CASE REPORT

Anorexia nervosa and dialysis: we have no time when the body is so damaged!

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SUMMARY

Anorexia nervosa remains challenging to treat and difficult to prevent. Nearly 5% of affected individuals die of this disease and 20% develop a chronic eating disorder. Anorexia nervosa may be associated with several medical complications of varying severity, including dysfunction of the renal system. Though there are some reports of renal failure in patients with anorexia nervosa, few reports are available concerning patients who required maintenance dialysis. We report a case of a patient with long-term untreated anorexia nervosa-binge eating/purging type who started psychiatric treatment when in a life-threatening situation (renal failure requiring dialysis), with unsuccessful weight recovery while on dialysis and died of septicaemia. The mechanisms that seem to be involved in the development of end-stage renal disease in this patient and the challenges associated with her treatment are reviewed. Patients with anorexia nervosa should be carefully monitored to discover the subtle manifestations of early renal failure.

BACKGROUND

Eating disorders, including anorexia nervosa, remain challenging to treat and difficult to prevent. The prevalence of anorexia nervosa is the highest among teenage girls (up to 0.7%).¹ Nearly 5% of affected individuals die of this disease and 20% develop a chronic eating disorder.¹

Anorexia nervosa may be associated with several medical complications of varying severity, including dysfunction of the endocrine, metabolic, gastrointestinal and renal systems.²

Severe electrolyte changes (hypokalaemia and hypophosphataemia) and disorders of water homeostasis (hyponatraemia and oedema) can occur in patients with anorexia nervosa, especially in those with purging behaviour.³ Hypokalaemia and chronic dehydration may lead to renal failure, and sometimes, end-stage renal disease (ESRD).³ On the contrary, chronic renal failure can be caused by drugs, such as non-steroidal anti-inflammatory drugs (NSAIDs) especially in individuals with previous renal dysfunction.⁴

We present a case report of a patient with long-term untreated anorexia nervosa-binge eating/purging type and ESRD who died while undergoing dialysis, and discuss the mechanisms that seem to be involved in the development of ESRD. With this paper, we also intend to describe the challenges associated with psychiatric treatment in this patient.

CASE PRESENTATION

The patient was a single 41-year-old woman who had always lived with her parents (she had a

10-year older brother, married with children who lived away from her and her parents). She studied up to the ninth grade and had no problems learning. She decided to leave college because she did not like studying and wanted to help her parents. She used to help her parents in their family business, showing little autonomy from them. She had always liked to cook in her spare time. Being the main cook at big family parties, she would cook many different kinds of dishes. She was never involved in a serious relationship.

Her medical history was negative for congenital illness, neurological disease, developmental delay, diabetes, cardiovascular disease or other medical conditions.

She had a 21-year history of untreated anorexia nervosa, binge eating/purging type. She started a restrictive diet when she was 18 years old, weighing at that time 66 kg (body mass index (BMI) of 29 kg/m²), the maximum weight ever reached, with progressive weight loss after that. About a year later, she began episodes of compulsive food intake with associated compensatory self-induced vomiting. She had suffered from amenorrhoea since the age of 20. From the age of 22 to 30 years, she maintained episodes of compulsive food intake and compensatory behaviours such as self-induced vomiting and laxative abuse with progressive weight loss (BMI of 11.39 kg/m²). She also developed an addiction to NSAIDs (20 pills of 400 mg of ibuprofen per day, for 1 year) due to a severe case of gout.

At the age of 32, blood tests revealed chronic renal failure and longstanding polydipsia and nocturia were found. At that time, she attended nephrology consultations, with irregular adherence, for over 1 year. Given the presence of renal cysts and hyperuricaemia, the diagnosis of medullary cystic disease was hypothesised, but a renal biopsy was not performed due to her advanced renal failure. During a follow-up consultation, blood analysis revealed hypokalaemia and primary aldosteronism was excluded. At this point, she started treatment with erythropoietin. From the age of 32 to 39, she had several hospitalisations for aggravated chronic renal failure.

In September 2009, she was hospitalised for a week for rhabdomyolysis (increased creatine kinase activity) with acute exacerbation of chronic renal failure. There are reports in the literature about rhabdomyolysis and accompanying renal failure in adolescents and adults with anorexia nervosa.⁵ During hospitalisation, she was uncooperative and refused to start dialysis for her ESRD. She was then transferred to the Psychiatry Department of Centro

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Hospitalar de São João—Porto, in order to receive skilled monitoring for her eating disorder. Upon admission, she presented a BMI of 12.5 kg/m². Although initially uncooperative to the treatment, she gradually became cooperative in her treatment process. The initial priority of hospitalisation was her medical recovery—the patient remained temporarily at rest, in order to be able to focus on her weight gain. Laboratory findings showed chronic renal failure and anaemia which was treated with erythropoietin and repeated blood transfusions. She was also treated with psychotropic medication, namely olanzapine 2.5 mg/day. She was discharged with a BMI of 13.2 kg/m².

