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SURGICAL DRAINAGE OF A CUTANEOUS ABSCESS IN PATIENT WITH MULTIPLE SCLEROSIS AND EHRLES-DANLOS SYNDROME: A CASE REPORT

THAIS LIMA DOURADO[1], GUSTAVO SIQUEIRA ELMIRO[1], BRUNO ALVES RODRIGUES[1], GIULLIANO GARDENGHI[1,2,3]

1. Clínica de Anestesia de Goiânia (CLIANEST) – Goiânia/GO
2. Hospital ENCORE– Aparecida de Goiânia/GO
3. Instituto de Neurologia de Goiânia – Goiânia/GO

ABSTRACT

Introduction: Multiple sclerosis (MS) and Ehlers-Danlos syndrome (EDS) pose specific challenges to anesthetic management, particularly in the setting of active infection and polypharmacy. Careful selection of anesthetic technique is essential to minimize hemodynamic instability, neurological worsening, and tissue injury. **Case report:** A 38-year-old woman with MS, EDS and hypothyroidism, on beta-interferon, levothyroxine, escitalopram, zolpidem and daptomycin, was scheduled for surgical drainage of a cutaneous abscess in the lower limb. General anesthesia was induced with propofol and fentanyl and maintained with sevoflurane under spontaneous ventilation through a laryngeal mask airway. Ultrasound-guided femoral nerve block and lateral femoral cutaneous nerve block were performed using 0.5% ropivacaine to provide regional analgesia. Intraoperative monitoring showed stable hemodynamics, adequate oxygenation and ventilation, without adverse events. No new neurological deficits or block-related complications were observed in the immediate postoperative period. **Conclusion:** Low-dose balanced general anesthesia with laryngeal mask airway, spontaneous ventilation and ultrasound-guided peripheral nerve blocks proved to be a safe and effective strategy for abscess drainage in a patient with MS and EDS, and may be considered a prudent alternative to neuraxial anesthesia in similar complex scenarios.

Keywords: Multiple sclerosis, Ehlers-Danlos syndrome, General anesthesia, Peripheral nerve block, Abscess; Case report.

INTRODUCTION

Multiple sclerosis (MS) is a chronic inflammatory demyelinating disease of the central nervous system, with the potential for relapses triggered by infection, hyperthermia, surgical stress, metabolic disturbances, and significant hemodynamic variations.[1,2] Both general and regional anesthesia techniques may be used in patients with MS, provided that normothermia, cardiovascular stability, and adequate neurological monitoring are maintained.[1,2]

Ehlers–Danlos syndrome (EDS) comprises a group of hereditary connective tissue disorders

characterized by joint hypermobility, cutaneous and vascular fragility, a predisposition to bruising, and potential difficulties with vascular access, airway management, and needle punctures.[3,4] Atraumatic handling, careful patient positioning, and heightened awareness of hemorrhagic risk and tissue-related complications are recommended.[3,4]

The coexistence of MS, EDS, hypothyroidism, and the use of immunomodulatory agents, psychotropic medications, and antimicrobials increases the complexity of anesthetic planning, particularly in the presence of an active infectious focus. This case report describes the anesthetic management of a patient with MS and EDS, along with multiple comorbidities, undergoing drainage of a lower limb abscess, emphasizing the use of balanced general anesthesia combined with ultrasound-guided peripheral nerve blocks as a safe alternative to neuraxial anesthesia.

CASE REPORT

A 38-year-old female patient with a history of multiple sclerosis, Ehlers–Danlos syndrome, and hypothyroidism, under regular outpatient follow-up, classified as ASA physical status II. She was receiving levothyroxine, escitalopram, zolpidem, and regular beta-interferon therapy for multiple sclerosis. In the context of a soft tissue infection, she was also being treated with daptomycin as prescribed by the infectious disease team.

