



Surgical Treatment of Chronic Subdural Hematoma under Local Anesthesia: Case Report and Literature Review

Tratamento Cirúrgico de Hematoma Subdural Crônico sob Anestesia Local: Relato de Caso e Revisão de Literatura

Carlos Umberto Pereira¹  Débora Moura da Paixão Oliveira²  Lauro Roberto de Azevedo Setton³ 

¹ Department of Neurosurgery, Emergency Hospital (HUSE), Aracaju, Sergipe, Brazil.

² Brazilian Nursing Association in Neurology and Neurosurgery, Aracaju, Sergipe, Brazil.

³ Tiradentes University, Aracaju, Sergipe, Brazil.

Address for correspondence Carlos Umberto Pereira MD, PhD, Department of Neurosurgery, Emergency Hospital (HUSE), Av. Augusto Maynard, 245/404, Bairro São José, 49015-380 Aracaju, Sergipe, Brasil (e-mail: umberto@infonet.com.br).

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Abstract

Introduction Optimal surgical treatment for chronic subdural hematoma (CSDH) in the elderly has been controversial. Whenever possible, a less invasive technique should be used to avoid complications.

Case Report The patient was 82-years-old, with JPS; with diagnosis of liver cirrhosis due to alcohol abuse and history of recent myocardial infarction. He was admitted to the emergency room with temporal-spatial disorientation. The Glasgow coma scale (GCS) value on admission was 9. Left hemiparesis and osteotendinous hyperreflexia in the left side of the body. Noncontrast-enhanced cranial computed tomography (CT) showed right frontoparietal hypodense lesion with mass effect. Due to the clinical conditions of the patient, drainage of the hematoma was indicated through local anesthesia and sedation with midazolam. He was discharged after 8 days with improvement in his mental and neurological condition.

Conclusion Drainage of CSDH using local anesthesia in an elderly person with severe comorbidity can reach excellent results.

Keywords

- ▶ chronic subdural hematoma
- ▶ general anesthesia
- ▶ local anesthesia
- ▶ treatment

Resumo

Palavras-chave

- ▶ hematoma subdural crônico
- ▶ anestesia geral
- ▶ anestesia local
- ▶ tratamento

Introdução O tratamento cirúrgico ideal para hematoma subdural crônico (HSDC) em idosos tem sido controverso. Sempre que possível uma técnica menos invasiva deve ser utilizada para evitar complicações.

Relato do Caso Paciente de 82 anos portadora de JPS; com diagnóstico de cirrose hepática por abuso de álcool e história de infarto do miocárdio recente. Foi admitido no pronto-socorro com desorientação espaço-temporal. O valor da escala de coma de Glasgow (ECG) na admissão era 9. Hemiparesia esquerda e hiperreflexia osteotendinosa no lado esquerdo do corpo. A tomografia computadorizada (TC) de crânio sem

received
April 14, 2023
accepted
July 5, 2023

DOI <https://doi.org/10.1055/s-0043-1774750>.
ISSN 0103-5355.

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contraste mostrou lesão frontoparietal hipodensa direita com efeito de massa. Devido às condições clínicas do paciente foi indicada drenagem do hematoma através de anestesia local e sedação com midazolam. Teve alta após 8 dias com melhora do quadro mental e neurológico.

Conclusão A drenagem do HDC com anestesia local em idoso com comorbidade grave pode alcançar excelentes resultados.

Introduction

Chronic subdural hematoma (CSDH) is a common problem in neurosurgery and occurs mainly in the elderly.¹ In most cases, it results from mild cranioencephalic trauma.² Generally, the treatment is surgical. Anesthesia for this procedure can be general or local.³ The elderly usually has systemic comorbidities and, in many cases, general anesthesia is contraindicated.⁴⁻⁷ Drainage for this condition can be performed under local anesthesia, in previously selected patients, with excellent results.^{8,9}

The authors review and discuss the indication of local anesthesia in the treatment of CSDH drainage.

Case Report

The patient is male, 82-years-old, with JPS; as well as a diagnosis of liver cirrhosis due to alcohol abuse and recent myocardial infarction, during which he underwent placement of two stents. There was no history of accidental fall. He presented with time and space disorientation. The Glasgow coma scale (GCS) score was 9. Lens clouding interfered with fundus examination. Other symptoms include hemiparesis and osteotendinous hyperreflexia on the left side. Computed tomography (CT) of the skull without contrast showed a hypodense lesion in the right frontoparietal region with mass effect. Due to the patient's comorbidities, a local anesthesia and sedation with midazolam maleate were chosen for drainage of the hematoma. A control cranial CT performed 5 days after the intervention showed a marked reduction in the hematoma. He was discharged from the hospital 8 days after the surgical procedure, with improvement to his mental and neurological condition. The patient was guided regarding the use of specific medication and outpatient return.

