Bulimia Nervosa

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Risk

- Prevalence ranges from 3–30% among women aged 15–30 y.
- Bulimic symptoms can be part of the anorexia nervosa syndrome.
- The bulimic type is more damaging than anorexia nervosa as the combination of vomiting, laxative abuse, and malnutrition can lead to global organ dysfunction.

Perioperative Risks

- Increased risks (which have not been quantified) of hypotension, cardiac arrhythmias, hypothermia, aspiration of gastric contents, and metabolic abnormalities and their consequences.

Worry About

- Reduced cardiac muscle mass with a decrease in chamber size, impaired myocardial contractility with decreased cardiac output, and relative hypotension
- Mitral valve prolapse, arrhythmias, and severe bradycardia
- Starvation, dehydration and electrolyte abnormalities (hyponatremia, hypokalemia, hypoalbuminemia, hypomagnesemia, hypocalcemia, hypophosphatemia)
- Alterations (hypofunction) in autonomic nervous system function and a hypervagal state
- Abnormal temp regulation
- Decreased gastric emptying, gastric dilatation, diminished GE sphincter tone, aspiration of gastric contents, gastric rupture, and accompanying peritonitis
- Compensatory hypoventilation due to chronic metabolic alkalosis from recurrent vomiting and laxative abuse
- Mallory-Weiss tear or esophageal rupture leading to acute mediastinitis
- Liver and kidney dysfunction
- Osteoporosis and irreversible dental/gingival disease

Overview

- Eating disorder characterized by binge-eating episodes followed by self-induced vomiting, fasting, and abuse of diuretics or laxatives.
- Greatest periop risks are associated with low cardiac output and cardiac arrhythmias.
- Hx is characterized by denial and is often unreliable. Pts may report exercise intolerance, cold intolerance, weight fluctuation, and syncope.

Etiology

- Unknown; thought to be largely emotional

Usual Treatment

- SSRIs, such as fluoxetine (Prozac), have been found to be the most effective pharmacotherapy. The second line of pharmacologic treatment is with tricyclic antidepressants.
- Cognitive behavioral therapy.
- K^+ supplements.

Assessment Points

System	Effect	Assessment by Hx	PE	Test
CV	Cardiomyopathy, mitral valve prolapse, arrhythmia, ipecac cardiomyopathy	Exercise intolerance, syncope	Heart sounds, BP, pulse	ECG, ECHO
RESP	Bradypnea		Vitals, auscultation	ABGs
GI	Gastric dilatation, diarrhea Gastric rupture/peritonitis Hepatic dysfunction Inanition	Usually unreliable Projectile vomiting	Skin turgor, pulse, BP, abdomen	Lytes CT scan, ABGs, CBC Hepatic enzymes Serum glucose
ENDO	Decreased T3 and T4, decreased norepinephrine, decreased vasopressin secretion, abnormal temp regulation	Cold intolerance		
HEME	Pancytopenia	Bruising, infections	Skin	CBC, plt
RENAL	Decreased GFR on basis of dehydration			BUN/Cr
CNS	Depression, decreased CSF norepinephrine Decreased pain sensitivity		Subconjunctival hemorrhage	
DERM	Dry skin/mucous membrane		Callus formation on dorsum of hand	
ORTHO	Decreased bone mass			X-ray, DEXA scan
GYN	Amenorrhea	Menstrual cycle alteration		LH, FSH
MS	Muscle mass, myalgias	Marked weight fluctuation	Cachectic	

Key References: Suri R, Poist ES, Hager WD, et al.: Unrecognized bulimia nervosa: a potential cause of perioperative cardiac dysrhythmias. *Can J Anaesth* 46(11):1048–1052, 1999; Seller CA, Ravalia A: Anaesthetic implications of anorexia nervosa. *Anaesthesia* 58(5):437–443, 2003.

Perioperative Implications

Preoperative Preparation

- Assess cardiac status, electrolytes, hepatic enzymes, volume status, and UPT.
- Consider urine toxicology screen to rule out comorbid substance abuse.

Monitoring

- Routine.
- Arrhythmia, volume status, myocardial function.
- Temp monitoring is important.

Airway

- May have increased risk of aspiration of gastric contents; consider NG tube.

Induction

- Hypovolemia, myocardial dysfunction, and ANS dysfunction may make for CV instability.
- Sodium citrate and H^+ blocker administration, plus utilization of rapid-sequence induction.
- Lower doses of nondepolarizing neuromuscular blocking drugs, as decreased K and Ca augment the blockade.
- Careful positioning, as these pts are susceptible to nerve palsies and other musculoskeletal injuries from severe cachexia and osteoporosis.

Maintenance

- CV instability, volume and lyte status, as well as temp should dictate anesthetic regimen.
- Avoid older agent halothane, as arrhythmia threshold decreases with use of this gas.

Extubation

- Awake extubation because of GI motility dysfunction.
- Autonomic hypofunction may lead to sudden postop collapse.

Adjuvants

- Vary if lyte, renal, or hepatic dysfunction exists.

Anticipated Problems/Concerns

- Gastric volume changes may increase risk of aspiration
- Volume status, lyte, CV, and ANS changes increase risk of hypotension, arrhythmia, and sudden postop collapse
- Habitus and metabolic changes may predispose to hypothermia
- Menstrual irregularities. UPT advised.