Methylphenidate-induced erections in a prepubertal child

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Abstract Methylphenidate is a medication used routinely in the management of attention deficit hyperactivity disorder. We report a case of a prepubertal child who developed unwanted erections after commencing a response-adjusted dosing regimen of sustained release methylphenidate. Despite priapism being a rare adverse reaction associated with methylphenidate, physicians and parents need to be aware as it can have significant long-term complications.

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Introduction

We present a case of a prepubertal 12-year-old Caucasian boy with recurrent erections. He had been on 36 mg of methylphenidate (CONCERTA®, Janssen-Cilag Ltd Pharmaceuticals) for over 2 years for treatment of attention deficit hyperactivity disorder (ADHD). There were no medication compliance issues nor was he taking any other medications. His parents reported no other side effects from this medication and an excellent improvement in his symptoms attributable to his ADHD medication.

Case report

The patient was diagnosed with ADHD 2 years previously and was initially commenced on oral methylphenidate 18 mg every morning by a child psychiatrist, and subsequently this dosage was adjusted up to 36 mg daily. He received this dose every day except Sundays which were his drug-holiday days. This 12-year-old boy had also been experiencing prolonged, painful erections unaccompanied by sexual excitation for 2 years. He experienced approximately three short-lived erections per day. No bladder, bowel or neurological symptoms were reported, nor were there any abnormalities detected on examination of his
abdomen, spine or lower limbs. Both testes were also normal on examination with normal testicular volume for age. No abnormalities were found on investigation of other causes of priapism and testosterone levels were normal.

Given previous case reports of stuttering priapism associated with scheduled weekly medication withdrawals and drug holidays, the child’s parents and psychiatrist were advised regarding this potential adverse reaction and, as a result, the medication was gradually reduced and subsequently stopped. No further reports of unwanted erections have been reported.

Discussion

OROS Methylphenidate is a long-lasting, slow-release version of Methylphenidate, and is used frequently in the management of ADHD in children over the age of 6 years [1]. The CONCERTA® tablet is coated such that an immediate release of drug is followed by a sustained release of the medication. Common side effects include abdominal pain, angina, headaches and drowsiness [2]. Methylphenidate is a stimulant medication, causing the release of dopamine from the presynaptic vesicles in dopaminergic nerves [3]. Sublingual dopamine agonists have been used as a treatment for erectile dysfunction, and hypersexuality is a recognised side effect of subcutaneous dopamine therapy in Parkinson’s disease [4,5]. Therefore, it is probable that our patient’s erections are mediated via the dopaminergic system.

Priapism is defined as a persistent erection that is not accompanied by stimulation or sexual desire, and that lasts in excess of 4–6 h. Two forms of priapism exist, low and high flow. Both forms are incredibly rare in the paediatric population. Priapism has been reported in prepubertal boys from a variety of causes, including sickle cell disease, trauma and malignancy [6–8]. Priapism requires urgent urological assessment to reduce the risk of long-term complications, which include erectile dysfunction, impotence and fibrosis [9,10].

Interestingly, in total there are only three case reports of priapism associated with methylphenidate in the literature: two cases of priapism associated with the withdrawal of methylphenidate and a case associated with commencement of the medication. In 2004, Schwartz and Rushton described the case of a 15-year-old boy who had been on oral methylphenidate (CONCERTA®) for management of ADHD. Priapism occurred during drug-holiday days, or on days when he forgot to take his medication. Relief of early morning unwanted erections occurred after taking his morning dose of methylphenidate [11].

A similar case was described in 2006 in the Canadian Adverse Reaction Newsletter. A 16-year-old boy on methylphenidate (CONCERTA®) for ADHD experienced persistent painful erections that lasted up to 24 h on days that he forgot to take his medication; the erections would resolve when the medication was taken [12].

In contrast, a case report of a 14-year-old boy with intermittent erections while taking methylphenidate for the management of ADHD has since been published. The unwanted erections ceased after the medication was discontinued and no further unwanted erections were reported at follow up [13].

Conclusion

This is the first report of recurrent bothersome erections in a prepubertal child related to the commencement of methylphenidate. As this can be an embarrassing subject for a young adolescent or child to discuss, psychiatrists, paediatricians, parents and patient need to be made aware of this uncommon side effect.

Conflict of interest/funding

None.

References


