

# Obsessive-Compulsive Symptoms in an Adolescent Appearing after Cerebellar Vermian Mass Resection

HARSHAL SATHE<sup>1</sup>, SAGAR KARIA<sup>2</sup>, AVINASH DE SOUSA<sup>3</sup>, NILESH SHAH<sup>4</sup>

## ABSTRACT

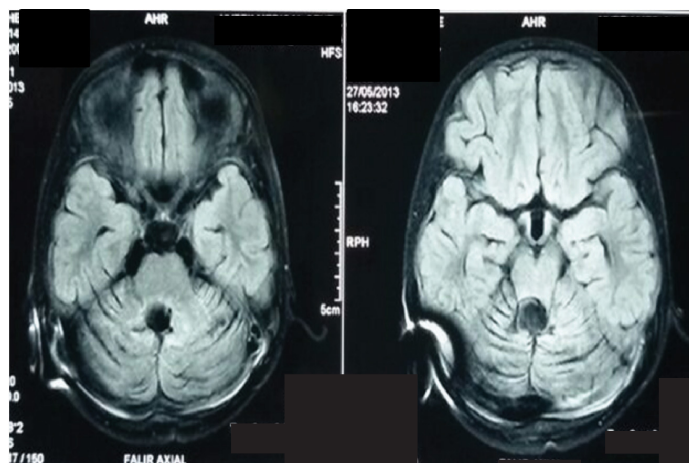
Obsessive compulsive symptoms have been reported in frontal lobe tumours and basal ganglia lesions. We report herewith a case of an adolescent who had a vermian cystic mass for which he underwent excision surgery. Three months postsurgery family members noticed that he started with repeated hand washing and abnormal walking pattern. Also, he developed bedwetting in sleep at night. He was given clinical diagnosis of Obsessive-Compulsive Disorder (OCD) and Nocturnal enuresis following a cerebellar mass removal which improved with fluoxetine and imipramine respectively.

**Keywords:** Cerebellum, Enuresis, Obsessive-compulsive disorder, Tumour

## CASE REPORT

A 14-year-old right handed male patient studying in 9<sup>th</sup> grade presented to the Psychiatry Outpatient Department accompanied by his mother with the chief complaints of repeatedly washing his face and hands, walking in an irregular fashion and passing urine in bed when asleep. All symptoms were present since 3 months prior to presentation. The patient had been admitted to a tertiary care centre 6 months prior to presentation with complaints of persistent headache and vomiting which was present 2 weeks prior to the admission. He also developed broad based gait since the last one month. A thorough neurological clinical examination was performed where he was found to have cerebellar signs i.e. dysdiadochokinesia and past pointing. Magnetic Resonance Imaging of the brain revealed a vermian cystic mass and enhancing nodule causing mass effect in posterior fossa and tonsillar region while the reverse herniation was suggestive of haemangioblastoma [Table/Fig-1]. He underwent an endoscopic third ventriculostomy and omaya chamber insertion followed by posterior fossa craniotomy and excision of the vermian mass [Table/Fig-2]. Six days post the surgery, he was discharged when he was conscious and ambulating with support while having started oral feeds.

Gradually as he recovered his mother noticed that he began to wash his hands and face again and again. When asked about the reason for the same he said that he felt restless if he does not wash his hands as there was the thought of dirt clinging to his hands when he touched different things. He washed his hands and some length of his forearm for long duration of time spending

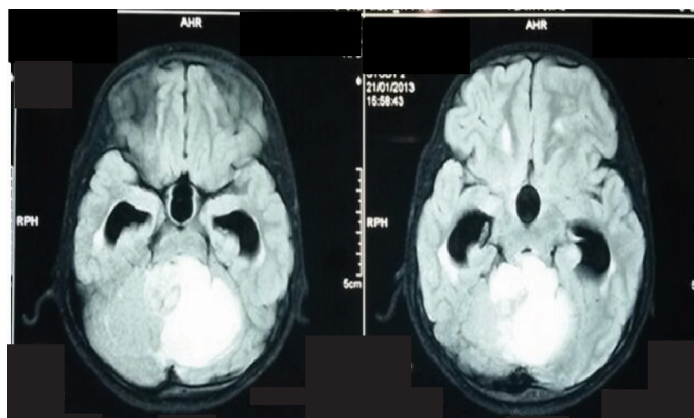


[Table/Fig-2]: MRI Brain following removal of the vermian mass.

15-25 minutes each time. He also used to wash his face again and again using soap. Following this he kept cleaning the wash basin for a long time and did it every time he washed his hands. He claimed that he felt restless and uncomfortable until he has done the task and felt relieved on its completion. Along with this he was also found brushing his teeth and taking a bath for an unusually long time (40-45 minutes) than he used to take earlier (10-15 minutes).

