

## Acute Positional Brachial Plexopathy Following Cannabis Intoxication: Radiological Assessment with MRI and Ultrasound

Jihane Hamdane<sup>1\*</sup>, C. Chbichib<sup>1</sup>, Y. Bouktib<sup>1</sup>, A. Elhajjami<sup>1</sup>, B. Boutakioute<sup>1</sup>, M. Ouali Idrissi<sup>1</sup>, N. Cherf Idrissi Guenouni<sup>1</sup><sup>1</sup>Department of Radiology, Arrazi Hospital, Mohamed VI University Hospital, MarrakechDOI: <https://doi.org/10.36347/sjmcr.2026.v14i05.095>

| Received: 08.04.2026 | Accepted: 22.05.2026 | Published: 26.05.2026

\*Corresponding author: Jihane Hamdane

Department of Radiology, Arrazi Hospital, Mohamed VI University Hospital, Marrakech

## Abstract

## Case Report

Brachial plexopathy includes a wide range of disorders affecting the brachial plexus, with etiologies such as trauma, neoplasia, inflammation, and positional compression. Positional brachial plexopathy is an uncommon but well-recognized complication of prolonged immobilization, particularly in patients with altered consciousness. We report the case of a 25-year-old patient admitted for impaired consciousness secondary to cannabis intoxication, complicated by prolonged immobilization with compression of the right upper limb. The patient developed a right flaccid monoparesis. Magnetic Resonance Imaging (MRI) and ultrasound (US) of the brachial plexus demonstrated inflammatory changes consistent with right positional brachial plexopathy. This case emphasizes the complementary role of MRI and ultrasound in the assessment of non-traumatic brachial plexus injuries [1,2].

**Keywords:** Brachial plexopathy, MRI, ultrasound, positional neuropathy, cannabis intoxication.

**Copyright © 2026 The Author(s):** This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

### INTRODUCTION

Brachial plexopathy refers to dysfunction of the brachial plexus nerves, leading to motor, sensory, and reflex impairment of the upper limb. Etiologies include traumatic injury, tumors, radiation-induced neuropathy, inflammatory conditions, and compressive or positional mechanisms [3].

Positional brachial plexopathy typically occurs following prolonged abnormal positioning, particularly in patients with altered consciousness due to intoxication or sedation [6,8]. Imaging plays a central role in diagnosis. MRI is the reference standard, while high-resolution ultrasound has emerged as a valuable complementary modality for evaluating nerve morphology and dynamic compression [2,7].

### CASE PRESENTATION

A 25-year-old patient with no relevant medical history was found unconscious in their house with possible cannabis.

#### Intoxication

Patient was hospitalized in an ICU, with drug tests positive for cannabis intoxication. After regaining consciousness, a neurological examination revealed right upper limb flaccid and areflexic monoparesis, with

muscle strength graded at 2/5. No sensory level, cranial nerve involvement, or signs of cervical trauma were observed.

MRI of the brachial plexus was performed with findings in favor of diffuse right plexicopathy (Fig 1 a and b). Findings included: Diffuse, homogeneous hyperintensity on T2-weighted and STIR images involving the right brachial plexus trunks and cords with mild enlargement of the affected nerve elements.

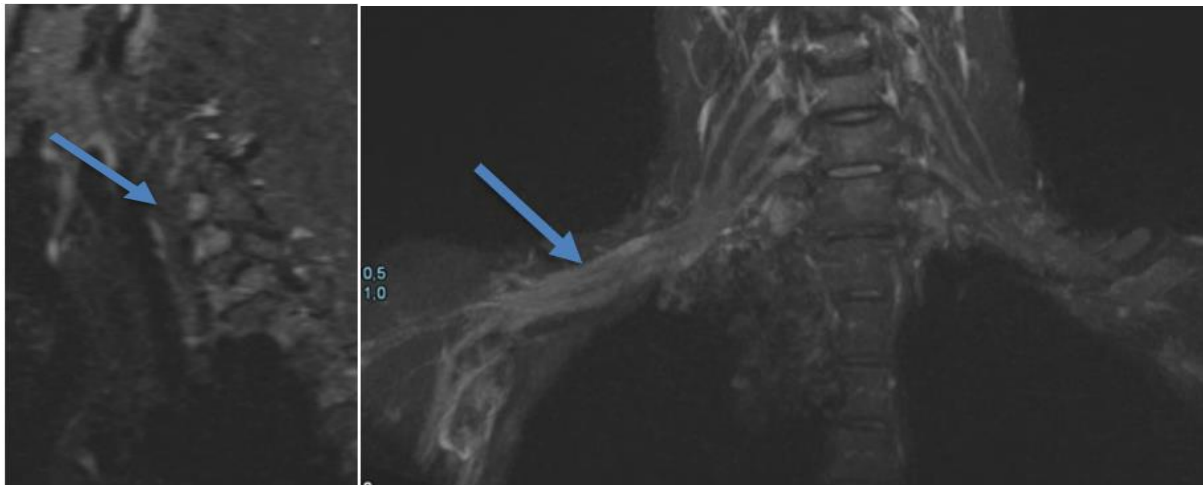
There was no evidence of nerve disruption, focal mass, hematoma, or cervical disc disease, no abnormal medullar signal.

