

Anaesthetic challenges for excision of a giant ovarian cyst in an obese patient.

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Citation this Article: Dr. Pallavi Sangwan, Dr. Shivani Rathee, Dr. Udit Girdhar, Dr. Baljit Singh, Dr. Karan Juneja, “Anaesthetic challenges for excision of a giant ovarian cyst in an obese patient”, IJMSIR- February - 2023, Vol – 8, Issue - 1, P. No. 166 – 169.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Introduction

Giant ovarian cysts are rarely seen in modern day surgical practice due to improved healthcare services and better imaging modalities. However, patients residing in rural areas seek medical aid very late for conditions which are insidious in onset and do not cause any acute symptoms.

As a result, these patients present additional challenges to anaesthesio logist such as difficulty in intubation, administration of regional block, life threatening cardio vascular and pulmonary complications. These can be further compounded by obesity. Management of such cases therefore, may be associated with significant morbidity and mortality. The consequences of surgery are

attributable mainly to the size of Ovarian mass rather than the distinctive pathology.

Case report

A 55yearold female patient presented with an abdominal swelling which had gradually increased in size over a period of 5 months. She weighed 110kg (BMI of 40.4), with abdominal girth of 105 cm and her heart rate was 110/min, BP was 140/ 89mmHg and respiratory rate of 22/min. Electro cardio gram (ECG), echo cardio graphy (ECHO) and arterial blood gases (ABG) were within normal limits. X-ray chest showed upward diaphragmatic displacement bilaterally with normal lung fields and FEV1/FVC ratio was 75%. Computerized tomography (CT) of abdomen showed a huge cystic mass, occupying

most of the lumbar and umbilical region with a mildly enhancing solid nodule in left antero-lateral aspect and both ovaries abutting it.

Central line placement was advised; however, the patient did not give consent for the same. Thus, two 18G peripheral intravenous lines were secured. Pre-operatively, Lumbar spine was palpated and intervertebral spaces could be felt with great difficulty. The patient was scheduled for an exploratory laparotomy for excision of the cyst. A gentle left lateral tilt was given by keeping a wedge under the right hip during transfer of the patient from the ward.

In the Operating room, standard monitoring; heart rate, ECG, oxygen saturation (SpO₂), non-invasive blood pressure and temperature was instituted. Since the patient was obese, a longer epidural needle was requested from the hospital pharmacy. However due to non-availability, we proceeded with the standard 18G Tuohy's needle in sitting position. Epidural space between L₂-L₃interspace was located with some difficulty. Almost whole of the needle was inserted before the space was reached. Epidural catheter was then threaded in smoothly and was fixed at 11 cm marking at the skin.

Though the patient was adequately fasting for more than 6hrs, rapid sequence induction was done, keeping in mind the delayed gastric emptying due to upward shift of the diaphragm. After preoxygenation, anaesthesia was induced with 150mg Propofol and 150 mcg of Fentanyl. Succinylcholine 100mg was administered to facilitate endotracheal intubation. Airway was secured with a 7mm oral cuffed endotracheal tube (ETT) using Video laryngo scope(C-MAC) with the patient in ramp position. Anaesthesia was maintained with nitrous oxide and oxygen, 0.5-1% isoflurane. Atracurium 50mg bolus dose was given in the beginning and then 10mg top-up doses to maintain good neuromuscular blockade. Controlled

ventilation was maintained with PEEP of 6cmH₂O, tidal volume of 650ml and respiratory rate of 14/min. Epidural top-up was given intra-operatively with 0.25% bupivacaine. Continuous ECG, SpO₂, EtCO₂, heart rate, non-invasive blood pressure, urine output, temperature and blood loss were monitored. To ensure temperature in the normal range, measures to maintain normothermia like warm intravenous fluids and blankets were taken. A gentle left lateral tilt was given with a pillow under the right hip to prevent aortocaval compression.

A large cystic mass weighing 15 kg was removed following which there was a sudden fall in systolic blood pressure to 80 mmHg. Considerable blood loss from the abdominal wall was noted and an estimated loss of 1000-1200 ml was observed in a short period of time. While the surgeon was controlling the ooze from various sites, warm crystalloids were rapidly infused along with one unit of Hydroxyethyl starch solution and one unit of packed cells. The blood pressure, thereafter, stabilized in the normal range and surgery proceeded uneventfully. Ensuring the patient was normothermic and normotensive, neuro muscular blockade was reversed at the end of surgery with glycopyrrolate and neostigmine and extubation of the trachea was uneventful. Epidural top-up with 8 ml 0.125% bupivacaine was given for post-operative analgesia. Post-operatively, the patient was transferred to ICU for further monitoring.



Figure 1:

Discussion

Large abdominal tumours interfere with respiratory function by producing elevation and splinting of the diaphragm and flaring of rib cage which can lead to marked dyspnoea. Besides that, these tumours can cause supine hypo tension syndrome due to aortocaval compression¹ for which a gentle left lateral tilt was given. Due to delayed gastric emptying which is common in such cases, these patients should be considered full stomach even if the fasting period is apparently adequate. Rapid sequence induction was therefore done.

The patient was kept on controlled ventilation with PEEP to minimize the possibility of hypo xemia and hypercapnia. Since incision in these patients is long, often extending from suprapubic region up to xiphisternum, the probability of respiratory impairment is high in the immediate post-operative period due to pain. Thus, we had the epidural catheter inserted prior to induction of anaesthesia to achieve good intra-operative analgesia which is known to reduce the requirement of inhalational agents intra operatively² and also to provide pain relief in the postoperative period.

The rapid decrease in thoracic pressure after removal of giant cyst can lead to sudden haemodynamic collapse.³ Blood pressure maintenance thus requires a very fine balance between the reduced cardiac output and peripheral Vaso constriction. Also, the probability of rapid blood loss intra operatively always exists. We therefore, had two large bore venous cannulae in place to deal with the probability of severe blood loss intra operatively.⁴ We suggest securing central venous line early on for rapid transfusion of fluids during excision of the mass. In our patient, central line was not put due to patient refusal. The severe hypotension seen just after removal of the tumor in our patient could be attributed to the blood loss

and splanchnic shock, when the tamponade effect of the mass was removed.

In the early post - operative period, haemorrhage, hypothermia, pulmonary oedema which are secondary to large transfusions are common⁵. Epidural top-up was given before extubation to ensure that the patient was as much pain free as possible in the immediate post operative period. Prophylactic measures such as elastic stockings, rapid mobilization, subcutaneous heparin and dextran infusion are advised, to reduce the probability of deep venous thrombosis and pulmonary embolism in obese patients.⁴

Also, in view of continuous monitoring required in the immediate postoperative period, the patient was shifted to ICU. To prevent development of pressure sores, she was nursed on an air mattress. After an overnight stay in the ICU, she was transferred to the ward from where she was discharged a week later.

In conclusion, huge ovarian cysts even though are not commonly encountered nowadays, anaesthesiologists must be aware about the challenges and should be fully prepared to deal with these while anaesthetising such cases. It also requires a good team work between the surgeon, the anaesthesiologist and the staff in the recovery area where monitoring is vital. A good post operative analgesia can play a significant role in prevention of the respiratory problems in the immediate post operative period.

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