

RELATO DE CASO

CASE REPORT: PERIDURAL CATERER RUPTURE DURING ANESTHETIC ACT

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 ACESSO LIVRE

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RESUMO

A ruptura do cateter peridural é uma condição raramente descrita na literatura, sendo considerada rara. Os relatos sobre o assunto apresentam discussões sobre as possíveis causas e consequências no ato anestésico. As discussões sobre complicações são ainda mais raras, entre elas sintomas neurológicos, dor, inflamação, avulsão da raiz ou complicações infecciosas. Assim, este caso clínico descreve um evento de ruptura do cateter peridural em uma paciente durante analgesia pré-operatória, tratada por cirurgia. Os dados foram obtidos por meio de revisão do prontuário, entrevista com o paciente, registro fotográfico dos métodos diagnósticos e revisão da literatura. Paciente A. C., sexo feminino, 28 anos, 55 kg, 1,64 m, GIPI, com história prévia de dor em hipocôndrio direito, associada a náuseas e vômitos, com diagnóstico de coledocolitíase e encaminhada ao centro cirúrgico para colecistectomia convencional. Durante a inserção do cateter para anestesia no espaço peridural torácico, a paciente relatou parestesia em membro inferior direito. Ao retirar o conjunto agulha-cateter sob resistência, houve ruptura do mesmo. Optou-se pela realização de exames de imagem, que evidenciaram fragmento de cateter na tomografia axial computadorizada. Como o paciente era sintomático, foi realizado procedimento cirúrgico de urgência.

Palavras-chave: anestesia peridural; complicações; cateter peridural; quebrar.

ABSTRACT

Epidural catheter rupture is a condition rarely described in the literature, being considered rare. The reports on the subject present discussions about the possible causes and consequences in the anesthetic act. Discussions about complications are even rarer, of which neurological symptoms, pain, inflammation, root avulsion or infectious complications. Thus, this clinical case describes an event of epidural catheter rupture in a patient during preoperative analgesia, treated by surgery. Data were obtained through a review of the medical record, interview with the patient, photographic record of the diagnostic methods and review of the literature. Patient A. C., female, 28 years old, 55 kg, 1.64 m, GIPI, with previous history of pain in right hypochondrium, associated with nausea and vomiting, diagnosed with choledocholithiasis and taken to the surgical center for conventional cholecystectomy. During insertion of the catheter for anesthesia in the thoracic epidural space, the patient reported paresthesia in the right lower limb. When withdrawing needle-catheter assembly under resistance, there was rupture of the same. It was decided to perform imaging tests, which showed a catheter fragment in the computed axial tomography. Since the patient was symptomatic, an emergency surgical procedure was performed.

Keywords: epidural anesthesia; complications; epidural catheter; break.

INTRODUCTION

Epidural catheter rupture is a condition rarely described in the literature and is therefore considered rare. The reports on the topic present discussions about the possible causes and consequences of this iatrogenic on the anesthetic act. It is known that the epidural catheter has characteristics to be punctuated for the choice of an ideal catheter, among them we can mention: disposability, flexibility, stretchability. In addition, another aspect to be observed is the material of manufacture of the catheter (nylon, biocompatible polyamide or polyurethane), if it has facilitator device for introduction, if the injection connector is hermetic and tensile resistant, if the tip of the catheter is rounded to avoid trauma, if there are marks that aid in the positioning, among other characteristics that will aid in the success of the anesthetic procedure. (ASAI et al., 2001)

Epidural anesthesia and its physiological effects depend mainly on the level achieved by the blockade, and this is determined by the height of the injection and the injected anesthetic mass. One of the advantages of epidural block is to attenuate the state of post-operative hypercoagulability by improving fibrinolytic function, reducing the neuro-endocrine-metabolic response to surgical stress, optimizing venous blood flow and allowing early mobilization. Among the contraindications of this procedure we can mention the patient's refusal, local infection, hypovolemia, coagulation disorder, high predictable bleeding, anatomical abnormalities. Lumbar pain, inadvertent puncture of the dura mater, inadvertent subarachnoid injection, headache, epidural hematoma and, lastly, less common, neurological lesions are probable complications of this procedure. (FRANÇA et al., 2015)(GOUVEIA, 1970)(TANAKA; TANAKA, 2007)

Nonetheless, literary reports of the complications of epidural catheter rupture are even rarer, such as neurological symptoms, pain, inflammation, root avulsion, or infectious complications. Thus, this clinical case describes an event of epidural catheter rupture in a patient during preoperative analgesia, treated by surgery.

GOAL

To describe the case of epidural catheter rupture in a patient during preoperative analgesia, treated by surgery.

METODOLOGIA

The data were obtained through a review of the medical record, interview, photographic record of the diagnostic methods to which the patient was submitted and literature review.

CASE REPORT

Patient A. C., female, 28 years old, 55 kg, 1.64 m, GIPI, with previous history of pain in right hypochondrium, associated

with nausea and vomiting, beginning 1 year in the first month of gestation. It evolved with persistence of pain and was diagnosed with choledocholithiasis and high-risk gestation in another service. After delivery, there was progressive worsening of pain. He entered this hospital unit with intense epigastralgia accompanied by uncontrollable vomiting of difficult control. Laboratory tests showed increased transaminases, normal bilirubins and amylase. USG performed abdomen showing choledochal duct with 1.2 cm diameter and calculus in distal portion. Patient allergic to dipyrone, without comorbidities, with physical status classification through the American Society of Anesthesiology (ASA II).

