Benign opsoclonus myoclonus syndrome and prostate cancer☆

Síndrome *opsoclonus mioclonus* de evolución benigna y cáncer de próstata

Dear Editor:

Paraneoplastic syndromes (PNS) are clinical syndromes associated with cancer, and may coincide with diagnosis of the cancer or precede it, sometimes by several years. The neoplasms most frequently presenting PNS are small-cell lung cancer and gynaecological tumours; association with urological cancers is much rarer. Within the group of urological cancers, the type most commonly associated with PNS is kidney cancer, whereas presentation with prostate cancer is extremely rare.[1] Very few cases are reported of opsoclonus myoclonus syndrome (OMS) associated with prostate cancer, and prognosis was poor in all known cases. We present a case of OMS presenting synchronously with prostate adenocarcinoma with bone metastases, with benign progression of the PNS.

Clinical case: the patient was a 69-year-old man with a history of arterial hypertension and diabetes; he smoked 3 cigars per day and was under study for an elevated prostate specific antigen level of 14 IU. He attended our hospital's emergency department due to inability to walk. Symptoms began as mild instability, rapidly progressing to severe ataxia. Physical examination found rapid, involuntary, conjugate saccades in both eyes on the horizontal plane only, compatible with ocular flutter. The patient presented generalised, arrhythmic, asynchronous myoclonus of the limbs, trunk, and abdomen. Gait and truncal ataxia were observed. Results from a complete blood count, biochemical testing, serology study, and immune profile were normal. Tests for tumour markers, onconeuronal antibodies, and surface antigen antibodies (anti-Hu, Yo, Ri, Zic, CRMP5, Ma, and Tr) yielded negative results. A chest, abdomen, and pelvis CT scan revealed no abnormalities. Prostate biopsy revealed small acinar adenocarcinoma. Bone scintigraphy showed osteoblastic lesions in the left hemipelvis. A PET-CT study ruled out underlying neoplasia. The patient was treated with high-dose steroids and hormonal therapy, and symptoms resolved completely at one year after onset.

Graus et al.[2] include OMS among the group of classical PNS and classify its association with a tumour as a definite PNS, with diagnosis not being ruled out by the absence of onconeuronal antibodies, as was the case in our patient. Storstein et al.[3] report the largest series of PNS associated with prostate cancer (n = 37), observing that the 3 most frequent syndromes were paraneoplastic cerebellar degeneration, limbic encephalitis/encephalomyelitis, and subacute sensory neuronopathy. In a literature search, we identified only 4 cases of OMS associated with prostate cancer. Three of these cases consisted of saccadic oscillations on the horizontal plane only, as in our patient. In 2 of the cases reported by Baloh et al.,[4] the patients developed alterations in ocular motility and gait after diagnosis of prostate cancer, as well as muscle spasms. In both cases, post mortem examination detected perivascular chronic inflammatory cell infiltration in the paramedian pontine reticular formation. The identification of new antibodies against neuronal cell surface antigens, specifically those targeting the glycine receptor (which is involved in neurotransmission in omnipause neurons of the paramedian pontine reticular formation), and the presence of this molecule in oat-cell carcinoma cells have opened several hypotheses that may explain the association between both processes.[5] The third patient reported was a man with prostate cancer who presented a brainstem paraneoplastic syndrome and altered ocular motility on the horizontal plane; an antibody targeting intraneuronal antigens was detected, but the antigenic target could not be identified.[1] In the fourth case, reported by Nasri et al.,[6] the patient was diagnosed with metastatic prostate cancer, and 18 months later developed OMS with onconeuronal antibodies (anti-Hu and anti-Yo) coinciding with a lung mass that was compatible with oat cell tumour according to anatomical pathology findings. In our patient, we suspected that the neurological symptoms may be explained by a second neoplastic process, but ruled out this possibility after laboratory and imaging studies.

The diagnosis of definite PNS is further supported by the resolution of symptoms at one year of follow-up.[2]

In conclusion, we present an extremely rare association between a classical PNS and a cancer presenting high incidence and prevalence, with such a favourable progression that we may suggest greater optimism in the diagnosis and prognosis of these patients.

References

1. Berger JR, Bensalem M, Dalmau J. A brainstem paraneoplastic syndrome associated with prostate cancer. J Neurol Neurosurg Psychiatry. 2009;80:934—5.
2. Graus F, Delattre JY, Antoine JC, Dalmau J, Giometto B, Grisold W, et al. Recommended diagnostic criteria for paraneoplastic neurological syndromes. J Neurol Neurosurg Psychiatry. 2004;75:1135—40.
3. Storstein A, Raspotnig M, Vitaliani R, Giometto B, Graus F, Grisold W, et al. Prostate cancer. Hu antibodies and paraneoplastic neurological syndromes. J Neurol. 2016;263:1001—7.
4. Baloh RW, DeRossett SE, Cloughesy TF, Kuncl RW, Miller NR, Merrill J, et al. Novel brainstem syndrome associated with prostate carcinoma. Neurology. 1993;43:2591—6.
5. Armangue T, Sabater L, Torres-Vega E, Martinez-Hernandez E, Arino H, Petit-Pedrol M, et al. Clinical and immunological features of opsoclonus-myoclonus syndrome in the era of neuronal cell surface antibodies. JAMA Neurol. 2016;73:417—24.
6. Nasri A, Kacem I, Jerdak F, Djebara MB, Mejri N, Sidhom Y, et al. Paraneoplastic opsoclonus-myoclonus-ataxia syndrome revealing dual malignancy. Neurol Sci. 2016;37:1723—5.

