

Abducens Nerve Palsy In Gestational Hypertension: A Case Report and Review of the Literature



Albaro J. Nieto-Calvache, MD;¹ Sara Loaiza-Osorio, MD;²
José Casallas-Carrillo, MD;² María F. Escobar-Vidarte, MSc¹

¹Fundación Valle del Lili, Cali, Colombia

²Clinical Research Center in Fundación Valle del Lili, Cali, Colombia

Abstract

Background: Headache, blurring of vision, and confusion are common neurologic symptoms of hypertensive disorders of pregnancy, whereas abducens nerve palsy during pregnancy is an extremely rare condition.

Case: A 28-year-old woman with gestational hypertension presented isolated sixth cranial nerve palsy after delivery. Neither simple resonance nor angioresonance showed alterations. No other specific pathology was found. Symptoms of abducens nerve palsy resolved spontaneously.

Conclusion: Abducens nerve palsy is an unusual condition. We present a review of the literature finding eight documented cases of hypertensive disorders of pregnancy associated with sixth nerve palsy. This case is the ninth reported case.

Résumé

Contexte : Les céphalées, la vision trouble et la confusion sont des symptômes neurologiques courants des troubles hypertensifs de la grossesse. Il est très rare qu'une paralysie du nerf moteur oculaire externe survienne chez la femme enceinte.

Cas : Une femme de 28 ans connue pour hypertension gravidique a présenté une paralysie isolée du nerf moteur oculaire externe après son accouchement. Aucune atteinte n'était visible à l'IRM ni à l'angiographie par résonance magnétique, et aucune pathologie particulière n'a été décelée. Les symptômes paralytiques se sont résorbés spontanément.

Conclusion : La paralysie du nerf moteur oculaire externe est inhabituelle. Nous présentons une revue des huit cas documentés de troubles hypertensifs de la grossesse associés à cette affection. Il s'agit ici du neuvième cas signalé.

Key Words: Hypertension, preeclampsia, pregnancy, paralysis, sixth nerve, eclampsia

Corresponding Author: Dr. Albaro J Nieto-Calvache, Fundación Valle del Lili, Cali, Colombia. albarojosenieto@yahoo.com

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INTRODUCTION

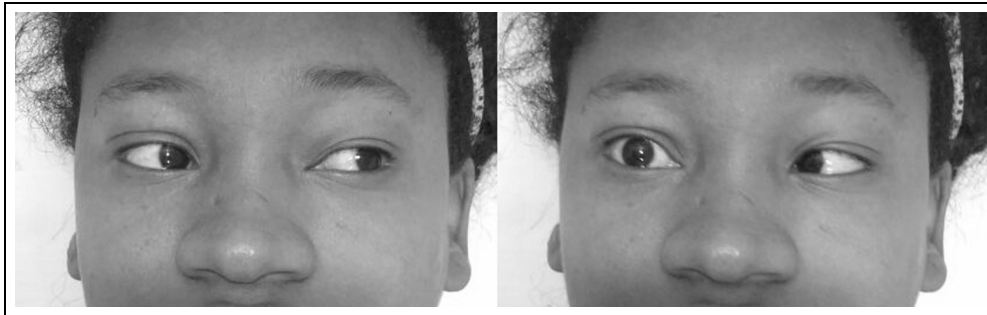
Hypertensive disorders of pregnancy (HDP) can be connected to a wide spectrum of neurological alterations, from headaches to ischemic stroke, with severe cognitive impairment.¹ Abducens nerve palsy during pregnancy is extremely rare; the causes are difficult to establish due to the extensive intracranial pathway of this nerve, but are thought to include vascular disease, infection, trauma, and neoplasms.^{2,3}

We present the case of a patient with a diagnosis of gestational hypertension who developed abducens nerve palsy after childbirth; this association with HDP has been reported in only eight previous published cases (Table).

THE CASE

A 28-year-old woman, gravida 2, para 1, with obesity and hypothyroidism. At 37+2 weeks of her second pregnancy, she was treated in Fundación Clínica Valle del Lili (FVL) for 2 days of hypertension (high blood pressure 150/100 mmHg) without premonitory symptoms and with normal laboratory tests (platelet count, renal and hepatic function), including proteinuria of 146 mg over 24 hours. Gestational hypertension was diagnosed and dinoprostone was used to induce vaginal delivery. Neither magnesium sulfate nor antihypertensive treatment were administered. On the second day of hospitalization, a male newborn weighing 2627 g was delivered. At 24 hours postpartum, the patient

Figure 1. Abducens nerve palsy of the right eye. Inability to perform abduction.



developed blurred vision and diplopia; a neurologic examination showed that abduction of the right eye was impaired. No other neurological signs were observed (Figure 1). Isolated abducens nerve palsy was diagnosed.

Neither simple resonance nor angioresonance showed alterations. Space-occupying lesions, a cerebrovascular event of ischemic origin, and a cavernous sinus thrombosis were excluded. A lumbar puncture ruled out intracranial hypertension, and cerebrospinal fluid studies ruled out meningitis. The patient was discharged 3 days postpartum with no other symptoms, with complete resolution of the deficit 3 months later (Figure 2). The symptoms were attributed to hypertensive disorder.

DISCUSSION

Abducens nerve palsy during pregnancy is an unusual condition. We searched Medline, Scopus, Ovid, and Google Scholar, finding that 21 cases have been reported in pregnant women or in women who are in the postpartum period.^{4–24} Thirty-eight percent of cases were related to hypertensive disorders of pregnancy; 29% to trauma due to the epidural analgesia; 14% to infectious diseases; and 14% to injuries to the central nervous system; and 5% were reported as having no clearly defined cause (Table). In the group related to HDP, five patients with

preeclampsia, two with gestational hypertension, and one patient with eclampsia were included. Our patient presented normal blood pressure 2 days before manifesting symptoms of paralysis of the sixth cranial nerve, confirming that this complication can occur even in patients with no target organ dysfunction, without signs of severity, and with controlled arterial pressures at the time of the neurological deficit, as shown in other previous reports.^{9,22}

The core of the abducens nerve contains neurons that reach the lateral rectus muscle which allow the abduction of the eyeball; the intracranial pathway of this nerve is very extensive, and its fibers emerge from the brain stem in a close relationship with multiple vasculo-nervous structures which make it a highly vulnerable structure.²⁵

Sixth cranial nerve paralysis pathophysiology during pregnancy is not fully understood. One of the hypotheses states that in cases of severe hypertension, there is cerebral edema and severe vasospasm which causes a downward displacement of the cranial nerve. This leads to ischemia and nerve paralysis. Other authors have reported cases associated with peridural analgesia where pregnant patients had cerebrospinal fluid leakage. There are 6 reported cases to this date of sixth cranial nerve paralysis due to epidural puncture, with full recovery after a variable time (6 weeks to 8 months).^{6,10–12,18,20}

Figure 2. Control 3 months postpartum. Full recovery.



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