



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

Cervical artery dissections represent a common cause of stroke in young people. The existence of polygenetic factors is postulated as part of a multifactorial predisposition.<sup>2</sup> The most common initial symptom is local pain, present in 60–80% of cases.<sup>2,3</sup> Neck pain is most commonly associated with VD, and ipsilateral headache with carotid dissections. Our patient presented with neck pain that was not initially assessed because it occurred in the context of vomiting due to gastroenteritis, so dissection was not suspected until he developed symptoms of acute ischaemia. Ischemic stroke is present in 56–77% of cases; it is more common in VD than in carotid dissections and usually occurs within 2 weeks after diagnosis of dissection.<sup>2,3</sup> A higher frequency of trauma history has been reported in VD; however, no prior trauma is identified in up to 60% of patients, as is the case in our patient (the car accident was considered a consequence and not a cause). Except for smoking, our patient had no other known risk factor. The diagnosis of VD was reached by CT angiography. It was not necessary to extend the study with arteriography, whose indication is limited to cases with high suspicion despite normal non-invasive tests. The techniques of choice are angio-CT or angio-MRI, with no clear superiority of one over the other having been established.<sup>4</sup> Regarding the treatment,<sup>5</sup> no differences in efficacy or safety have been detected between antiplatelet and anticoagulation therapy in extracranial dissections; regarding intracranial dissections, antiplatelet therapy is preferred due to the risk of subarachnoid haemorrhage, favoured by the characteristics of the vessels at this level (thinner adventitia and absence of external elastic lamina). Our patient had no recurrences after initiation of anticoagulation and his recovery was slow but almost complete.

### Conflict of interests

The authors declare no conflict of interest in relation to this article.

### Worsening of immune thrombocytopenic purpura in SARS-CoV-2 vaccinated patients<sup>☆</sup>



#### Recaída de la púrpura trombocitopénica inmune tras la vacunación frente al SARS-CoV-2

Dear Editor:

Immune thrombocytopenic purpura (ITP) is an autoimmune disease characterized by low platelet counts and associated with life-threatening bleeding complications. Vaccinations, particularly measles-mumps-rubella vaccines, have been associated with an increased risk of developing ITP.<sup>1</sup> This can be explained by different mechanisms, including an autoimmune reaction due to molecular mimicry of the virus particles, an antigen-mediated response, or even an immune response to some of the vaccine preservatives.<sup>2</sup> Cases of ITP have recently been described in SARS-CoV-2 infection<sup>3</sup> and cases of ITP have also been reported after the administration of both mRNA and adenovirus vaccines against COVID-19.<sup>4</sup> Given that most of the world's population will eventually receive a SARS-CoV-2 vaccine, it is vital to raise awareness and describe all findings in relation to them.

We report 3 cases of ITP exacerbations in the context of vaccination against SARS-CoV-2. The first case is that of a 24-year-old

<sup>☆</sup> Please cite this article as: García Ramírez P, Castilla García L, Aspa Cilleruelo JM. Recaída de la púrpura trombocitopénica inmune tras la vacunación frente al SARS-CoV-2. *Med Clin (Barc)*. 2022;158:497–498.

### References

- Schievink WI. Spontaneous dissection of the carotid and vertebral arteries. *N Engl J Med* [Internet]. 2001;344:898–906 [citado 13 Ene 2021]. Available from: <http://www.nejm.org/doi/abs/10.1056/NEJM200103223441206>.
- Debette S, Grond-Ginsbach C, Bodenat M, Kloss M, Engelter S, Metso T, et al. Differential features of carotid and vertebral artery dissections: The CADISP Study. *Neurology* [Internet]. 2011;77:1174–81 [citado 16 Ene 2021]. Available from: <http://www.neurology.org/cgi/doi/10.1212/WNL.0b013e31822f03fc>.
- Lee VH, Brown RD, Mandrekar JN, Mokri B. Incidence and outcome of cervical artery dissection: A population-based study. *Neurology* [Internet]. 2006;67:1809–12 [citado 15 Ene 2021]. Available from: <http://www.neurology.org/cgi/doi/10.1212/01.wnl.0000244486.30455.71>.
- Vertinsky AT, Schwartz NE, Fischbein NJ, Rosenberg J, Albers GW, Zaharchuk G. Comparison of multidetector CT angiography and MR imaging of cervical artery dissection. *Am J Neuroradiol* [Internet]. 2008;29:1753–60 [citado 16 Ene 2021]. Available from: <http://www.ajnr.org/lookup/doi/10.3174/ajnr.A1189>.
- Powers WJ, Rabinstein AA, Ackerson T, Adeoye OM, Bambakidis NC, Becker K, et al. Guidelines for the early management of patients with acute ischemic stroke: 2019 update to the 2018 guidelines for early management of acute ischemic stroke: A guideline for healthcare professionals from the American Heart Association/ American Stroke Association. *Stroke* [Internet]. 2019;50:344–418 [citado 16 Ene 2021]. Available from: <https://www.ahajournals.org/doi/10.1161/STR.0000000000000211>.