Discussion

Several neurosurgical procedures have been used in the surgical treatment of CSDH.¹ The best treatment method is still controversial today. Although the basic treatment for CSDH is surgical, conservative therapy can be chosen if there is no significant accumulation of blood that compromises the cerebral cortex and without any significant clinical manifestation.¹⁰ Trepanation followed by drainage of the hematoma has been the most frequent surgical procedure in elderly with CSDH.¹¹⁻¹⁵ Whenever possible,

the least invasive technique should be used to avoid complications.

General or local anesthesia, when carefully performed, has minimal complications in the surgical treatment of CSDH.^{9,16-18} The indication of general or local anesthesia depends on the protocol established in the service, or on the medical professional's preference.^{19,20} Systemic diseases coexist in the elderly, resulting in contraindications for general anesthesia.³ In these cases, the use of local anesthesia is a favorable alternative for draining the CSDH.^{8,9}

General anesthesia promotes complete immobility and good comfort, but it has been associated with a series of complications, especially among elderly patients with chronic systemic diseases such as diabetes mellitus, arterial hypertension, myocardial infarction, and the use of antiplatelet drugs.^{21,22} General anesthesia can cause a delay in the preoperative level of consciousness, which has a negative impact, especially in cases that require an immediate postoperative evaluation, to exclude the need to repeat the procedure due to an early recurrence of the hematoma.^{3,10}

Local anesthesia for draining the CSDH has been used by several authors; the main downside is that patients may become anxious and feel discomfort during the procedure.²³ The selection of the anesthetic method can be individualized.⁵ For Surve et al.,²⁴ sedation consists of using midazolam with beneficial results.

Both coagulated blood and multiloculated hematoma were removed using local anesthesia in elderly patients.^{2,20,25,26} Other authors have shown that local anesthesia with sedation for surgical drainage of the CSDH can reduce the risk of intraoperative brain activity, avoiding complications that could occur with the use of general anesthesia.^{27,28} Mersha et al.,¹ in their sample of 195 patients, performed a burr hole, intraoperative lavage under local anesthesia, and a closed drainage system postoperatively, with a single professional; 95.2% of cases had good recovery, 13% were reoperated due to recurrence of the hematoma, and there were 4 deaths. These authors concluded that a single burr hole, intraoperative irrigation, and closed drainage system under local anesthesia, with occasional sedation in patients who are uncooperative due to altered mental status, is an easy, safe, and effective surgical technique in the treatment of CSDH. Seizur et al.²³ used two trepan holes to better determine the limits of the hematoma. The mean duration of the procedure using local anesthesia is

shorter compared with general anesthesia.^{3,29} This reduction in procedure time may reduce the risk of thromboembolism, hypothermia, and other intraoperative adverse events.³ According to Salama,¹⁰ the treatment of CSDH through a single trepan hole under local anesthesia is careful, safe, being indicated mainly for cooperative patients who have unilocular CSDH and, as a result, have a shorter length of stay, lower hospital costs, and a lower rate of postoperative complications.

Many authors suggest that the treatment of CSDH by means of a single trepanation under monitored anesthesia is careful, effective, and sufficient for patients with cooperative unilocular CSDH, with a shorter mean duration of the procedure when compared with procedures under general anesthesia. Therefore, the use of local anesthesia results in shorter hospital stays, lower treatment costs, and lower rate of postoperative complications.^{3,29}

In patients undergoing local anesthesia, easier early mobilization is observed, thus reducing the incidence of postoperative deep venous thrombosis and pulmonary atelectasis, which can make intensive care unit admission necessary.¹⁰ be reduced in patients undergoing local anesthesia, making the procedure more economical and reducing the possibilities of developing nosocomial infection.^{1,7,30} Despite the indication of surgical treatment for CSDH still being controversial, a less invasive surgical technique under local anesthesia should be encouraged in selected cases.²⁴

Conclusion

The literature suggests that more cases should be performed with local anesthesia to better manage the less invasive treatment of CSDH, especially in high-risk elderly patients.

Conflict of Interests

The authors have no conflict of interests to declare.

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