A comparative brachial ultrasound demonstrated: diffuse hypoechoic thickening of the right infraclavicular and supraclavicular brachial plexus, with mild hyperemia, with no evidence of extrinsic compressive mass, hematoma, or vascular abnormality

These ultrasound and MRI findings supported the diagnosis of inflammatory diffuse brachial plexopathy, with possible compressive/positional origin due to lack of other toxic, infectious or inflammatory etiologies, patient recovered right limb function in the following weeks and was discharged.

**Citation:** Jihane Hamdane, C. Chbichib, Y. Bouktib, A. Elhajjami, B. Boutakioute, M. Ouali Idrissi, N. Cherf Idrissi Guenouni. Acute Positional Brachial Plexopathy Following Cannabis Intoxication: Radiological Assessment with MRI and Ultrasound. Sch J Med Case Rep, 2026 May 14(5): 1260-1261.

## Iconography



**Figure 1: MRI STIR coronal MIP (a) and sagittal (b) showing diffuse hyperintensity and mild enlargement of the right brachial plexus (arrows), consistent with inflammatory plexitis**

## DISCUSSION

Positional brachial plexopathy results from prolonged compression and ischemia of the brachial plexus, leading to inflammatory edema and conduction block [6]. Cannabis intoxication may predispose patients to this condition by causing decreased awareness and prolonged immobilization.

Clinically, patients present with flaccid weakness, areflexia, and variable sensory involvement [4]. In the present case, the combination of clinical findings and imaging characteristics supported a non-traumatic etiology.

MRI remains the gold standard for evaluating brachial plexus pathology; however, ultrasound offers several advantages, including real-time assessment, comparison with the contralateral side, and accessibility. The combination of MRI and ultrasound increases diagnostic confidence and helps exclude alternative diagnoses [2,5,7].

## CONCLUSION

Positional brachial plexopathy should be considered in patients presenting with acute upper limb weakness following prolonged immobilization due to intoxication. MRI and ultrasound are complementary imaging modalities that allow accurate diagnosis and

etiological assessment. Early recognition is essential to optimize management and functional recovery.

## REFERENCES

1. van Es HW. Magnetic resonance imaging of the brachial plexus. *Eur Radiol*. 2001 ;11(2) :325–336.
2. Chhabra A, Andreisek G, Soldatos T, *et al*, Magnetic resonance neurography and ultrasound of peripheral nerves. *Eur Radiol*. 2018 ;28(2) :698–707.
3. Bowen BC, Pattany PM, Saraf-Lavi E, *et al*, Brachial plexopathy: clinical and imaging evaluation. *Semin Ultrasound CT MR*. 2004;25(6):484–503.
4. Feinberg JH, Radecki J. Parsonage–Turner syndrome and other causes of brachial plexopathy. *Phys Med Rehabil Clin N Am*. 2013 ;24(1) :99–113.
5. Spinner RJ, Shin AY, Amrami KK. Imaging of the peripheral nervous system. *Neurosurg Clin N Am*. 2008 ;19(1) :1–16.
6. Kim DH, Murovic JA, Tiel RL, *et al*, Mechanisms of injury in brachial plexus lesions. *Neurosurg Focus*. 2004 ;16(5) : E2.
7. Beaulieu JY, Blanchard J, Guérin P. Compressive and positional neuropathies of the upper limb. *Hand Surg Rehabil*. 2016 ;35(1) :1–7.
8. Wittenberg RH, Neumann J, Schaffer O. Brachial plexus lesions following prolonged immobilization. *J Neurol*. 2000 ;247(9) :642–648.