Sara Ballesta Martínez<sup>a,b,\*</sup>, Elena Muñoz Farjas<sup>a</sup>,  
Cristina Pérez Lázaro<sup>a,b</sup>

<sup>a</sup> Servicio de Neurología, Hospital Clínico Universitario Lozano Blesa, Zaragoza, Spain

<sup>b</sup> Instituto de Investigación Sanitaria de Aragón, Spain

\* Corresponding author.

E-mail address: [ballesta.sara@gmail.com](mailto:ballesta.sara@gmail.com) (S. Ballesta Martínez).

<https://doi.org/10.1016/j.medcle.2021.09.018>

2387-0206/ © 2021 Elsevier España, S.L.U. All rights reserved.

female diagnosed with ITP in 2012 with a stable platelet count of around  $30 \times 10^9/L$ , without the need for treatment or bleeding complications. She received the first dose of the Oxford-AstraZeneca vaccine on 1st March. On the fourth day after vaccination the patient had a platelet count of  $7 \times 10^9/L$ , with no signs of active bleeding. Corticosteroid treatment (prednisone, 1 mg/kg per day) was initiated, resulting in a platelet count of  $>100 \times 10^9/L$  after 7 days of treatment.

The second case is that of a 75-year-old male diagnosed with ITP since 2019 with stable platelet counts around  $80 \times 10^9/L$  with no need for treatment. A control laboratory test showed severe thrombocytopenia of  $8 \times 10^9/L$  on the second day after administration of the 2nd dose of Pfizer/BioNTech vaccine. He started corticosteroid treatment (prednisone 1 mg/kg per day) with platelet count of  $50 \times 10^9/L$  on day 4.

Finally, the third case is that of a 46-year-old female diagnosed with ITP in childhood, who underwent a splenectomy at the age of 17, with multiple relapses requiring treatment with steroids, immunoglobulins and sulphonamides. At the time of vaccination with Oxford-AstraZeneca she was on treatment with romiplostim ( $2 \mu g/kg$  every 15 days), with a stable platelet count of  $100 \times 10^9/L$ . After 3 days, the patient went to the emergency department for metrorrhagia, with a platelet count of  $25 \times 10^9/L$ . Treatment with corticosteroids (prednisone, 1 mg/kg per day) was started, with a favourable progression of  $75 \times 10^9/L$  platelets after 3 days of treatment. The patient received the 2<sup>o</sup>. dose of Pfizer/BioNTech vaccine and on the third day experienced a new episode of severe thrombocytopenia (platelets  $5 \times 10^9/L$ ) with early response to corticosteroid treatment.

All cases have been reported to the Spanish Pharmacovigilance Agency (AEMPS). Previous studies have shown a correlation between the COVID-19 vaccine and ITP, but the relationship with relapse has only been hypothesised. The time of onset, the early response to steroid treatment and prior platelet stability lead us to believe in a causal relationship. According to the algorithm described by Naranjo et al., there is a probable causal relationship.<sup>5</sup> Therefore, in patients with pre-existing ITP, it would be advisable to obtain a platelet count before and after vaccination to avoid fatal bleeding events.

## References

1. France KE, Glanz J, Xu S, Hambidge S, Yamasaki K, Black SB, et al. Risk of immune thrombocytopenic purpura after measles-mumps-rubella immunization in children. *Pediatrics*. 2008;121:e687–92, <http://dx.doi.org/10.1542/peds.2007-1578>.
2. Perricone C, Ceccarelli F, Neshor G, Borella E, Odeh Q, Conti F, et al. Immune thrombocytopenic purpura (ITP) associated with vaccinations: a review of reported cases. *Immunol Res*. 2014;60:226–35, <http://dx.doi.org/10.1007/s12026-014-8597-x>.
3. Mahévas M, Moulis G, Andres E, Riviere E, Garzaro M, Crickx E, et al. Clinical characteristics, management and outcome of COVID-19-associated immune thrombocytopenia: a French multicentre series. *Br J Haematol*. 2020;190:e224–9, <http://dx.doi.org/10.1111/bjh.17024>.
4. Jackson LA, Anderson EJ, Roupael NG, Roberts PC, Makhene M, Coler RN, et al. An mRNA vaccine against SARS-CoV-2. *N Engl J Med*. 2020;383:1920–2193, <http://dx.doi.org/10.1056/NEJMoa2022483>.
5. Naranjo CA, Busto U, Sellers EM, Sandor P, Ruiz I, Roberts EA, et al. A method for estimating the probability of adverse drug reactions. *Clin Pharmacol Ther*. 1981;30:239–45, <http://dx.doi.org/10.1038/clpt.1981.154>.

