Mirror movements in a case of Turner syndrome: an unusual association

Krishna Shantilal Mori, Amulya Yalamanchi, Adyne Reena Asirvatham, Shriraam Mahadevan

Department of Endocrinology, Sri Ramachandra Institute of Higher Education and Research, Chennai, Tamil Nadu, India

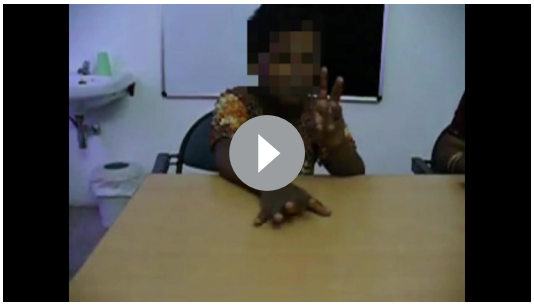
Correspondence to
Dr Krishna Shantilal Mori;
krishna131mori@gmail.com

Accepted 16 September 2020

DESCRIPTION

A 13-year-old girl presented with primary amenorrhea, short stature and absence of secondary sexual characteristics. On detailed evaluation she was confirmed to have Turner syndrome based on clinical features of mild dysmorphism, elevated follicle-stimulating hormone and karyotyping (45, XO). She was scholastically poor but speech and other neurological examination were normal. Echocardiography revealed bicuspid aortic valve with no other abnormality. The abnormal hand movements (shown in video 1) were incidentally noticed during one of her clinical visits. The video illustrates a rare clinical sign called 'mirror movement'. When the patient was asked to count with her fingers of the left hand, the right hand fingers (though kept on the table) also mirror the same. This type of synkinesia (mirror movements) is usually associated with neurological conditions such as cerebral palsy, high cervical cord malformation (as in Klippel-Feil syndrome), asymmetric Parkinsonism and rarely in obsessive compulsive disorder or schizophrenia. It is also reported in certain endocrinopathies such as hypogonadotrophic hypogonadism (especially Kallmann syndrome) but not yet reported with Turner syndrome.[1]

Physiologically, mirror movements may be observed in children in the first few years of life prior to myelination of corpus callosum fibres and it is very rare after 10 years of age. The possible mechanisms/hypothesis behind these abnormal movements in other pathological conditions include abnormal decussation of pyramidal tract fibres and absent/dysgenetic corpus callosum leading to reduced contralateral cortical inhibition.[2] MRI of the brain in our patient was normal and we believe the genetic condition may be an incidental association with no causal relationship. Electrophysiologial study such as transcallosal inhibition or a functional MRI may have helped us to understand the pathophysiology of these abnormal movements better. However, we could not perform these studies due to resource constraints. Considering her age, she was started on gradually escalating doses of oestrogen followed by progesterone therapy. She was doing well till her last follow-up at 19 years of age.



Video 1 Video showing Mirror movements in a patient with Turner syndrome

Patient's perspective

I am more than happy and satisfied that my case may add to the current medical literature and may prove as a good learning experience for the budding physicians.

Learning points

- Mirror movement is a rare clinical sign associated with multiple medical conditions.
- Kallman syndrome is one of the common endocrine cause of mirror movements.
- There has been no report of occurrence of mirror movements in Turner syndrome till date. We suspect it to be a rare association with no established causality.

Contributors KSM and AY: manuscript preparation and editing. ARA: planning and critical review. SM: patient management and planning.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

1 Farmer SF. Mirror movements in neurology. *J Neurol Neurosurg Psychiatry* 2005;76:1330.
2 Cincotta M, Ziemann U. Neurophysiology of unimanual motor control and mirror movements. *Clin Neurophysiol* 2008;119:744–62.

Check for updates

© BMJ Publishing Group Limited 2020. No commercial re-use. See rights and permissions. Published by BMJ.

To cite: Mori KS, Yalamanchi A, Asirvatham AR, *et al*. *BMJ Case Rep* 2020;**13**:e238482. doi:10.1136/bcr-2020-238482

BMJ Case Rep: first published as 10.1136/bcr-2020-238482 on 3 November 2020. Downloaded from http://casereports.bmj.com/ on August 18, 2022 by guest. Protected by copyright.

Copyright 2020 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit
https://www.bmj.com/company/products-services/rights-and-licensing/permissions/
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:
- Submit as many cases as you like
- Enjoy fast sympathetic peer review and rapid publication of accepted articles
- Access all the published articles
- Re-use any of the published material for personal use and teaching without further permission

Customer Service
If you have any further queries about your subscription, please contact our customer services team on +44 (0) 207111 1105 or via email at support@bmj.com.

Visit casereports.bmj.com for more articles like this and to become a Fellow

BMJ Case Rep: first published as 10.1136/bcr-2020-238482 on 3 November 2020. Downloaded from http://casereports.bmj.com/ on August 18, 2022 by guest. Protected by copyright.