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BACKGROUND:

- Lung cancer during pregnancy is uncommon and the majority is diagnosed in the advanced stages of the disease.
- The paucity of published data on anesthetic management and treatment of complications contrasts with the complexity of management in pregnant patients with lung cancer, especially when a mediastinal mass, vertebral and brain metastases are present.
- Management is complex, needs to be adapted to the particular clinical situation, and involves a multidisciplinary approach.

CASE REPORT:

- A 42-year-old pregnant woman at 30+4 weeks of gestation presented severe acute respiratory failure secondary to pulmonary embolism. Diagnostic imaging studies showed a large left lung mass involving mediastinal elements (left pulmonary artery, left pulmonary veins) but causing no obvious airway compression. The studies also showed pericardial effusion, carcinomatous lymphangitis, and metastases in liver, brain and bones (including dorsal, lumbar and sacral spine lesions, with epidural lesions).
- A diagnosis of stage IV ALK+ lung cancer was made.
- A multidisciplinary team of anesthesiologists, obstetricians, neonatologists, oncologists decided to perform an elective caesarean section (CS).
- The impossibility of performing a regional technique led us to use general anaesthesia (GA) in spite of the high hemodynamical, respiratory and neurological risk of GA.

1. Initial maternal monitoring: ECG, pulsioximetry, minimally invasive hemodynamic monitoring.
2. Two peripheral venous accesses and a central venous access with CVP monitoring.
3. Premedication: Hydrocortisone, 100 mg, Augmentine 500 mgr, Clindamycin 900 mgr, Metoclopramide 10 mgr, Ranitidine 50 mgr and oral Citrate 30 ml.
4. Supine position with the uterus displaced to the left with pad and lateralization of the table.
5. Face mask 100% oxygen. Rapid Sequence induction: midazolam 1,5 mgr, fentanyl 300 mcg, thiopental 300 mgr and rocuronium 50 mgr iv. Sellick maneuver and tracheal intubation (7.5 cuffed tube). Positive Pressure Ventilation (PPV) is initiated.
6. Remaining monitoring: capnography, anesthetic gas analyzer, hourly diuresis and BIS.
7. General anesthesia was maintained with propofol, fentanyl and remifentanyl infusion. Warm iv liquids. 20 mg of Mannitol and Furosemide iv were used to avoid intracranial hypertension.
8. We used a protective ventilation without PEEP, FIO2 0.6, low tidal volume and high respiratory rate to get gasometric PAco2 similar to their basal (=30mmHg)
9. She remained haemodynamically stable and well ventilated and oxygenated.
10. A newborn was delivered with signs of respiratory depression that required intubation.
11. Uterine contraction was difficulted by a big posterior myoma. Total hemorrhage: 800 ml. It required the use of uterotonics (low doses of oxytocin and a posterior infusion, intravaginal and rectal prostaglandins) and blood transfusion.
12. Bilateral TAP blockade was made.
13. Emergence from anesthesia and extubation without problems

DISCUSSION

WHY IS MEDIASTINAL EXTENSION EVALUATION VITAL?

AIRWAY AND RESPIRATORY EVALUATION

- Evaluate a possible mass effect on airway patency. Supine position, GA and physiological changes in pregnancy may lead to complete airway obstruction, decreased lung volume and ventilation/perfusion mismatch (BUT airway collapse upon induction is rare in adults)
- Risk of airway oedema, decreased functional residual capacity and small airway closure, because of cancerous invasion of the lung and pathological conditions such as pulmonary thromboembolism. Pregnant patient is less tolerant of periods of apnoea.

CARDIOVASCULAR INVOLVEMENT

- It's critically evaluating structures affected to predict stability after induction.
- These patients are preload sensitive: changes by induction, PPV, or blood loss can be deleterious. *Maintenance Of Preload Is Critical.*
- Ventilation-perfusion mismatch caused by compression of a bronchus and the contralateral pulmonary artery has been shown to be fatal.// Risk of Mediastinal Mass Syndrome

WHY IS VERTEBRAL AND BRAIN METASTASES STUDY SO IMPORTANT?

VERTEBRAL METASTASES

- Spinal metastases occur in up to 70% of all patients with cancer, but only 10% are symptomatic.
- Intrathecal or epidural injections could cause paraplegia if metastases are impinging on the spinal cord.
- A magnetic resonance imaging (MRI) is necessary for the anaesthetic plan, to look forward spinal metastases

BRAIN METASTASES

- GA remains a safe and dependable technique in parturients with brain tumors who requires CS.
- Maternal hyperventilation, permitted by tracheal intubation, is useful to control raised intracranial pressure; maternal PAco2 should be kept in the range of 25-30 mmHg.

LEARNING POINTS

- Treatments need to be tailored on an individual basis.
- Regional anesthesia is the gold standard technique for cesarean section in pregnant women with advanced lung cancer but, before considering central neuroaxial blockade, a MRI is necessary to determine if there are spinal/brain metastases or not.
- Regardless of the technique, it becomes vital to ensure that full resuscitation equipment and more than one management plan are considered.
- At last, but not least, we must be permanently aware of the huge responsibility of safe delivery of one extra patient in the form of one baby.