Management of physical aspects and complications of eating disorders

Anthony P Winston

Eating disorders can lead to a wide range of physical complications. Although some are relatively benign, others are potentially life-threatening; cardiac and biochemical abnormalities are particularly dangerous. Some complications are secondary to malnutrition, others are the result of purging.

Management of serious complications requires close collaboration with appropriate medical specialists. The NICE guidelines for the treatment of eating disorders[1] include a number of recommendations on the management of physical complications. They emphasize the high level of risk when eating disorders are combined with type 1 diabetes (see pages 30–3) or pregnancy. Patients in both groups require intensive monitoring and close collaboration with other health professionals.

Physical complications of anorexia nervosa (Figure 1)

Electrolyte disturbances – a number of electrolyte abnormalities can occur, including hypokalaemia, hypomagnesaemia and hypocalcaemia. Hypokalaemia is common in individuals who purge but relatively rare in the pure restrictive form of the disorder; it can produce changes on the ECG and is a risk factor for cardiac arrhythmias. A normal serum potassium can mask a significant total body deficit. Treatment with oral potassium supplements may be required, with the aim of maintaining the serum potassium above at least 3.0 mmol/l. Hypokalaemia that is refractory to treatment may be secondary to hypocalcaemia or hypomagnesaemia. Hyponatraemia may indicate an excessive water intake.

Oral complications – repeated vomiting can cause erosion of dental enamel (Figure 2a) and even loss of teeth; regular dental reviews are recommended. Parotid enlargement also occurs, and friction of the dorsum of the hand against the teeth during vomiting may lead to the development of calluses (Russell's sign; Figure 2b).

What's new?

- NICE published guidelines for the treatment of eating disorders in 2004
- Proton pump inhibitors may be useful in the treatment of hypokalaemia secondary to vomiting

Anthony P Winston *is Consultant in Eating Disorders at the Woodleigh Beeches Centre, Warwick Hospital, and an Honorary Senior Lecturer at the University of Warwick, UK. He has a particular interest in the medical and nutritional complications of eating disorders.*

Major/common complications of anorexia nervosa

Gastrointestinal	Dental erosion
	Parotid enlargement
	Oesophagitis
	Acute gastric dilatation
	Delayed gastric emptying
Cardiovascular	Bradycardia
	Hypotension
	Arrhythmias
	Prolonged QT interval
	Re-feeding oedema
Metabolic	Hypokalaemia
	Metabolic alkalosis
	Hyponatraemia
	Hypomagnesaemia
	Hypothermia
	Hypophosphataemia
	Hypocalcaemia
Haematological	Neutropenia
	Anaemia
	Thrombocytopenia
Musculoskeletal	Osteoporosis
	Rhabdomyolysis
Neurological	Peripheral neuropathy
	CT and MRI abnormalities
Endocrine	Amenorrhoea
	Lowered testosterone

1

Haematological complications – bone marrow suppression may present as anaemia, neutropenia and thrombocytopenia; rarely is neutropenia sufficiently severe as to cause clinical problems. In cases of anaemia, deficiencies of iron, folic acid and vitamin B_{12} should be excluded. However, use of iron supplements early in re-feeding can be hazardous.

Gastrointestinal complications – delayed gastric emptying is common and often results in sensations of abdominal fullness; it resolves with weight restoration. Constipation is a common problem, particularly in patients who have abused laxatives. It can usually be managed with a combination of sufficient fluid and dietary fibre together, if necessary, with stool-softening agents or bulk laxatives.

The gastrointestinal symptoms of anorexia nervosa are often indistinguishable from those of irritable bowel syndrome; they rarely respond well to antispasmodic drugs.

Abnormal liver function tests with elevated aminotransferases can occur at presentation or during re-feeding. The cause is obscure but it appears to be self-limiting; other causes of liver dysfunction need to be excluded.

Cardiovascular complications – sinus bradycardia and hypotension are common but do not usually require treatment unless the patient is symptomatic. ECG changes include non-specific ST and T wave changes, reduced size of the QRS complex and prolongation of the QT interval (Figure 3). The latter is a risk factor for ventricular arrhythmias and sudden death. QT prolongation may result from electrolyte disturbance but also occurs in the presence of normal serum electrolytes. Drugs that prolong the QT interval, such as antipsychotics, tricyclic antidepressants, macrolide antibiotics and some non-sedating antihistamines, should be avoided.

Neurological complications – peripheral neuropathy may reflect folic acid deficiency or non-specific nutritional deficiencies. CT scans may show enlargement of the sulci and ventricles. Although the CT changes appear to be reversible with re-feeding, recent MRI evidence suggests that grey matter changes occurring in adolescence may be irreversible.

Nutritional complications – in addition to the general effects of malnutrition, a number of specific vitamin and mineral deficiencies also occur. Thiamin and zinc deficiency are particularly common; both can be corrected with oral supplements. Use of a comprehensive micronutrient supplement such as Forceval is often appropriate as many deficiencies cannot be detected on routine laboratory screening.

Osteoporosis – significant loss of bone mineral density occurs in up to 40% of patients with anorexia nervosa. Oestrogen deficiency

a Dental erosion caused by repeated vomiting.
(By courtesy of Dr D Bartlett, United Medical and Dental Schools, London, UK.)

b Calluses caused by self-induced vomiting (Russell's sign).
(By courtesy of Professor G F M Russell and *Psychological Medicine*.)

2