She was admitted to the hospital presenting with severe pain, hyperemia, local warmth, erythema, and areas of fluctuation in the lower limb. A diagnosis of a cutaneous abscess of the lower limb was established, with an indication for surgical drainage on a relative urgent basis.

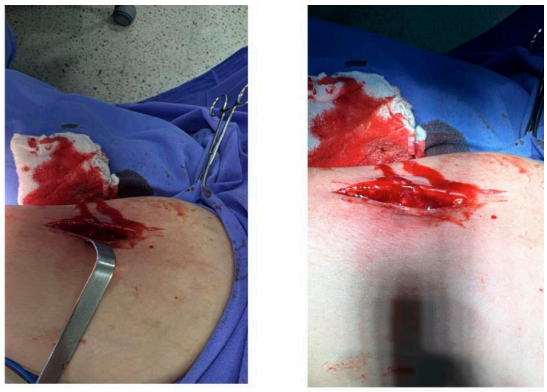

Figure 1. Intraoperative aspects of cutaneous abscess drainage in the lower limb. (A) Initial incision revealing a purulent collection and infiltrated margins of the subcutaneous tissue. (B) Enlargement of the incision with full exposure of the cavity and removal of purulent content, allowing adequate drainage and debridement.

On preanesthetic evaluation, the patient was in good general condition, afebrile, conscious and oriented, with no new neurological deficits compared with baseline. Cardiopulmonary examination revealed no significant abnormalities. Laboratory tests were within acceptable limits for the procedure (final medical records were not available for comparison to assess possible changes). There was no history of previous anesthetic complications.

The following critical considerations were identified: risk of MS exacerbation, tissue and vascular fragility associated with Ehlers–Danlos syndrome, the need for an atraumatic technique, maintenance of normothermia, and assessment of potential drug interactions. Neuraxial anesthetic techniques were not employed due to the presence of a demyelinating disease, a connective tissue disorder, and the availability of a safe alternative using peripheral nerve blocks.

Anesthetic technique

In the operating room, standard monitoring was established, including continuous electrocardiography, noninvasive blood pressure, pulse oximetry, and capnography.

Balanced general anesthesia was performed with intravenous induction using propofol 100 mg and fentanyl 60 mcg, followed by insertion of an appropriately sized laryngeal mask airway. Spontaneous ventilation was maintained with oxygen and sevoflurane at concentrations titrated to the anesthetic depth.

As an analgesic adjunct, an ultrasound-guided femoral nerve block and an ultrasound-guided lateral femoral cutaneous nerve block were performed, using 0.5% ropivacaine in a volume appropriate to cover the surgical field, avoiding needle insertion in areas with signs of inflammation.

Intraoperative course

The surgical procedure was completed without complications (Figure 1). Multiparametric monitoring records demonstrated stable vital signs throughout the procedure, with heart rate ranging from 74 to 97 bpm in sinus rhythm; oxygen saturation between 95% and 100%; capnography showing regular waveforms with end-tidal carbon dioxide values between 38 and 49 mmHg; and noninvasive blood pressure ranging approximately from 98/61 mmHg to 126/99 mmHg (Figure 2).

Figure 2. Images from the multiparameter monitor demonstrating stable hemodynamic and ventilatory parameters throughout the procedure. Panels 2A and 2B correspond to the initial phase of anesthesia, whereas panels 2C and 2D represent the period after tracheal extubation, with continued stability of vital signs. No vasopressor support was required, and there were no episodes of desaturation, arrhythmias, or ventilatory difficulty.

Figure 2. (A) Patient positioning for pre-oxygenation. (B) Video laryngoscopy.

No vasopressor support was required, and there were no episodes of desaturation, bronchospasm, arrhythmias, or ventilatory difficulty with the laryngeal mask airway. The abscess drainage procedure was completed without complications.

