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Psychogenic Polydipsia

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Abstract

To the best of our knowledge psychogenic polydipsia has not been reported in an Indian journal. We are reporting one such case, which was diagnosed as having depression according to ICD 10 R criteria. Fully investigated patient had some reversible changes in the urinary tract. There was no antidiuretic hormone-related abnormality as indicated by absence of hyponatremia. The patient recovered with antidepressant drugs. The followup was done for 6 months.

Keywords: Depression, psychogenic polydipsia, urinary tract changes, water intoxication

INTRODUCTION

About three quarters of a century has passed since Rowntree in 1923 and others began to discuss fluid dysregulation among chronic psychiatric patients. Since the first case report of water intoxication in a schizophrenic patient,^[1] a number of similar cases have been documented as psychogenic polydipsia (PPD), or compulsive fluid consumption. It is now well-recognized among psychiatric patients.

While in true diabetes insipidus the polyuria is due to a defective secretion of antidiuretic hormone (ADH), in PPD there is a disturbance in thirst control not caused by impairment of production or release of ADH. polydipsia is intake of water more than 5 L per day. In patients with primary polydipsia the illness generally develops in three phases, beginning with polydipsia and polyuria, followed by hyponatremia (water is retained as the kidneys fail to excrete the excess fluid, resulting in low sodium serum values) and finally water intoxication^[2,3] Of those suffering from primary polydipsia, only about one-half of patients ever have intermittent hyponatremia/water intoxication as a result of temporary retention.^[4,5] Water intoxication may manifest itself by a worsening of psychiatric symptoms, nausea, vomiting, delirium, ataxia, seizures, and coma, and may even be fatal.^[2] Polydipsia in psychiatry patients is seen in patients with chronic schizophrenia with long-term hospitalization. Other psychiatric diagnoses have rarely been associated with polydipsia, such as affective disorders, psychosis with onset during childhood, mental retardation and personality disorders, tension/anxiety^[2,3,6] psychogenic or primary polydipsia, affects about 6-20% of the psychiatric patients.^[7,8] There are no cases we believe in the Indian psychiatry scene

of the same.

CASE REPORT

A 25-year-old Muslim divorcee of lower socioeconomic status, presented to the OPD with complaints of excessive water intake, (12-25 l/day) occasional urge incontinence, marked anxiety (panic attacks), weeping spells, headache, weakness and sleep disturbance and an occasional disinhibited behavior essentially at the time of panic/anxiety periods, all gradually increasing for the last 3½ yrs or so. She had about 2 years of an unpleasant marriage to a widower. She had a stillbirth about 2 yrs after marriage. It was soon followed by a divorce. After about 6 months of separation she developed the above problems. This patient did not have a history of earlier physical or psychiatric disease. Personal history had nothing significant other than an unpleasant marriage. There was no family history of any psychiatric morbidity. Mental status showed an unkempt lady, (with a bottle of water in hand and sipping the same every few minutes) dressed according to her socioeconomic status. Patient was markedly anxious, restless, weeping off and on. There was marked decrease in appetite and sleep. She was not interested in doing her household work but she did the same if instructed. Depressive mood, lack of interest, asthenia and inability to concentrate were also present.

During episode of polydipsia, no signs of severe water intoxication such as confusion, delirium, seizures or coma were seen during this period of observation. Blood pressure was 120/70 mmHg, sinus rhythm 84 beats/min and temperature 37.5°C. Laboratory results: hemoglobin 9.5 gm% (normal 11.0-14 gm%), serum sodium measured 138 mmol/l (normal 135-145 mmol/l). Potassium 4, urea 13.00, S creatinine 1.39 and blood glucose were normal, 24 hrs urinary creatinine was 13.68mg/ dl and 24 hr micro proteins were 9.4 mg/dl. Radiological investigations (ultrasound KUB and intravenous pyelogram.) showed bilateral hydronephrosis, which could be explained by this prolonged state of over hydration. Follow-up ultrasound after 12 weeks showed reduction in hydronephrosis.

To evaluate the water balance of the patient, two diurnal weight measurements (in the morning and in the afternoon) were made during 5 consecutive days. No diurnal body weight gain was found. The water-restriction test indicated primary polydipsia.

At the end of the investigations, all possible organic factors were excluded. We concluded that this was PPD, without water intoxication or subintoxication. The patient also fulfilled the ICD-10 criteria for major depressive disorder (ICD 32.3) with symptoms of depressive mood, lack of interest, asthenia and inability to concentrate. All the symptoms of polydipsia regressed after a brief period of strict fluid restriction and treatment with benzodiazepines, antidepressants and supportive psychotherapy. She was followed-up for period of 6 months after her discharge from the hospital.

DISCUSSION

PPD is a multifactorial malfunction of the hypothalamic-pituitary axis (H-P axis) and is most likely to be a result of chronic intake of excess fluid changing the feedback regulation of the H-P axis. The various conditions in which PPD can be seen are (i) Positive symptoms schizophrenic, compulsive behavior and stress reduction.[2,3,6,9] (ii) PPD can also occur in psychiatric patients in order to reduce the effect of anticholinergic drugs.[10] (iii) It is also suggested that elevated levels of dopamine may be stimulating the thirst center, or the supersensitivity of the dopamine receptor may be responsible for the same as it is usually the chronic schizophrenics with long-term intake of neuroleptics presenting with PPD.[3]

In the patient we described, there was no hyponatremia and or signs of water intoxication. Thus, we concluded that the clinical signs of headache, and weakness, presented by this patient during the episode of polydipsia were not related to water subintoxication as we first thought. Depression was considered the

most likely explanation. This could also be due to the stress of broken marriage and childbirth as found by others also.[\[6,9\]](#)

The case being reported had pure PPD, as she was not on any drugs. There was no chance of any drug (neuroleptics or anticholinergic) responsible for the same. We wish to emphasize that PPD does not occur solely in the chronic psychiatric in patients. This case had a long course, as she was not treated for the same earlier. In this case it was to relieve her of anxiety that she was taking large amount of water but to little relief. Dryness of mouth and increased thirst to some extent is seen as sign of anxiety but it was the intensity, frequency and the chronicity, which had lead to the hydronephrotic changes in the case. It is hoped that this observation will help clinicians to better identify PPD patients at risk of water intoxication and will promote future studies in psychiatric populations.

Footnotes

Source of Support: Nil

Conflict of Interest: None declared.

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