While hospitalised, she received information on alternative techniques of renal function (her blood analysis revealed chronic kidney disease—stage 5, creatine clearance of 11 ml/min), but she refused preparation for dialysis. In February 2010, she accepted the need for dialysis, revealing preference for peritoneal dialysis. Four months later, she started peritoneal dialysis treatment.

After discharge, the patient was oriented to psychiatric consultations where she underwent cognitive-behavioural psychotherapeutic intervention and she was prescribed the same inpatient psychotropic medication.

OUTCOME AND FOLLOW-UP

She attended the psychiatric consultations mostly on an irregular basis, never getting involved too much in the psychotherapeutic work and showing a poor adherence to psychotropic medication.

In August 2011, she was hospitalised for peritonitis. Since she did not improve with the antibiotic therapy instituted, the peritoneal catheter was removed with progressive decrease of inflammatory markers and she began haemodialysis three times a week. She strictly complied with the haemodialysis sessions, however, her attendance to the psychiatric consultations was still poor, presenting a BMI of 11.67 kg/m². She always showed great concern for her personal appearance, carefully matching the colours of her clothing, always presenting the hair arranged and the nails painted; she also liked to use many accessories, including necklaces, earrings and bracelets. About few weeks later she began peritoneal dialysis and shortly after she was re-admitted for septicaemia and died.

DISCUSSION

We report a case of ESRD that developed in a patient with untreated long-term anorexia nervosa, purgative type. This patient began severe food restriction when overweight (BMI of 29 kg/m²), which is not the most usual.

Though there are some reports of renal failure in patients with anorexia nervosa, few reports are available concerning patients who required maintenance dialysis.^{6–7} This maybe because patients with anorexia nervosa die from medical complications before progressing to ESRD.⁶

In this case, we discuss the mechanisms that seem to be involved in the development of ESRD. First, although a renal biopsy was not performed, the hypothetical diagnosis of medullary cystic disease cannot be excluded (based on the history of hyperuricaemia and in the presence of renal cysts revealed by renal sonography). Second, hypokalaemia (due to vomiting and laxative abuse) is speculated to play an important role in the long term progress of renal failure. Previous researches on hypokalaemic nephropathy have reported interstitial nephritis in patients on whom biopsy was performed.^{8–10} Rhabdomyolysis might have also been induced by chronic hypokalaemia in addition to dehydration.¹¹ Third, renal insufficiency might have been induced by intravascular volume depletion according to

severe energy restriction, laxative abuse and vomiting secondary to this eating disorder.⁸ Last but not the least, we consider that the excessive intake of NSAIDs may have contributed to additional kidney damage.

These patients become very complex to manage clinically. In this case, appropriate treatment for anorexia nervosa implies primarily refeeding, but the dietary restriction and the feeling of fullness implied in peritoneal dialysis complicates the treatment process.

This patient, suffering from severe organic complications requiring urgent medical treatment, decided to start life-saving and psychiatric treatment when the body was badly damaged. We account that the denial of the disease with the refusal to attend psychiatric consultations over 21 years contributed to the worsening of organic consequences of anorexia nervosa and to the resistance we felt in the implementation of psychiatric treatment. We were aware of the great difficulty that we had at hand: to motivate a chronic purging anorectic female to psychiatric treatment when medical treatment was a priority. We thought it could be valuable to provide psychiatric consultations in the department of nephrology, taking advantage of the patient's presence at the haemodialysis sessions. The patient agreed to have consultations in the department of nephrology, but unfortunately, she succumbed to a second hospitalisation for septicaemia, showing that although she endured a serious illness for many years, the body has its limits

Learning points

- ▶ Dysfunction of the renal system can be a severe medical complication of patients with anorexia nervosa.
- ▶ The stigma of a psychiatric disease and the absence of physical symptoms of a disability can hamper treatment.
- ▶ Patients with anorexia nervosa should be carefully monitored to discover the subtle manifestations of early renal failure. Clinicians should bear in mind the consequences associated with long-term purging.

Competing interests None.

Patient consent Obtained.

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