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Case report

Clinical case report: respiratory depression following intrathecal opioid administration

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A B S T R A C T

Objective: Description of a case of respiratory depression during the late post-operative period in an obstetrics patient who received regional subarachnoidal anesthesia using a local anesthetic and intrathecal morphine.
Methods: The clinical case review, during the monthly review meeting at the Anesthesiology Unit of the National University of Colombia, discusses a clinical case of interest, in accordance with a sequence of topics, e.g.: third delay, when the patient is admitted and the clinical history is taken; fourth delay, when the patient is scheduled for surgery and the anesthesiologist performs the pre-anesthesia assessment, including the anesthetic evaluation and management, monitoring analysis, potential complications and their management, etc.
Result: Each case must generate a clinical discussion based on evidence in the literature and must be part of a competencies approach, including knowledge, know-how and communication skills. This particular case illustrates a sequence of errors that resulted in incidents and even adverse events. The physical evaluation and the considerations pertaining to the anesthetic and surgical procedures must be carefully recorded in the anesthesia record. Likewise, it is important to foresee conditions such as respiratory depression, which is one of the side effects of opioid administration and requires close monitoring and appropriate management.

Reporte de caso clínico: depresión respiratoria por opioide intratecal

R E S U M E N

Objetivo: Describir el caso de depresión respiratoria en el período postoperatorio tardío, el cual se dio en una paciente obstétrica, quien recibió anestesia regional subaracnoidea con anestésico local y morfina intratecal.
Métodos: Discusión de un caso clínico. La secuencia del caso, durante la revisión del servicio mensual en la unidad de Anestesiología de la Universidad Nacional de Colombia, requiere de diferentes discusiones en la medida en que se pasa de un tema de revisión a otro,

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Palabras clave:
Insuficiencia Respiratoria
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verbigracia: tercera demora, cuando la paciente ingresa y se le realiza la historia clínica; cuarta demora, cuando se programa para cirugía y el anestesiólogo realiza la valoración preanestésica, las consideraciones de evaluación y manejo anestésico, el análisis de la monitoría, la anticipación a las complicaciones, el manejo de las mismas, etc.

Resultado: Cada caso debe propiciar la discusión clínica sustentada en la literatura y debe hacer parte de las competencias en el saber y el saber hacer, ser y comunicar. Este caso particular ilustra una secuencia de errores cometidos, los cuales desembocan en incidentes e incluso en eventos adversos. La evaluación física, las consideraciones del procedimiento anestésico-quirúrgico, así como los datos de la monitoría, deben ser consignados rigurosamente en el registro anestésico. De la misma manera, hay que prever condiciones como la depresión respiratoria, uno de los efectos colaterales de los opioides, el cual requiere de una vigilancia estrecha y un manejo apropiado.

Twenty-four year-old female seen on March 19, 2011 because of pain in the right iliac fossa of one day of evolution, associated with small vaginal bleeding. The pelvic ultrasound report included heterogenous fluid in the pelvic cavity, a right adnexal mass, right ovarian cyst rupture versus right ectopic pregnancy. The patient was referred to a Level II hospital where she was admitted with no symptoms.

The patient did not report urinary symptoms, fever or general malaise on systems review. Positive history findings included a C-section performed 10 years before because of unfavorable cervix, menarche at 11 years of age, regular 30-day cycles lasting 3 days, last menstruation on February 28, 2011, and date of the last delivery December 31, 2000, with the following obstetrical diagnosis: Gravida 1, Para 1, Live birth 1, C-section 1.

On physical examination, the patient was in good general condition, with a blood pressure of 134/72 (mean of 97), heart rate 110 per minute, respiratory rate 18 per minute, ambient oxygen saturation 94%, body temperature 37°C. The patient reported pain on palpation in the right iliac fossa, but there was no defensive muscle reaction or signs of peritoneal irritation, and Blumberg's sign was negative. The finding on vaginal palpation was a central closed cervix with no pain on mobilization.

A pregnancy test came back positive, leading to the request for a BHCG test in order to assess the viability of the pregnancy and determine the need to admit the patient. The result of the BHCG test came back on the next day at 352.5 mIU/ml (in non-pregnant women, values are under 5 mIU/ml), consistent with a four-week pregnancy. A new transvaginal ultrasound was performed and three hours later the patient reported abdominal pain with mild genital bleeding.

Vital signs after that finding were the following: blood pressure 109/60, heart rate 73 per minute, respiratory rate 20 per minute, oxygen saturation 97%. The patient showed signs of peritoneal irritation on abdominal palpation and evidence of scarce, non-fetid hematic lochia. The ultrasound revealed a right ruptured ectopic pregnancy that resulted in the decision to perform a laparotomy.

Discussion

The obstetric and gynecology service should have considered the possibility of finding an ectopic pregnancy on the initial ultrasound, given the risk of rupture of this lesion, which then became evident on ultrasound. Upon admission, it was considered that the patient required hematocrit or hemoglobin (Hb) assessment due to the probability of intra-abdominal bleeding. However, some of the professors were of the opinion that this test was not important and decided to ask for blood products and proceed with an emergency surgery. The consensus conclusion regarding this point was that laboratory tests (Hb or Hct) should have been done due to the patient's clinical status and the possibility of potential complications.

Expectant medical management of this condition must follow established clinical criteria, and the decision on the therapeutic approach is up to the treating specialist only.[1] Aside from the clinical assessment, it is important to perform all the laboratory tests required in order for the anesthetist to approach in a comprehensive manner.[2]

The second issue that lends itself to discussion in this case is the pre-anesthetic assessment, which resulted in the following information:

- Surgical pathology: ectopic pregnancy.
- Anesthetic and surgical history: uncomplicated C-section under regional anesthesia.
- Obstetrics history: Gravida 2, Para 1, C-section 1.
- Full stomach: no.
- Physical examination: Blood pressure 134/72, heart rate 84 per minute, respiratory rate 20 per minute. Good general condition. Short cervix: no. Mental-thyroid distance >6 cm. Cardiopulmonary: no abnormalities. Abdomen: soft, increased uterine size, ASA 2.

The diagnosis did not consider the fact that the ectopic pregnancy had already been classified as ruptured, meaning that both the physical status and the surgical risk classifications were necessarily higher and, consequently, the