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Case Report

Late adolescent primary nocturnal enuresis: a case report

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ABSTRACT

Primary nocturnal enuresis is a rare condition. Literature review revealed that 1% of boys still bed wet at 17 years of age. There is a paucity of literature on the incidence and prevalence of bed wetting in patients above 17 years of age. We therefore present a case of 18-year-old boy having bed wetting since childhood.

Keywords: Adolescent, Bed wetting, Primary nocturnal enuresis

INTRODUCTION

The term Enuresis in Greek means “to void urine”. The disorder of enuresis has been recognized for centuries. References dating back 3550 years to Papyrus Ebers have also been found Nocturnal enuresis commonly known as ‘Bed wetting’ is a disorder in which there are episodes of uncontrollable leakage of urine in children >5 years of age.[1] When nocturnal enuresis is present without associated lower urinary tract symptoms then it is referred to as Monosymptomatic Nocturnal Enuresis. Lower urinary tract symptoms include increased voiding frequency (≥8 times/ day), decreased voiding frequency (≤3 times/day), daytime incontinence, urgency, hesitancy, straining associated with weak urinary stream, and pain during micturition.[2]

Primary Nocturnal enuresis is the presence of enuresis in a child ≥5 years old who has never achieved an asymptomatic period of ≥6 months of consistent night time bed dryness.[3] Children who have achieved an asymptomatic period of ≥6 months of consistent night time dryness in the past having enuresis are said to be suffering from secondary enuresis.[3]

Primary nocturnal enuresis has not been recognized as a pathological condition by the medical community for a long period. As a consequence, there was no specific education at medical colleges resulting in poor involvement by medical practitioners. Enuretic children often have a sense of social indifference and isolation. Some of them do express low mood and low self-esteem. Management of nocturnal enuresis improves individual’s self-esteem, even if the management fails to cure this condition completely. The necessity to identify the cause of nocturnal enuresis is heightened when the clinician is faced with new and often distressed patient along with his/her concerned parents. The rapid identification of pathogenesis of this disorder is compromised by the multifactorial nature of its aetiology.

Primary monosymptomatic nocturnal enuresis is a heterogeneous condition for which many causative factors and underlying mechanisms have been identified. These include nocturnal polyuria, decreased bladder capacity, detrusor overactivity, associated sleep arousal disorders, global maturation delay and genetics. Treatment of Primary Monosymptomatic Nocturnal Enuresis depends upon motivation of the patient and a careful identification of possible mechanisms of the illness. Nocturnal enuresis is typically a self-limiting disease with the percentage of patients affected decreasing with age. It typically resolves spontaneously at a rate of 15 % per year. Studies have shown that Nocturnal Enuresis persisting at higher ages have a

diminishing likelihood of spontaneous remission. While many studies show 1-2% incidence of nocturnal enuresis among fifteen-year-old children, there are no studies that have documented this condition in children >17 years of age. We present here a case of Primary Nocturnal Enuresis in 18-year-old male.

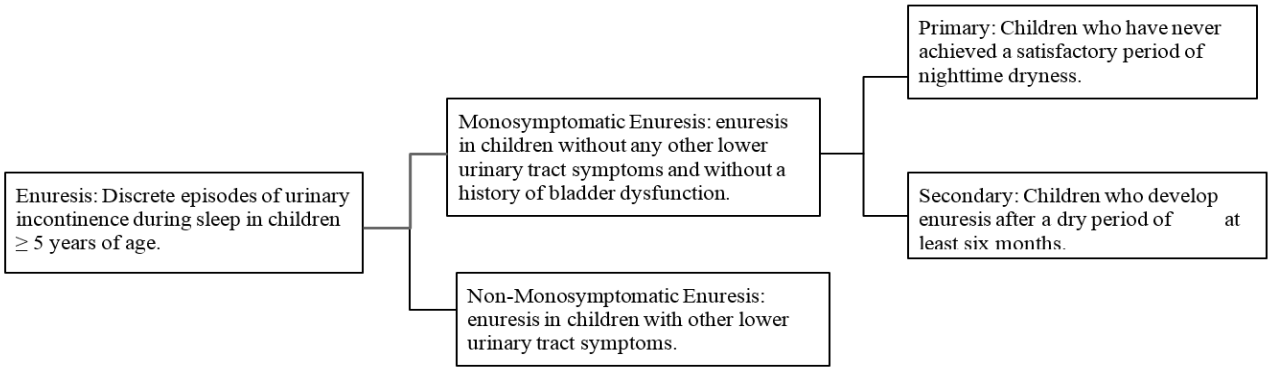

Figure 1: Enuresis diagnostic flowchart.

