

Managing an Inpatient with Severe Obsessive Compulsive Disorder, Anxiety and Malnutrition



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Patient	• 29-year-old male (Mr X)
Previous medical history	• Generalised anxiety disorder • Obsessive compulsive disorder (OCD)
Diagnosis	• Exacerbation of OCD • Severe malnutrition
Weight on admission	• 47 kg
Body mass index (BMI) on admission	• 15 kg/m ²

Introduction

Obsessive compulsive disorder (OCD) is ‘characterised by the presence of either obsessions or compulsions, but commonly both.’¹ The prevalence of OCD is estimated to be 1-3% of the population.¹ OCD can occur across all age groups but most commonly presents in young people.²

Generalised anxiety disorder ‘is one of a range of anxiety disorders that includes panic disorder, post-traumatic stress disorder, obsessive compulsive disorder, social phobia, specific phobias and acute stress disorder’.³ In 2013, there were 8.2 million cases of anxiety in the UK.⁴

Poor mental health can severely impact nutritional status, with 18-20% of patients admitted to mental health units at risk of malnutrition.⁵ Depression, anxiety and OCD are frequently reported in anorexia nervosa.^{6,7}

The aim of this case study is to highlight the complexity of assessing, treating, reviewing and managing an inpatient with severe OCD, anxiety and malnutrition. The role of the dietitian as a crucial member of the multidisciplinary team in successfully contributing to this patient’s care is presented.

Background

A 29-year-old man with known severe OCD and anxiety was admitted to the Emergency Department (ED) following a 10-day history of refusing to eat and drink. Prior to this, his only daily oral intake was one 500 ml bottle of water and one to two sandwiches for approximately six weeks. He did not leave his house for 10 days and, predominantly, remained in bed. His GP undertook an urgent domiciliary visit and then arranged an admission to the ED. Upon admission, an ED Consultant contacted the dietetic department and requested an urgent dietetic review which was undertaken the same day.

On examination, Mr X looked extremely malnourished, cachectic, weak, and jaundiced. He was unable to quantify how much weight loss had occurred. However, a review of his medical records identified his previous recorded weight was 61 kg (BMI 19.4 kg/m²) approximately three and half years ago.

Mr X was also clinically dehydrated, with sunken eyes and very dry mouth, skin, and mucous membranes. He was clearly very anxious and expressed his wish of not wanting people to be too

close to him. This was driven by the fear of being contaminated or contaminating others.

Whilst in ED he was reluctant to allow staff to undertake some clinical observations. However, blood tests were taken, and the main results are listed in **Table One**. Mr X was biochemically dehydrated with hypernatraemia, had raised urea, creatinine, phosphate, and magnesium levels, and a low glomerular filtration rate (GFR). He was subsequently diagnosed with an acute kidney injury (**Table One**). A vitamin D blood test was requested by the dietitian and revealed vitamin D insufficiency. Trust vitamin D guidance was then implemented.⁸ The role of dietitians identifying vitamin D deficiency in the acute setting has been previously highlighted by the author.⁹

Social history revealed he was a non-smoker and rarely drank any alcohol.

He was eventually transferred from the ED to the High Dependency Unit for six days for monitoring. He was then transferred to a medical ward and then spent four days on a mental health ward before returning to another medical ward. Mr X remained in hospital for 105 days. Upon discharge his dietetic care was then transferred to a local community dietetic team.

Intervention

Days 1-4

Mr X was identified as being at high risk of refeeding syndrome (RFS) due to a BMI less than 16 kg/m², likely unintentional weight loss greater than 15% within the last three to six months, and little or no nutritional intake for more than 10 days.¹⁰ Pabrinex was prescribed as one pair of ampoules once a day, along with Forceval once a day, by the medical team for 10 days. Due to the severe extent of Mr X’s malnutrition, thiamine (100 mg tds) and vitamin B compound strong (2 tablets tds) were prescribed after the course of Pabrinex. Forceval continued to be prescribed. Intravenous fluids were also prescribed, and Mr X was encouraged to drink. Daily blood biochemistry was monitored, including: sodium, potassium, urea, creatinine, phosphate, magnesium, corrected calcium, liver bone profile, and full blood count. Nutritional requirements were calculated.¹¹ The aim was to eventually provide 1926 kcals, 59 g protein, after the risk of refeeding syndrome had subsided, and 1700 mls of fluid per day.

Mr X was extremely anxious about eating hospital food, especially in an unfamiliar environment, so oral nutritional supplements (ONS) were used to provide nutritional support. Initially a variety of ONS were used and doses were slowly titrated depending on blood biochemistry results and tolerance. However, compliance with the ONS varied greatly and this was further exacerbated by his OCD. If a nurse did not follow his preferred ritual of providing the ONS in the correct manner, then the ONS would not be consumed. For example, Mr X could only consume ONS if they did not touch his lips. If his lips were touched he deemed himself contaminated. Administering the ONS proved extremely difficult.