The patient was referred to the surgical center for conventional cholecystectomy under epidural anesthesia. Monitored with pulse oximetry, capnograph, cardiac monitor and noninvasive blood pressure. Peripheral venous access was obtained with an 18G plastic catheter in the upper left limb. Patient positioned seated, performed antisepsis in a thoracolumbar region and identified an epidural space through the technique of loss of resistance with serum, obtaining a clear cerebrospinal fluid in the space between T10-T11, paramedian puncture was performed thoracic 18G needle and administered dose test of 60 mg lidocaine at 2% without changes in the physiological factors. After the epidural catheter, the patient reported paresthesia in the right lower limb. Retracted needle-catheter assembly with small resistance, rupture of the catheter was noted. Attempts to remove with gentle traction were performed in the same insertion position and in lateral decubitus without success.

Radiography was requested in the surgical center bed, in which it was not possible to visualize the fragment of the catheter. Computed tomography (CT) was also performed, in the same way, unsatisfactory for visualization of the fragment. Magnetic Resonance Imaging (MRI) of the thoracic spine confirmed the presence of a foreign body in T9 to T12. Subsequently, she was submitted to Emergency Laminectomy (ER) under general anesthesia. A thoracic incision was performed, identifying the location of the distal tip of the catheter in the subcutaneous T10, which was removed without interurrences, and the bone marrow remained intact without signs of contusion or fistula. During this hospitalization, ERCP and Videolaparoscopic Cholecystectomy were performed without interurrences. Patient evolved well, without neurological deficits and clinically asymptomatic, receiving discharge 20 days after the puncture accident.

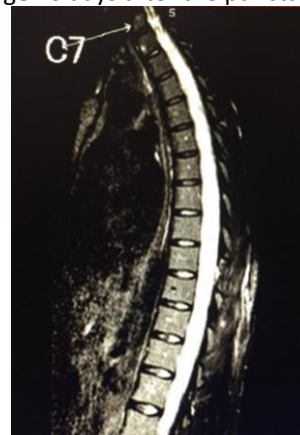


Figure 1. Cervical-thoracic-lumbar magnetic resonance imaging (MRI) in STIR sequence, sagittal plane, with presence of a foreign body emitting hypersignal of T9-T12.

DISCUSSION

Epidural catheter rupture is a rare occurrence. In the literature, 30 cases were reported in the period 1957 to 2008. Of these, there is no puncture data in the thoracic region. (BECHARA and HOBAIKA, 2008) Several causes of rupture have been reported, including resistance to catheter removal due to node formation during excessive insertion, which restricts passage in the yellow ligament during extraction, entrapment between supra and interthrombin ligaments, force employed in the introduction and withdrawal, manufacturing defects, and withdrawal of the catheter through the needle. Catheter introductions by more than 4.5 to 5 centimeters corroborate this outcome. (DOUNAS et al., 2002)(MOLINA-GARCÍA et al., 2018)

Removal of the catheter should be carried out with the use of continuous traction without the application of excessive force or manipulation with object that increases the risk of rupture and with the patient in the same insertion position. If ineffective, other degrees of flexion or extension of the spine are chosen. The introduction of physiological saline solution in order to lubricate the canal allows the catheter to slide more easily (DOUNAS et al., 2002) 19G catheters tend to break close to the tip, so they are less safe than 20G catheters, which tend to break at the traction site. (BECHARA, HOBAIKA, 2008) There are no discussions on the use of 18G catheter in published studies, which limits the analysis of the practical application of this material in other centers and its probable correlation with anesthetic accidents.

Evidence of the foreign body in imaging tests is not an elective factor for a surgical approach. The LE is reserved for patients with neurological deficits, presence of cerebrospinal fluid fistula, signs and symptoms of infection, catheter placement in the subarachnoid space or inuendo to the skin surface. The intrathecal location of the fragment predisposes the potential risk of formation of granuloma, infection, abscess, radiculopathy and spinal hematoma. In asymptomatic patients, expectant management is performed, since the catheter is considered an inert and sterile material. (SBARDELOTTO et al., 2008)

There are reports of clinical follow-up of patients up to 36 months with favorable evolution, without neurological deficits and other severities. (GARCIA, TERESA; FONSECA, 2012)(SBARDELOTTO et al., 2008) A study of a surgical elective treatment in an asymptomatic patient, due to migration of the catheter fragment observed in the control radiograph after 4 weeks of the occurrence of catheter rupture (Fig. , in order to prevent possible neurological deficits due to root trauma following this displacement. (TARUKADO et al., 2015)

The rupture of the catheter during the anesthetic act was supposedly due to the force employed in the traction added to the needle section in the withdrawal of the catheter-needle assembly. The neurosurgeon chose the MRI to visualize the fragment and, once located, it was performed the LE for removal and resolution of the patient's neurological condition, sufficient condition for indication of surgical treatment. The

clinical and radiological evaluation in the follow-up of asymptomatic patients with potential risk of neurological complications, as a consequence of the foreign body deposition in the neuraxis, can convert the expectant management into surgical.

CONCLUSION

This complication resulted from failure of the technique employed with catheter amputation in the needle handling during the anesthetic act. Patient symptomatology was determinant for the choice of surgical extraction and resolution of the patient's neurological status.

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