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Sir,
Idiopathic intracranial hypertension associated with depot medroxyprogesterone

Many associations of idiopathic intracranial hypertension (IIH) with various medications have not been well substantiated. Adequate proof of association requires that withdrawal of the medication decrease the CSF pressure in patients with IIH. This report describes a 23-year-old woman, who developed IIH after using depot medroxyprogesterone acetate and experienced total resolution of IIH after discontinuation of this medication.

Case report

A 23-year-old woman with a body mass index of 28.2 kg/m² presented with a 3-week history of retro-orbital pain and headaches associated with horizontal diplopia, photopsias, tinnitus, and nausea. Her past medical and family histories were unremarkable. Her only medication was contraception with depot medroxyprogesterone acetate (Depo Provera), which she had taken only one dose 2 months ago.

Her visual acuity was 20/20 OU with a right absolute central scotoma. Pupillary responses and color vision were normal. She had a 10 prism diopter right esotropia. Tonometry revealed 17 mmHg OU. Anterior segment examination was normal. She had bilateral papilloedema with nerve fibre layer haemorrhages in the superior peripapillary regions OD and punctate haemorrhages in the medial inferior peripapillary regions OD. No macular star was present.

MRI of the brain and orbits with and without contrast and MR venogram were normal. Her CSF opening pressure was elevated at 520 mm H₂O. CSF protein, glucose, cell count, VDRL, Gram stain, acid fast bacilli stain; routine bacterial, viral, and fungal cultures; and cytology were all normal. Laboratories including complete blood count with platelets, chemistry panel, liver function tests, PT/PTT/INR, sedimentation rate, antinuclear antibodies, RPR, VDRL, rheumatoid factor, and angiotensin-converting enzyme were normal. Other autoimmune disorders were ruled out with negative anti-double-stranded DNA, anti-SSA, anti-SSB, anti-Ro,

and anti-Jo1 antibodies. Laboratory investigation, including protein C and S, antiphospholipid, anticardiolipin, and antiphosphatidylserine antibodies, did not reveal a hypercoagulable state. T3, T4, thyroid stimulating hormone, and antithyroglobulin antibodies were also normal. Urine beta human chorionic gonadotropin test was negative.

After developing IIH, she elected to discontinue this medication and not take any further ones, including carbonic anhydrase inhibitors or corticosteroids for the treatment of her IIH. After the fourth monthly visit, she had total resolution of her papilloedema and related symptoms. Repeat lumbar puncture revealed a decreased CSF opening pressure of 131 mm H₂O. Her body mass index remained the same.

Comment

Several reports have described IIH after standard oral contraceptives, containing 20–30 µg of ethinyl estradiol (EE) and after emergency contraception with 200 µg for EE over 2 days.¹ Unlike levonorgestrel implants,^{2,3} medroxyprogesterone acetate has not been clearly associated with IIH. Only one report in the literature describes a 29-year-old woman who developed IIH 8 weeks after an injection of medroxyprogesterone acetate and received oral dexamethasone without follow-up data regarding resolution of her symptoms after withdrawal of medroxyprogesterone.⁴

This report demonstrates more convincing evidence linking depot medroxyprogesterone acetate with the development of IIH. Withdrawal of this medication in the patient resulted in complete resolution of IIH, as evidenced by a normal neuro-ophthalmic examination and a CSF opening pressure of 131 mm H₂O after 4 months. This wash-out period is consistent with the half-life of the medication. The serum level from a recommended dose of medroxyprogesterone 150 mg intramuscularly usually increases over 3 weeks to reach peak plasma concentrations between 1 and 7 ng/ml. The levels then exponentially decrease until they become undetectable (<100 pg/ml) between 120 to 200 days following injection.⁵

The close temporal relationship between the use of medroxyprogesterone acetate and development of IIH, and the resolution of IIH after medication withdrawal are only suggestive of a causal relationship. The exact pathogenesis of IIH from progestins remains unclear. Increased awareness of this adverse effect is important, as more women are using this medication for contraception and for menstrual irregularities because of its more convenient dosing of once every 12–13 weeks and its lower cost compared to oral contraceptives.

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Sir, Relapsing reversible posterior leukoencephalopathy syndrome

Reversible posterior leukoencephalopathy syndrome (RPLS) is characterized by headache, altered mental functioning, seizures, and visual loss, and has been recognized in a variety of conditions, including hypertension, eclampsia, treated with immunosuppressive and cytotoxic drugs, etc.^{1,2} We report an RPLS patient with relapsing course and abnormal electroencephalogram (EEG).

Case Report

This 9-year-old girl was diagnosed with acute lymphoblastic leukemia (ALL) and admitted for allogeneous bone marrow transplantation. On admission, her blood pressure was 127/85 mmHg. On the 15th day of induction therapy (including methotrexate, prednisolone, cytosine, L-asparaginase, and vincristine), acute hypertension (156/98 mmHg) was noted. On the

following day, she suffered from sudden onset of severe visual loss and gait imbalance.

Ophthalmological examination revealed a visual acuity of counting fingers in each eye. Both pupils reacted to light briskly. Slit lamp examination and ophthalmoscopy examination were unremarkable. Acute cerebral blindness was impressed. Brain magnetic resonance imaging (MRI) demonstrated hyperintensities in bilateral occipital lobes and left frontal lobe on T2-weight images, diffusion-weighted images (DWI) and apparent diffusion coefficient (ADC) maps (Figure 1). Under the impression of RPLS, all drugs except prednisolone were discontinued. Her blood pressure was normalized by administration of nifedipine 20 mg per day. The vision improved to 20/40 in both eyes within 3 days. However, on the 23rd day of induction, the visual acuity deteriorated to hand motion in both eyes, and elevation of blood pressure to 126/92 mmHg was also noted. Repeated MRI T2-weighted images still showed

Figure 1 Brain MRI on first episode of vision loss demonstrated gyriform hyperintensities in bilateral occipital lobes and left frontal lobes on T2-weight images (top), diffusion-weighted images (middle, $b=1000$) and apparent diffusion coefficient maps (bottom). These findings confirmed the diagnosis of reversible posterior leukoencephalopathy syndrome.