Days 5-15

One of the main problems with Mr X's OCD was he was unable to use the standard hospital cutlery and crockery due to his fear of being contaminated or contaminating someone else. To overcome this, a special diet was arranged with the catering department. Food was served on a plastic bowl or plate, with plastic cutlery, and wrapped in cling film. Mr X also did not want any food touching his lips. Initially Mr X's dietary intake slowly improved, and he was drinking the majority of his ONS. His weight increased from 47 kg on day 1 to 50.8 kg on day 9; however, some of this weight gain was likely due to underlying oedema and not necessarily entirely nutrition related. Unfortunately, towards the end of this period his overall health status significantly deteriorated due to feeling extremely anxious about being in hospital and the importance of conducting important rituals to keep himself clean.

He subsequently refused to eat, drink, receive intravenous fluids, and medication.

Days 16-20

Despite regular input from the mental health team during his admission, Mr X's mental health deteriorated further. He was transferred to a local mental health ward for urgent psychiatric assessment and treatment. Whilst on the mental health ward he continued to refuse to eat and drink and was subsequently transferred back to the Acute Medical Unit (AMU) where he was sectioned under section 2 of Mental Health Act 1983.

Days 21-105

On examination whilst on the AMU, Mr X looked pale, weak, extremely malnourished

and significantly dehydrated. His weight had decreased from 50.8 kg (BMI 16.2 kg/m²) to 45.4 kg (BMI 14.4 kg/m²), now lower than his admission weight. The dietitian and medical team decided that nasogastric tube feeding was required and a nasogastric tube (NGT) was inserted. Mr X was identified at being at extreme risk of RFS and nutritional requirements were calculated to reflect this.¹¹ A cautious nasogastric feeding regime was then commenced (**Table Two**). This was then gradually increased during his admission depending on blood biochemistry and gastrointestinal tolerance. Oral intake was encouraged, however, Mr X predominantly refused to eat and drink throughout the rest of his admission.

Table One: Blood Results from Admission and Discharge

Parameter	Range	On admission	On discharge
Sodium	133-146 mmol/L	149	142
Potassium	3.5-5.3 mmol/L	4.5	4.0
Urea	2.5-7.8 mmol/L	20.4	8.0
Creatinine	66-102 mmol/L	145	53
Total bilirubin	0-21 umol/L	29	8
ALT	5-45 IU/L	36	43
Alkaline phosphatase	30-130 IU/L	56	52
Total protein	60-80 g/L	86	61
Albumin	35-50 g/L	57	40
Globulin	23-41 g/L	29	21
Corrected calcium	2.20-2.60 mmol/L	2.38	2.20
Serum glucose	3.0-12.0 mmol/L	6.4	-
Phosphate	0.8-1.5 mmol/L	1.75	1.14
C-reactive protein (CRP)	0-10 mg/L	<1	7
Magnesium	0.7-1.0 mmol/L	1.29	0.91
GFR	90-500 mL/min/1.73m ²	53	161
Haemoglobin	130-180 g/L	181	107
White cell count	4.0-11.0 x 10 ⁹ /L	7.35	4.01
Vitamin D	60-150 nmol/L	35	-

Table Two: Naso-gastric Feeding Regime, Weight and BMI

Day	Feed	Volume (ml)	Rate ml/hour	Duration (hours)	Energy (kcal)	Protein (g)	Weight (kg)	BMI (kg/m ²)
21	Nutrison	300	30	10	300	12	45.4	14.4
22-24	Nutrison	400	40	10	400	16	-	-
25-27	Nutrison Energy	500	50	10	750	30	-	-
28-31	Nutrison Energy	700	70	10	1050	42	-	-
32-34	Nutrison Energy	1000	75	13	1500	60	-	-
35	Nutrison Energy	1200	110	11	1800	72	-	-
*36-50	Nutrison Energy	1400	107	13	*2100	*84	49 (D43) 50.4 (D50)	15.6 16.1
51-56	Nutrison Energy	1000	100	10	1500	60	50.4 (D56)	16.1
57-59	Nutrison Energy	1200	100	12	1800	60	-	-
60-63	Nutrison Energy	1300	108	12	1950	78	-	-
*64-86	Nutrison Energy	1400	116	12	*2100-2580	*84-90	49.9 (D64) 50.4 (D71) 51.6 (D78) 50.6 (D85)	15.9 16.1 16.4 16.1
*87-105	Nutrison Energy	1500	125	12	*2250-2890	*90-98	52.4 (D93) 52.2 (D99)	16.7 16.6

D = day; *Refer to additional nutritional support

Additional nutritional support

To promote weight gain, a low volume, energy dense, nutritional supplement was needed and was administered via his NGT. On day 38, Calogen Extra was started 40 mls (bd) which provided an additional 320 kcals and 4 g protein/day (total 2420 kcals and 88 g protein/day). This was stopped on day 39 because his alanine aminotransferase (ALT) increased from 86 to 102 IU/L. Calogen Extra was restarted (40 mls bd) on day 71 (total 2420 kcals and 88 g protein/day) and was then increased on day 74 (40 mls tds), which provided 480 kcals and 6 g protein (total 2580 kcals and 90 g protein/day). On day 87 Calogen Extra was then further increased (40 mls, qds), which provided an additional 640 kcals and 8 g protein (2890 kcals and 98 g protein/day).