Patricia García Ramírez\*, Lucía Castilla García,  
José María Aspa Cilleruelo

*Servicio de Hematología y Hemoterapia, Hospital Universitario Príncipe de Asturias, Alcalá de Henares (Madrid), Spain*

\* Corresponding author.

E-mail address: [patgarciamirez@gmail.com](mailto:patgarciamirez@gmail.com) (P. García Ramírez).

<https://doi.org/10.1016/j.medcle.2021.09.017>

2387-0206/ © 2021 Elsevier España, S.L.U. All rights reserved.

## Case report: Pituitary apoplexy after COVID-19 vaccination



### Caso clínico: Apoplejía hipofisaria tras vacunación frente a la COVID-19

Dear Editor,

The discovery and widespread use of different SARS-CoV-2 vaccines has made it possible to combat the COVID-19 disease in an effective and safe way. Among the adverse effects that have been observed during the implementation of the vaccination campaign is the appearance of thrombosis and bleedings associated with a syndrome known as Vaccine-Induced Thrombotic Thrombocytopenia (VITT), related only to viral vector vaccines. VITT is more frequent in young women and appears to be a phenomenon similar to heparin-induced thrombocytopenia and have an autoimmune source.<sup>1,2</sup>

Pituitary apoplexy, described as an infarction or hemorrhage of the pituitary gland, is a rare entity generally associated with pituitary adenomas and constitutes, in most cases, an endocrine emergency that may require decompressive surgery and specific treatment. Currently, in the context of SARS-CoV-2 infection, rare and specific cases of pituitary apoplexy have been described both

associated and not associated with pituitary adenomas. However, to date, there have been no reported cases of vaccine-associated pituitary apoplexy.<sup>3</sup>

We present the case of a 37-year-old woman who, 5 days after vaccination with ChAdOx1-S, developed a high-intensity frontal headache with partial relief with habitual analgesia. A complete physical examination was performed, which did not demonstrate the presence of neurological focalities, cranial nerve involvement, or campimetric involvement. Despite this, due to the intensity of the headache, a brain MRI was performed (Fig. 1). It showed signs concordant with adenohypophysis hemorrhagic bleeding in association with a possible 10 mm intraglandular adenoma without chiasmatic involvement. The patient did not present syndromic signs consistent with Cushing's disease or acromegaly, nor did she present symptoms or signs of pituitary hormonal deficits prior to the event. A campimetry and a pituitary hormonal analysis were performed, both yielding normal results. Symptoms were resolved within 2–3 weeks with no complementary treatment and without associated hormonal deficits in that period.

To our knowledge, this is the first case of pituitary hemorrhage described after SARS-CoV-2 vaccination. The possible presence of a previous undiagnosed adenoma could have influenced the appearance of a hemorrhagic phenomenon at this level. Unfortunately, a

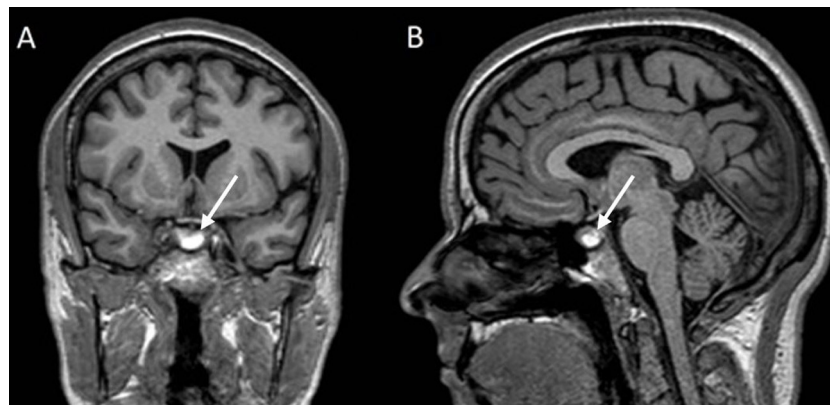


Fig. 1. Coronal (A) and sagittal (B) slices of the skull MRI. Adenohypophysis hemorrhagic bleeding in association with a possible 10 mm intraglandular adenoma without chiasmatic involvement.