☆ Please cite this article as: Cuenca Hernández R, Esquivel Lopez A, Gordo Mañas R, Hípola González D. Síndrome *opsoclonus mioclonus* de evolución benigna y cáncer de próstata. Neurología. 2020;35:64—65.

R. Cuenca Hernández*, A. Esquivel Lopez, R. Gordo Mañas, D. Hípola González

Servicio de Neurología, Hospital Infanta Leonor, Madrid, Spain

*Corresponding author.
E-mail address: rcuencah@gmail.com
(R. Cuenca Hernández).

https://doi.org/10.1016/j.nrleng.2017.07.013
2173-5808/

Subclavian steal syndrome: A forgotten aetiology of acute cerebral ischaemia☆

Síndrome del robo de la subclavia. Una causa olvidada de isquemia cerebral aguda

Dear Editor:

Subclavian steal syndrome refers to subclavian artery stenosis before the origin of the vertebral artery, mainly due to the appearance of atheromatous plaques, which causes a retrograde flow in the ipsilateral vertebral artery together with transient neurological symptoms secondary to ischaemia in the affected territory.[1]

Its prevalence ranges from 0.6% to 6.4% in the general population.[2] It is more frequent in men (ratio of 2:1), with the exception of cases secondary to Takayasu arteritis, in which women are more commonly affected. The left subclavian artery is more frequently involved, with a ratio of 4:1.

We present the case of a 70-year-old man with a history of arterial hypertension controlled with calcium channel blockers, angiotensin II receptor blockers, and thiazide; and type 2 diabetes mellitus treated with oral anti-diabetic drugs. The patient was admitted to the neurology department due to symptoms of central vertigo and gait ataxia of 48 hours' progression.

The physical examination revealed marked asymmetry when arterial blood pressure (BP) was measured simultaneously in both arms. The mean BP calculated from 3 measurements was 100/70 mm Hg in the right arm and 148/97 mm Hg in the left. Heart sounds were regular and no heart or carotid murmur was heard. The radial pulse was less easily felt in the left wrist than in the right. The neurological examination revealed vertical nystagmus, gait ataxia, and moderate dysarthria. During the targeted interview, the patient reported frequent left arm pain of several months' progression.

A head CT scan revealed no signs of acute ischaemia; a brain MRI confirmed an acute vertebrobasilar stroke. A Doppler ultrasonography of the supra-aortic trunks showed a biphasic pattern in the left subclavian artery, compatible with subclavian steal syndrome (grade 2). Examination of the basilar artery through the transforaminal window revealed inverted flow at a depth of 80 mm in the left vertebral artery and reduced flow speed in both posterior cerebral arteries.

An MRI-angiography revealed severe stenosis of approximately 5 mm in diameter in the left subclavian artery, proximal to the origin of the homolateral vertebral artery; images were suggestive of retrograde flow in the left vertebral artery, which was permeable in a contrast study. These findings are compatible with subclavian steal syndrome (Fig. 1).

Considering a diagnosis of acute vertebrobasilar ischaemia secondary to subclavian steal syndrome, we opted for endovascular treatment, placing a stent in the left prevertebral subclavian artery. A subsequent angiography confirmed that flow was adequate and no complications were observed. A one-month follow-up Doppler ultrasonography of the supra-aortic trunks and BP measurement in both arms revealed a significant reduction in the BP asymmetry: mean BP was 135/77 mm Hg in the right arm and 145/76 mm Hg in the left. The patient presented no new neurological events and the systematic examination revealed minimal residual ataxia, no vertigo signs, and remission of the left arm pain.

The most frequent aetiology in subclavian steal syndrome is atherosclerosis, followed in order of frequency by vasculitis, temporal arteritis, and embryonic malformation of the aortic arch and supra-aortic trunks.

Stenosis of the subclavian artery provokes a compensatory increase in flow in the contralateral vessels (which is responsible for the presence of a retrograde flow from the vertebral artery) to ensure adequate blood supply and improve perfusion in the affected territory.[2] Vertebrobasilar insufficiency is infrequent, except in the event of a lesion affecting the contralateral vertebral artery or innominate artery stenosis.[3]

Only 5% of patients with subclavian steal syndrome develop neurological symptoms. Most patients present proximal stenosis of the subclavian artery, compromising circulation to the posterior cerebral artery territory, specifically the V4 segment, which supplies the brainstem and cerebellum. Clinical symptoms typically include vertigo, ataxia, dysarthria, syncope, diplopia, and monocular or binocular vision impairment.[4]

Arterial occlusion only occurs distally in rare cases, with the predominant symptom being claudication of the affected limb. Physical examination reveals asymmetric radial pulses, with a difference in BP of > 20 mm Hg between arms; supraclavicular auscultation may reveal artery bruit, depending on the degree of stenosis.[5]

☆ Please cite this article as: Antón Vázquez V, Armario García P, García Sánchez SM, Martí Castillejos C. Síndrome del robo de la subclavia. Una causa olvidada de isquemia cerebral aguda. Neurología. 2020;35:65—67.