CASE REPORT

A tenth standard educated, academically below average 18-year-old male, who was working as a helper in a private company, hailing from a low socio-economic background, came to our psychiatry out-patient service along with his mother complaining of bed wetting since early childhood. He had a history of bed wetting on most of the nights since 3 years of age. His mother revealed to us that her son had remained dry continuously only for "as little as ten nights" since childhood. His mother also shared with us that her son used to have such a sound sleep that it was almost impossible to wake him up despite the fully wet bed. He was developmentally a normal child who was growing amidst a hostile environment of constant parental quarrelling. Since his mother was constantly criticizing about his bedwetting he preferred to stay at his grandmother's home. His urinary symptoms worsened after his father was admitted for psychiatric treatment following head injury. He told us that he had to pass urine at least ten to fifteen times during day time and 3 to 4 times during night for the past three years and it was not associated with lower urinary tract symptoms like pain, burning urination and urgency. As a result of this he was constantly bullied by his colleagues and reprimanded by his employer. He would often be dull, withdrawn and not communicate much with others. He felt that he was socially isolated and also expressed sad mood and low self- esteem to his mother.

He had a history of atopy and bronchial asthma since, 7 years of age and was on intermittent treatment. There was no past history of a psychiatric illness or a history of substance use. There was no family history of similar illness.

Physical examination revealed pitting of all nails, leuconychia and generalised absence of body hair and loss of both eyebrows. Systemic examination was done and found to be normal.

On mental status examination, patient was alert, ambulant, dressed appropriately, well kempt, rapport was easily established and was co-operative for the entire interview with a sustained gaze contact. No tics/ mannerisms/ stereotypic behaviour were noticed. His Psychomotor activity was normal. His talk was relevant, coherent and the rate, tone and quantum of his talk were normal. He had a depressed mood with an anxious affect. His thought content evaluation revealed low self-esteem, ideas of worthlessness associated with a sense of being failure in "all spheres of life". He also expressed ideas of hopelessness but denied harbouring suicidal ideas. There was no formal thought disorder or perceptual abnormalities.

Examination of his higher mental functions revealed that attention and concentration were well sustained, memory was intact, and he had an average intelligence in spite of difficulty in performing arithmetic. He also had a good abstract thinking, judgement and insight. He scored 12 on Hamilton rating scale for anxiety (HAM-A) and 16 on Hamilton rating scale for depression (HAM-D).

A thorough endocrinological evaluation revealed no abnormalities. Detailed urological evaluation consisted of physical examination by urologist, complete urinalysis, urine culture, ultrasonography of the genito-urinary system, urodynamic studies, diagnostic cystoscopy, and Magnetic Resonance Imaging of the spine and abdomen. The Urologist made no abnormal diagnosis on this patient. Extensive Neurological evaluation included Magnetic Resonance Imaging of Brain,

Electroencephalogram and sleep studies all of which were normal. All blood bio-chemistry parameters were within normal limits, thereby excluding a diagnosis of Diabetes mellitus and Diabetes insipidus. Our consultant dermatologist suggested topical steroid application for his Alopecia areata. The pulmonologist advised our patient to take bronchodilators whenever he had symptoms of wheeze.

We made a diagnosis according to International Statistical Classification of Diseases (ICD – 10) as F98.0 Non- organic enuresis with co-morbid anxiety and depressive symptoms. Both the patient and his mother were given detailed information about the illness. Urotherapy, a form of behaviour therapy, which includes decreasing fluid intake 1 to 2 hours before bed time, empty bladder before bedtime, avoidance of constipation, support for the family, and regular follow-up was advised. We initiated him on tab. Imipramine 50 mg twice daily, tab. Alprazolam 0.25mg at bed time for four weeks. One month later we found his HAM-A and HAM-D scores were normal. He however reported dissatisfaction with his bed wetting symptoms. We therefore added tab. Oxybutynin to his prescription and trained him to maintain a "bladder diary". During further follow-up, patient reported significant reduction in urinary frequency and incontinence. At the time of writing this report our patient was able to perform well at his work place and had started living with his mother.

