

A severe case of tetracycline-induced intracranial hypertension

Anders Vedel Holst,¹
Patricia L. Danielsen,² Bertil Romner¹

¹Department of Neurosurgery, Rigshospitalet, Copenhagen University Hospital; ²Bispebjerg University Hospital, Department of Dermatology and Venerology, Copenhagen, Denmark

Abstract

Tetracycline is a first-line treatment of the common skin disorder *acne vulgaris*. A rare side effect of tetracycline treatment is intracranial hypertension also called pseudotumor cerebri (PTC). We report a severe case of PTC with cranial nerve palsy and visual loss in a 16 year old girl following acne vulgaris treatment with tetracycline.

Introduction

Pseudotumor cerebri (PTC) is characterized by elevated intracranial pressure without paraclinical or radiologic manifestations that is idiopathic or can be produced by various medications e.g. tetracycline. It most frequently occurs in obese women of childbearing age and the incidence in the general population has been estimated to 0.9 per 100,000.^{1,2} Because of increasing obesity the incidence might be rising. Clinically patients present with papilledema as the most important sign and symptoms of headache, visual disturbances and photosensitivity.³ The most feared consequence is visual loss that may be severe and permanent, and cerebral ventriculoperitoneal shunting may be necessary for symptomatic treatment.⁴

Acne vulgaris is an extremely common skin disorder that affects virtually all individuals at least once in life with a peak at age 18. Inflammatory lesions include papules, pustules and nodules usually located to face, neck, chest, upper back and upper arms.⁵ For the moderate to severe form tetracycline is the first-line treatment of choice.⁶ Tetracycline has a bacteriostatic effect on *p. acnes* that possibly begins the inflammatory cascade leading to acne, though other unclear mechanisms of the drug also exist.⁷

Case Report

A 16 year-old obese (BMI 32) girl, (Figure 1) otherwise healthy, was admitted to the Department of Neurosurgery on suspicion of PTC. During the last year she had experienced intermittent episodes of headache. Six weeks before admittance her GP had initiated tetracycline treatment 500 mg po per day because of acne vulgaris. Three weeks after her headaches worsened and no longer responded on acetaminophene, codeine or ASA treatment. She also experienced nausea and multiple episodes of vomiting. Four weeks after she developed diplopia and on her own initiative she stopped taking tetracycline. She was seen by an ophthalmologist who discovered bilateral papilledema and paresis of the right abducens nerve. Acetazolamide treatment po 250 mg two times daily was initiated. CT and MR scans showed no pathological findings and lumbar puncture showed no signs of infection. Pressure measurement was not performed. Four days later symptoms had worsened with further loss of vision, bilateral abducens nerve palsy and a fixed dilated right pupil. The patient was transferred to the Department of Neurosurgery where an external ventricular drain (EVD) was inserted in the right lateral ventricle. Initial intracranial pressure was measured to 42 mmHg (normal pressure 5-15 mmHg). Drainage volumes were as high as 400 mL/day. Intracranial pressure was measured every hour and near-normalized to about 20 mmHg. After placement of EVD headache resolved completely and bilateral abducens



Figure 1. 16-year old girl with moderate acne vulgaris after insertion of external ventricular drain.

Correspondence: Patricia L. Danielsen, Bispebjerg University Hospital, Department of Dermatology and Venerology², Copenhagen, Denmark. E-mail: patriciadanielsen@yahoo.dk

Key words: tetracycline, intracranial hypertension.

Received for publication: 27 September 2010.

Revision received: 13 October 2010.

Accepted for publication: 18 October 2010.

This work is licensed under a Creative Commons Attribution 3.0 License (by-nc 3.0).

©Copyright A.V. Holst et al., 2011
Licensee PAGEPress, Italy
Dermatology Reports 2011; 3:e1
doi:10.4081/dr.2011.e1

palsy cleared. Two days later the drain was converted to a permanent ventriculoperitoneal shunt.

Discussion

The general practitioner as well as the dermatologist is often confronted with patients with acne vulgaris. PTC can occur idiopathic in obese women, even without the use of medication. Obese women with a history of headache treated with tetracycline, doxycycline, minocycline and isotretinoin complaining of worsening in intensity or frequency should evoke suspicion of this rare complication on a low threshold. Combination therapy with tetracycline and retinoids may hold a higher risk of PTC.

References

1. Ireland B, Corbett JJ, Wallace RB. The search for causes of intracranial hypertension. *Arch Neurol* 1990;47:315-20.
2. Durcan FJ, Corbett JJ, Wall M. The incidence of pseudotumor cerebri: population studies in Iowa and Louisiana. *Arch Neurol* 1988;45:875-7.
3. Wall M, George D. Idiopathic intracranial hypertension: a prospective study of 50 patients. *Brain* 1991;114:155-80.
4. Bynke G, Zemack G, Bynke H, Romner B. Ventriculoperitoneal shunting for idiopathic intracranial hypertension. *Neurology* 2004;63:1314-16.
5. Brown SK, Shalita AR. Acne vulgaris. *Lancet* 1998;351:1871-6.
6. Haider A, Shaw, JC. Treatment of acne vulgaris. *JAMA* 2004;292:726-35.
7. Friedman DI. Medication-induced intracranial hypertension in dermatology. *Am J Clin Dermatology* 2005;6:29-37.