

## Essential Tremors Mimicking as Dysgraphia

Essential tremor, an autosomal dominant disorder, well described in adults, is relatively uncommon in children [1]. These children have poor handwriting and are often mislabeled as dysgraphia.

A 13 years male was referred to the Learning Disability Clinic with the complaint of illegible handwriting, dropping academic grades with a possibility of dysgraphia. The handwriting fluency and legibility deteriorated in time controlled situations such as examinations. He was slow in copying but had no issues with concentration, retrieval and had a good memory. Family history of tremors in father was positive. Examination was normal except for tremors aggravated on anti-gravity posture. Detailed exam of the motor, sensory, cerebellar system was normal. The thyroid profile, serum ceruloplasmin, MRI brain were normal. Weschler Intelligence Scale for Children (WISC -R) revealed a superior intellect Full Scale IQ (FSIQ) –110.

He was administered a timed (15-20 minutes) free writing essay to test for deficits in written language or dysgraphia. On assessment his handwriting was tremulous, slow, and laborious and illegibility increased progressively at the end of the task suggesting poor mechanical writing output. To assess objectively written expression, handwriting legibility and with a purpose to assist specialized instruction further testing on standardized subtests of an psychoeducational evaluation tool (WJ- III) ACH of spelling, written expression, editing, writing samples were administered. His basic (spelling, editing) and high order written expression skills (usage of grammar, vocabulary, sequencing, organization of ideas) were age appropriate but scored poorly on the writing samples subset of the Handwriting Legibility scale and Writing Evaluation scale. He was diagnosed as benign essential tremor with secondary mechanical poor handwriting skills, started on propranol. Parental counseling was done and academic accommodations sought.

Essential tremors (ET) are often stigmatized as a disorder of the elderly and is overlooked in children. Its common in males with a mean age of onset being 8.8 years with a high familial preponderance [2]. It is known to cause difficulty in writing, problems controlling utensils such as fork and become exaggerated during stress [3]. Hands are often more affected than other parts of the body and is not associated with any known pathology. Retrospective studies have indicated that only a quarter of children visit a neurologist for pharmacotherapy, propranolol being effective in 50% of children [4]. Prevalence of ET in a study done on adults in Kolkata was 3.95 per 1000 [5]. Other causes of tremors such as dystonic, cerebellar, postural and psychogenic need to be differentiated from ET. Rate and accuracy in writing are crucial to success in examinations and accommodations such as extra time, writer and improve legibility and a good written expression. It boosts the self-esteem of the child and allows him to explore his potential in academics.

*Acknowledgements:* Dr Mamta Manglani, Dr. Sandhya Kamath and Ms. Anagha Affreddy.

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### REFERENCES

1. Tan E, Lum S, Prakash K. Clinical features of childhood onset essential tremors. *Eur J Neurol.* 2006;13:1302-5.
2. Jankovic J, Madisetty J, Vuong K. Essential tremor among children. *Pediatrics.* 2004; 114:1203-5.
3. Rajput A, Robinson C, Rajput A. Essential tremor and disability. A clinicopathologic study of 20 cases. *Neurology.* 2004;62:932-6.
4. Ferrara J, Jankovic J. Epidemiology and management of essential tremor in children. *Paediatr Drugs.* 2009;11:293-307.
5. Das S, Banerjee T, Roy T, Raut D, Chaudhari A, Hazra A. Prevalence of essential tremor in the city of Kolkata, India: a house-to-house survey. *Eur J Neurol.* 2009;16:801-7.