

## Letter to the Editor

### Micturition associated with painless lacrimation

A 34-year-old woman presented to the ophthalmic clinic with complaints of watering from both eyes during micturition. The complaint existed from childhood, and was painless and not associated with any visual complaints. She was distressed as colleagues often mistook her as being overly emotional due to her teary-eyed appearance after visits to the bathroom. Thorough ophthalmic and gynecological examinations were normal. Irrigation of the lacrimal passages showed the drainage pathway to be freely patent. Imaging of the brain and orbit, and blood and urine cultures showed no abnormalities. The phenomenon was witnessed by one of the authors and confirmed. In this communication, we report a rare and rather unusual association of painless lacrimation with micturition.

Bulwer *et al.* have described a similar case in a 3-year-old, who presented with painless lacrimation and micturition.<sup>1</sup> The patient, at the time of micturition, dropped her jaw to show her lower teeth, and had a “vacant” look. Systemic examination failed to find any abnormality. There have been two other cases with similar clinical scenarios, which failed to explain any anatomical or physiological basis for the complaints.<sup>2,3</sup>

The facial nerve parasympathetic pathway originates from the superior salivatory or lacrimal nucleus in the pons. The lacrimal nucleus receives inputs from the hypothalamus (emotional stimuli) and the trigeminal nucleus (sensory inputs from the cornea) and finally, through the geniculate and the pterygopalatine ganglia, innervate the lacrimal gland.<sup>1</sup> The Gert's Nucleus in the sacral cord receives information about bladder contents from the bladder and bladder sphincter, and relays this to the tegmentum of the midbrain (periaqueductal gray), which in turn, excites the pontine micturition center (PMC). The PMC along its long descending pathways to the sacral cord, induces micturition.<sup>4</sup>

Although medical literature shows only three such previous cases, help has often been sought over the Internet on various help groups for identical complaints (<http://forums>

[.webmd.com/3/incontinence-and-oab-exchange/forum/147/47](http://www.webmd.com/3/incontinence-and-oab-exchange/forum/147/47) (accessed 9 Feb 2014) and <http://www.livescience.com/18449-child-cries-urination.html> (accessed 2 Jun 2014)).

Bulwer has hypothesized that abnormal parasympathetic connections between the lacrimal nucleus and area of the PMC (both being located in the pons) could be the explanation behind this unusual presentation.<sup>1</sup>

There is a possible role for functional magnetic resonance in this condition, as it would help identify any abnormal neuronal circuitry, as hypothesized here. Physicians and ophthalmologists alike must be sensitive to this underreported and rare, but potentially embarrassing and psychologically damaging, condition that can, at best, be labeled as an atypical, benign, biological reflex.

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### Conflict of interest

None declared.

### References

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