WATER INTOXICATION IN DEPRESSION: A CASE REPORT

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SUMMARY

Patient of "psychotic depression" who digested large quantity of water and subsequently developed grand mal seizure and serum sodium levels of less than 121 meq/litre is presented. The physiology of psychogenic polydypsia and related disorders is reviewed. The relation of this disorder to the use of phenothiazines and antidepressants is considered.

Case History:

Mrs. S., a 32 years old married Hindu female presented to the Emergency Room with confusion, disorientation and vomiting which progressed to stupor and generalised seizure. The patient was attended by the internist on duty. Her history revealed that she had been psychiatrically ill for the last 2 years. She was hospitalised 1 year back for her abusive, self-destructive, guilty and suicidal behaviour and was treated with ECTs and a combination of antidepressants and phenothiazines. She had recovered well and was on maintenance drugs, consisting of tablets Imipramine, Triflouoperazine and Trihexyphenidyl each given thrice daily, at the time of her admission to the emergency room. It was revealed by the attendant that she had indulged in a water drinking bout a few hours before she was brought to the casualty. The amount of water ingested had been estimated by the attendant to be approx. 4-5 litres over a period of a few minutes. It was also discovered that she had been taking large quantity of water intermittently ever since she started taking treatment from the psychiatric OPD, one and half years back.

The findings on her first examination by the internist were: consciousness Grade-III; plantar B/L silent; tendon reflexes exaggerated; abdominal B/L absent (flabby abdomen); CVP raised by 6 cms. Systemic examination showed B/L basal crepitations; aortic murmur at the base; liver enlarged by 4 cms, soft, smooth & tender. Urinary bladder was full with overflow incontinence. The clinical impression was that of 'water intoxication'.

Her investigations showed serum Na 115 meq/l, BUN 6mg% and urine specific gravity 1005. Her EEG was normal. She was treated with injectable diphenyl hydantion, dexamethasone, ampicillin, frusemide and normal saline as hypertonic saline could not be procured. Patient showed gradual improvement in her consciousness and at the end of 24 hours she was fully conscious with no right ventricular overload and without any neurological deficit.

At this juncture, a call to the psychiatry deptt. was sent for consultation. The mental status examination showed her to be fully conscious, co-operative and communicative. However, she was distractible and wore anxious facies. She denied to be sad nor did she express any pessimistic or suicidal ideas. Her cognitive functions were intact and she had no delusions or hallucinations. Her intelligence was judged to be below average.

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Her insight and judgement were intact vis-à-vis her sociocultural background. The clinical impression was that of 'Anxiety state with no depressive or psychotic features'. The psychiatrist opined that she be maintained on imipramine and lorazepam and trifluoperazine and trihexyphenidyl be withdrawn because of their anticholinergic side effects. The patient was discharged after a week with the advice to attend psychiatry OPD.

**Discussion**

Ever since Roundtree's (1923) description, water intoxication has been described in a variety of clinical settings and patients of all ages. It can occur in the postoperative patients and paediatric population due to iatrogenic causes (Tucci, 1981). It can also occur in pregnant women being given oxytocin and in patients with diabetes insipidus taking pitressin preparations (Tucci, 1981; Stormont and Waterhouse, 1961).

Water intoxication has been reported in patients with psychiatric disorders and psychogenic polydipsia. These include schizophrenia, primary affective disorders, neuroses and alcoholism (Resnick and Patterson, 1969; Devereaux and McCormick, 1972; Chinn, 1974; Mendelson and Deza, 1976; Barlow and DeWardener, 1959). In some patients, the desire to drink may be related to excessive thirst induced by anticholinergic side effects (dry mouth) of psychoactive drugs, particularly the phenothiazines (Tucci, 1981); while in others there is no apparent explanation for polydipsia (Devereaux & McCormick, 1972).

The fact that our patient was taking phenothiazine at the time of her admission to the emergency room raises a number of questions. There is some human and animal evidence that chlorpromazine may have a diuretic effect, either by a depressant action on ADH secretion and/or inhibition of reabsorption of sodium and water in the kidney (Mendelson and Deza, 1976). On the other hand, high doses of phenothiazines have been associated with seizures (Davis, 1985). One may speculate that psychiatric patients receiving these drugs may be more susceptible to seizures from hyponatraemia than other patients.

Water intoxication in the present case seems attributable, more likely, to the anticholinergic side effects (dryness of mouth) than to the psychogenic polydypsia. Apparently, the patient was in remission and had no psychologically or socially stressful events at the time of or prior to her bont of water drinking, to account for the psychogenic nature of polydypsia. Moreover, there had been a history of intermittent excessive water intake related temporally to the phenothiazine/antidepressant therapy. There was no evidence in the history of compulsive excessive water drinking prior to the institution of pharmacotherapy although the total duration of the illness was 2 years. We feel that the polydypsia and water-intoxication in the present case seem related aetiologically to the phenothiazine/antidepressants and may constitute a serious albeit rare complication of phenothiazines/antidepressants use. However, some sort of symbolic or real psychosocial stressor at the time of water drinking bout cannot be entirely ruled out which might have accounted for polydypsia and subsequent water intoxication. Anxiety may be one factor or polydypsia might have been a symbolic gesture for help or self punishment. Although, the patient's examination by the psychiatrist was thorough and exhaustive, the patient's naivety might be a reason for failure to discover any psychological disturbance to account for polydypsia.

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