. In modern practice, large uterine tumours are rarely encountered. Operative and postoperative complications of cardiovascular dysfunction or ventilatory inadequacy are the potential problems associated with the removal of giant uterine tumour. Furthermore, in such rare cases, knowing the possibility of complications and choices for management can lead to better outcomes.

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