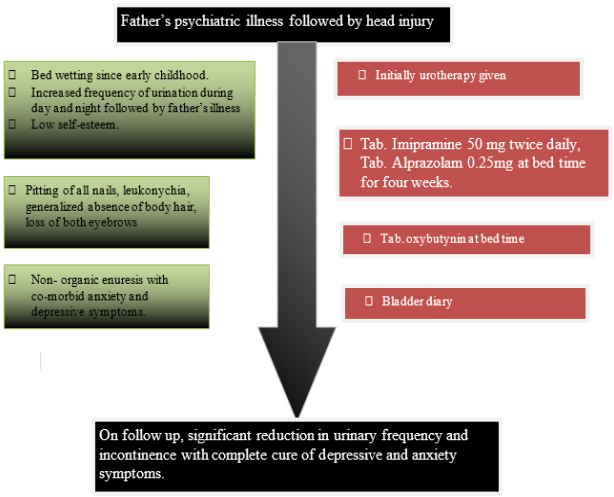

Figure 2: Timeline of patient's clinical condition.

DISCUSSION

To our knowledge this is the first case report in India describing the occurrence of primary monosymptomatic nocturnal enuresis in 18-year-old boy. We present this case in order to document its rarity and to stimulate further research work in this area. Despite extensive investigations we were not able to identify any specific cause for this patients' clinical problem. However, there were a few clues to certain possible mechanisms for nocturnal enuresis in this individual. Studies in the past have established that there are three main factors in the pathophysiology of enuresis. They are:

- High nocturnal urine production,
- Nocturnal low bladder capacity or increased detrusor activity,
- Arousal disorder.

Our patient is likely to have a combination of detrusor overactivity and arousal disorder. A slight increase in bladder wall thickness was indeed reported by the radiologist, even though the urologist disagreed. Even if there is no anatomical difference in bladder size, some studies have demonstrated reduction in nocturnal bladder function. Studies by Yeung et al have confirmed this ultrasonographic finding in their patients with primary nocturnal Enuresis.[4] We can also infer from this finding that our patient is likely to have a low functional bladder capacity. There are studies which have reported that patients with primary nocturnal enuresis have a functional bladder capacity corresponding to 70% of the expected capacity Safarijenad et al.[5] Studies by Troup et al have demonstrated a reduction in nocturnal bladder function when compared to daytime function.[6] This study has compared bladder capacity of children with Nocturnal Enuresis while awake and while under general anaesthesia to healthy age matched controls. It was observed that patients with Nocturnal Enuresis had significantly decreased voided urine volumes in the absence of any anatomical difference in bladder size. Other studies by Yeung et al have also confirmed that in children with Nocturnal Enuresis, night time voided volumes are significantly decreased compared to day time voided volumes.[7] Past studies have established the fact that enuresis is also a problem of awakening. Our patient had a classical history suggestive of problems with awakening and sleep arousal. Studies by Yeung et al suggest that chronic over-stimulation leads to down regulation of the voiding centre.[8] In normal children when the bladder reaches maximum capacity there is a sudden urge for urination. This sudden urge does not occur correctly in enuretic children.

We obtained a detailed pedigree chart of the patient's family in an effort to identify a genetic aetiology for his condition. Despite a detailed pedigree analysis and specific questioning regarding symptoms of enuresis there was no history of nocturnal enuresis in his family. However, literature is replete with reports that children of parents who have experienced nocturnal enuresis have a greater chance of suffering from Nocturnal Enuresis. Concordant Studies by Bakwin et al have found that monozygotic twins exhibit twice the risk of Nocturnal Enuresis when compared with dizygotic twins.[9] This particular study also found 75% incidence of Nocturnal Enuresis in children when both parents had a history of Nocturnal Enuresis compared to 50% when only one parent had a history of Nocturnal Enuresis and 15% when neither parent have had a history of nocturnal enuresis.

Though no specific genes have been identified, studies such as these suggest a genetic contribution to the recognised complex, multi-factorial aetiology of nocturnal enuresis.

CONCLUSION

It is extremely important to evaluate each case of nocturnal enuresis thoroughly and exhaustively. This would not only help the clinicians in distinguishing between the types of nocturnal enuresis (primary vs. secondary and monosymptomatic vs. non-monosymptomatic) but also help them in understanding possible pathophysiological mechanisms. Comprehensive management of the patient therefore involves psychiatric treatment and treatment of the possible underlying mechanisms.

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