He had also developed a peculiar fashion of walking in which he took two steps forward followed by one step backward. He recognised that this was abnormal but says that he couldn't control this walk and had to do it this way. If he missed a backward step he would go back two steps again and then continue ahead. The patient mentioned that he felt embarrassed by his symptoms and avoided family functions or going out with friends due to the same. He also had an insight that all that he did was irrational and incorrect but said that he was helpless and sought treatment for the same.

He also started passing urine in his clothes when he was asleep at night. He would get up after the episode and felt shameful about the same as he was unhappy that this was happening at the age of 14. He had history of passing urine in the night as well as day time whenever, he was asleep when he was 6-7-years old and the symptoms went off in a year with treatment though details of treatment were unavailable. There was no history of any such complaints prior to the neurosurgery and there were no neurological



[Table/Fig-1]: MRI Brain showing vermian cystic mass and enhancing nodule causing mass effect in posterior fossa and tonsillar region prior to surgery.

signs seen on examination. All his routine investigations were within normal limits. He was also operated when he was very young for vesico-ureteric reflux at the age of 3 years. Opinions of neurosurgeon and neurologist were taken to rule out organic causes but they did not find anything specific.

There was no significant past and family history of similar complaints. He was full term normal delivery and had normal developmental milestones. He was currently studying in 9<sup>th</sup> grade and had an average scholastic performance. After the neurosurgery and emergence of his psychiatric symptoms, a decline in his academic grades was noticed.

He was given clinical diagnosis as Obsessive-Compulsive Disorder and Nocturnal enuresis following a cerebellar mass removal. This was in keeping with the fact that the symptoms were not present prior and emerged after the neurosurgery and mass removal. He was started on Fluoxetine 20 mg once a day and Imipramine 25 mg once in night time with the advice of regular follow-up to be maintained. His tumour pathology report ascertained that it was cerebellar haemangioblastoma. Family members noticed 30% improvement in his symptoms in 2 weeks and on subsequent follow-up weekly reported a 70% improvement in obsessive compulsive features while enuresis stopped at the end of 5 weeks.

## DISCUSSION

The neurobiology of Obsessive-Compulsive Disorder (OCD) has been widely studied with multiple brain structures like orbitofrontal cortex, limbic system, basal ganglia and cerebellum being implicated along with the neuronal circuits and connecting fibres that exist between them [1]. A number of studies have pointed towards the role of frontal lobe and basal ganglia lesions in the genesis of obsessive compulsive symptoms [2,3]. There has been a case report of a midline germinal tumour (brain dysgerminoma) and OCD symptoms reported [4]. The presence of head trauma, brain haemorrhage and stroke as well as bullet injuries have been implicated in the development of obsessive symptoms post the neurovascular event [5,6]. There is also a recent case report in

adult patient of the emergence of obsessive symptoms after the removal of a right frontal lobe tumour [7].

The cerebellum has been implicated in various psychiatric disorders ranging from schizophrenia to autism in which obsessive compulsive symptoms have been noted [8]. Partial cerebellar agenesis or hypoplasia has been implicated in obsessive compulsive symptoms and a similar pattern may happen when a cerebellar tumour occludes most of the cerebellum [9]. The cerebellar cognitive affective syndrome is a condition where the connections and circuits between the cerebellum and frontal lobes are often affected and may result in stereotypical behaviour and obsessive compulsive symptoms [10].

## CONCLUSION

This is the first case report to the best of our knowledge of OCD symptoms appearing after cerebellar vermian mass removal. To conclude, it is very much important that the cerebellum be explored further as aetiology for psychiatric disorders.

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### PARTICULARS OF CONTRIBUTORS:

1. Resident Doctor, Department of Psychiatry, Lokmanya Tilak Municipal Medical College, Mumbai, India.
2. Specialty Medical Officer, Department of Psychiatry, Lokmanya Tilak Municipal Medical College, Mumbai, India.
3. Research Associate, Department of Psychiatry, Lokmanya Tilak Municipal Medical College, Mumbai, India.
4. Professor and Head, Department of Psychiatry, Lokmanya Tilak Municipal Medical College, Mumbai, India.

### NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Avinash De Sousa,  
Carmel, 18, St. Francis Road, Off S.V. Road, Santacruz West, Mumbai -400054, India.  
E-mail: avinashdes888@gmail.com

FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Jan 22, 2016**  
Date of Peer Review: **Feb 05, 2016**  
Date of Acceptance: **Feb 29, 2016**  
Date of Publishing: **May 01, 2016**