

## Pseudotumor Cerebri Induced by Minocycline Treatment for Acne Vulgaris

Sir,

Pseudotumor cerebri (PTC) or benign intracranial hypertension is a syndrome consisting of the symptoms of elevated intracranial pressure with resultant papilledema, which occurs in the absence of any demonstrable intracranial tumors or hydrocephalus. Several etiologies have been suggested. Certainly implicated in this condition are many of the agents used in treating acne vulgaris, including tetracycline, its derivatives, and isotretinoin (1). Physicians must be aware of this condition when prescribing the above medications because of the associated sequelae. We report the case of a young woman who developed pseudotumor while taking minocycline for acne.

### CASE REPORT

A 15-year-old nonobese Caucasian female reported to the clinic with a complaint of a 3-week history of headaches. The patient was otherwise healthy when she developed moderate frontal/retroorbital headaches which radiated posteriorly. She denied nausea, vomiting, visual complaints, or a stiff neck. She had been placed on minocycline, 100 mg twice daily 4 months prior to presentation for the treatment of type 1 acne vulgaris. This condition had been treated previously with Cephalexin 250 mg BID without success. She was on no other medications, specifically denying the use of oral contraceptives, isotretinoin or vitamin A supplementation.

The physical examination showed bilateral papilledema, but was otherwise normal neurologically. A full ophthalmologic evaluation confirmed the bilateral papilledema with multiple cottonwool spots and enlarged blind spots on visual field examination. A head CT was normal without evidence of masses, hemorrhage, or hydrocephalus. On lumbar puncture, the opening pressure was 510 mm of water with normal cell count, glucose, and protein. The minocycline was discontinued, and she was treated with acetazolamide, 250 mg twice daily. Her headaches resolved within approximately 1 week. Within 1 month, her ophthalmologic examination was improved, with only trace edema which subsequently resolved.

### DISCUSSION

PTC, although uncommon, can lead to progressive visual loss and eventual blindness in 4–12% of patients (1). It is characterized by increased intracranial pressure in the presence of normal cerebrospinal fluid cytology, chemistries, brain and ventricular size (2).

The exact mechanism of PTC is unknown; however, certain factors may predispose one to the development of this syndrome. Among those associated are obesity, recent weight gain, female gender, endocrinopathies, autoimmune disorders, and concurrent drug therapy. Pharmacologic agents described include steroids, estrogens, thyroid supplements, vitamin A, and certain antibiotics (3). In particular minocycline, a tetracycline frequently used in the treatment of acne, has been commonly implicated in the literature for over 15 years.

Minocycline is lipophilic and penetrates the blood-brain barrier more readily than other tetracyclines, thus attaining higher CSF levels and possibly contributing to its causative mechanism of action (4).

Our patient was diagnosed as having PTC secondary to drug administration. Her risk factors included minocycline usage and female sex, but she was neither obese, nor had any other medical problems, nor used other medications. This diagnosis was reached by exclusion on the basis of normal neurological results and the negative imaging findings. The association with drug administration before the appearance of symptoms is highly suggestive of drug-induced PTC. The time to onset of symptoms can be variable, though, and has been reported as long as 1 year after starting the offending medication (5).

PTC can have potentially permanent visual sequelae, and physicians must be alert to the early signs and symptoms of this disorder. This is particularly important when a patient is being treated with the commonly prescribed oral tetracyclines and retinoids for acne vulgaris. The presence of other associated relative risk factors such as gender, obesity and concurrent drug usage should be duly noted. Warning symptoms to consider include headache, nausea, vomiting, and visual disturbances. This history should be elicited from all patients receiving prolonged treatment for acne with systemic vitamin A and/or tetracyclines. Some sources even suggest routine fundoscopic examination in these patients (5, 6). Irregardless, if PTC is suspected the patients should be screened and appropriately referred for further treatment and the offending medication discontinued.

### REFERENCES

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