Results

Weight and BMI

Mr X's weight increased from 47 kg (BMI 15 kg/m²) on admission to 52.2 kg (BMI 16.6 kg/m²) on discharge. His weight did fluctuate throughout his admission from 45.4 kg (BMI 14.4 kg/m²) to 52.7 kg (BMI 16.8 kg/m²).

Blood biochemistry

Mr X was at high risk, and at times extreme risk, of RFS. However, his potassium and corrected calcium levels remained normal throughout his entire admission. His magnesium level was raised at the beginning of this admission but soon returned to normal. His phosphate levels predominantly remained within the normal range throughout his entire admission apart from four occasions when they were slightly low (0.67 mmol/L on day 23; 0.72 mmol/L on day 30; 0.74 mmol/L on day 31; and 0.72 mmol/L on day 39). Oral phosphate replacement was used to correct these levels. Urea levels were mildly raised, and creatinine levels were slightly decreased at intermittent periods.

Total bilirubin and ALT levels were high. His bilirubin was raised on day 1 (29 umol/L) and then soon returned to normal. This did slightly increase again on day 21 until day 29 (range 22-30 umol/L). His ALT was raised from day 7 until day 21 (range 54-57 IU/L) and then returned to normal. This then increased again on day 34 until day 93 (range 46-205 IU/L). His ALP and CRP were normal throughout his entire admission. Mr X also experienced pancytopenia with evidence of low levels of white blood cells, red blood cells, and platelets. Haemoglobin levels were also low, from day 35 until day 99 (range 103-128 g/L).

Discussion

During Mr X's admission he did not develop any biochemical evidence of RFS apart from four days of mild hypophosphataemia; despite being at high and extreme risk of RFS. In one study, only 2% (3/243) of patients receiving artificial nutrition support were diagnosed with RFS using specific criteria.¹² Independent risk factors for RFS in this study were starvation and baseline low-serum magnesium. The most critical period of RFS is within the first 72 hours.¹³ However, this did not occur with Mr X. On reflection, a more aggressive nutrition support plan could have been implemented in the early stages. However, exerting a cautious approach in patients identified at risk of RFS has previously been acknowledged by other dietitians.¹⁴ A practical algorithm has now been developed to risk assess, treat, and monitor RFS in medical inpatients.¹³

Despite great time and effort in providing additional nutrition support, this was often inhibited by Mr X's OCD beliefs and concerns regarding food, and beverage provision and his repetitive behaviours, such as wearing medical gloves due to obsessive thoughts of uncleanliness. Similar behaviours have been witnessed in other case reports in OCD patients.^{15, 16}

Likewise, weighing Mr X was challenging at times. He would often only allow certain ward staff to enter his side-room without touching the doorframe and handle. In addition, there were intermittent periods of the NGT becoming blocked or removed, problems obtaining the correct gastric pH, and delays in chest X-rays to confirm the position of the NGT. Consequently, his nutritional status will have been compromised.

Blood biochemistry was checked regularly, and the main concern was an elevated ALT during refeeding. This did improve after temporarily reducing his enteral feeding regime. Significantly raised ALT levels have also been identified in other case studies involving extremely malnourished patients receiving artificial nutrition support.¹⁷ Liver dysfunction in patients with severe anorexia nervosa on admission¹⁸ and during refeeding has been previously identified,¹⁹ and ALT was the most commonly elevated liver enzyme test. The median length of hospital stay was eight days longer in patients with severely elevated liver enzymes. Increases in liver enzymes are often characterised by an enlarged liver due to hepatic fat and glucose deposition in the liver.²⁰ However, during his admission, Mr X was prescribed sertraline and olanzapine which could have also contributed to his raised liver enzymes.²¹ Mr X also developed pancytopenia, likely related to being extremely malnourished, and this has been identified in a case study report involving a female patient with anorexia nervosa.²²

After a prolonged hospital admission Mr X was eventually discharged home. Prior to discharge his NGT was removed and he regained confidence in restarting his ONS. He continued to receive regular and intensive mental health support from his local mental team, resumed adequate oral intake, and was waiting for a residential placement at a specialist OCD centre.

Learning points

- Early and regular multidisciplinary team work was essential. This included working closely with the following teams: catering, nursing, medical, psychology, and psychiatry.
- Building a rapport with Mr X was extremely important which helped establish trust with each other.
- Despite Mr X's severe OCD and anxiety, he expressed a desire to improve his overall health and was determined to make a recovery from these deliberating conditions.

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