At the end of the procedure, sevoflurane was gradually reduced while maintaining adequate spontaneous ventilation. The laryngeal mask airway was removed at a safe superficial anesthetic plane, with the patient awake, cooperative, hemodynamically stable, and with satisfactory analgesia. In the post-anesthesia care unit, she reported no new neurological complaints and showed no signs of complications related to the peripheral nerve blocks or the airway. The patient remained hospitalized for continued clinical follow-up and infection control.

DISCUSSION

This case highlights the challenges and strategies involved in the anesthetic management of a patient with multiple sclerosis and Ehlers–Danlos syndrome in the context of an active infection. In multiple sclerosis, factors such as infection, hyperthermia, and hemodynamic instability may precipitate transient worsening or disease relapses, thus requiring careful anesthetic planning.[1] The literature reports the safe use of both general and regional anesthesia, emphasizing the importance of individualized management, strict maintenance of normothermia, and perioperative neurological vigilance.[1] In the present report, the choice of low-dose general anesthesia with sevoflurane, spontaneous ventilation, and continuous monitoring adhered to these principles and allowed adequate anesthetic control with minimal neurological interference.

In Ehlers–Danlos syndrome, tissue and vascular fragility demand heightened attention to patient positioning, needle punctures, and airway management.[3,4] The use of a laryngeal mask airway, inserted with a gentle technique, may reduce the risk of mucosal and cervical structure trauma when compared with orotracheal intubation in selected patients. Additionally, the use of ultrasound-guided peripheral nerve blocks enhances precision, reduces the number of needle punctures, and allows lower volumes of local anesthetic, thereby increasing safety, particularly in scenarios where infected areas must be avoided.[3,4]

Furthermore, the association of peripheral nerve blocks with general anesthesia proved advantageous by providing effective analgesia, reducing the need for systemic opioids, and attenuating the surgical stress response, aspects that are particularly relevant in patients with multiple sclerosis. This approach may contribute to greater autonomic stability and a lower risk of perioperative neurological exacerbations, as suggested by clinical series and previous case reports.[5,6] The observed hemodynamic stability, absence of respiratory events, adequate spontaneous ventilation, and lack of immediate neurological deterioration further support the feasibility of the chosen strategy.[5,6]

The decision not to perform neuraxial anesthesia was based on the combination of present risk factors, including a demyelinating disease, a connective tissue disorder, and the availability of an effective and less invasive analgesic alternative. This approach aligns with a prudent strategy frequently recommended in complex situations in which the cumulative potential risks may outweigh the benefits of central neuraxial blockade.[5,6] The absence of hemodynamic instability, respiratory events, or immediate postoperative neurological worsening reinforces

the feasibility and safety of the adopted anesthetic strategy.[5,6]

CONCLUSION

The combination of low-dose balanced general anesthesia using a laryngeal mask airway, maintenance of spontaneous ventilation, and ultrasound-guided peripheral nerve blocks with 0.5% ropivacaine proved to be a safe and effective strategy for lower limb abscess drainage in a patient with multiple sclerosis, Ehlers–Danlos syndrome, and hypothyroidism. This case reinforces the importance of individualized anesthetic techniques, careful selection of analgesic methods, and rigorous monitoring in the management of patients with multiple rare comorbidities.

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MAILING ADDRESS

GIULLIANO GARDENGHI
CET – CLIANEST, AV. T-32, 279 - Setor Bueno, Goiânia - GO, Brasil.
E-MAIL: coordenacao.cientifica@ceafi.edu.br

EDITORIAL AND REVIEW

Chief editors:

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Authors:

Thais Lima Dourado - http://lattes.cnpq.br/0747280828692715 - https://orcid.org/0009-0007-7017-5235

Gustavo Siqueira Elmiro - http://lattes.cnpq.br/4765163399934337- https://orcid.org/0000-0003-2113-8757

Bruno Alves Rodrigues - http://lattes.cnpq.br/9742678649923053 - https://orcid.org/0000-0001-8433-9869

Giulliano Gardenghi - http://lattes.cnpq.br/1292197954351954 - https://orcid.org/0000-0002-8763-561X

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