Eating Disorders

ANOREXIA NERVOSA

- obsessional weight loss without identifiable organic cause.
- Richard Morton first described anorexia nervosa in 1689 as condition of "Nervous Consumption" caused by "sadness, and anxious Cures."

**CLINICAL FEATURES**

1. refusal to maintain minimally normal body weight (weight is at least 15% less than expected for given height)
2. intense fear of gaining weight (even when significantly underweight)
3. significant disturbance in perception of body shape or size - appropriate body weight is perceived as excessive or low body weight is perceived as appropriate (in some cases, may border on delusional)
4. amenorrhea (absence of at least 3 consecutive menstrual cycles) - required for diagnosis in females?
5. onset - early adolescence or early adulthood (average 13-14 yrs); onset often preceded by period of mild obesity or mild dieting.

**ASSOCIATED FEATURES**

1. many anorectics are high achievers with above average intelligence.
2. overactivity (even in cachetic patients?); obsessive-compulsive features* (related to and unrelated to food; e.g. obsessions and rituals connected with food and food preparation).
3. organic brain symptoms (e.g. cognitive slowing, apathy, depression); depressed mood*, insomnias
4. social withdrawal, concerns about eating in public, limited social spontaneity
5. diminished interest in sex.

**SUBTYPES**

1. Restricting type (≤ 50%) - weight loss accomplished primarily through dieting, fasting, excessive exercise.
   - patients are more likely to be more obsessional, more socially awkward, and more isolated.
2. Binge-eating/purging type (≥ 50%) - patients regularly engage in binge-eating → purging behavior (self-induced vomiting, laxatives, diuretics, enemas; most individuals engage in these behaviors at least weekly).
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body mass index, low body fat percentage (up to point of emaciation).
- bowel dysfunction: Na⁺, K⁺, Mg⁺, phosphorus, electrolyte imbalances; metabolic alkalosis; protein and albumin concentrations are normal; serum albumin (rare in other causes of weight loss)
- neuroimaging: ventricular enlargement, decreased gray and white matter (generally normalize with weight gain).
- bones: osteoporosis.

**EPIDEMIOLOGY**

- 90-95% cases occur in females.
- **PREVALENCE** (fully meeting DSM-IV criteria) - 0.5-1% females in late adolescence and early adulthood.
- **INCIDENCE:** highest among whites (esp. Jewish, Italian) and increases.
- special risk group - competitive athletes (ballet, gymnastics, figure skating, distance running, bodybuilding, wrestling).
- familial pattern has been noted.
- far more prevalent in industrialized societies where food is abundant and thinness is measure of feminine attractiveness, many patients belong to middle or upper socioeconomic classes.

**ETIOLOGY**

- - combination of genetic, neuroendocrine, physiological, and psychosocial influences.

**Specific genetic factors** appear to be important in etiology (disorder runs in families; concordance in identical twins > 50%).

**Neuroendocrine** - substantial number of abnormalities of hormone regulation have been described.
- hypothalamic hypothesis - hypothalamic abnormalities (e.g. neurotransmitter disturbances) are primary cause of dysfunctional eating and neuroendocrine dysregulation.
- starvation hypothesis - abnormal hormone and neurotransmitter regulation result from reduced caloric intake (i.e. adaptation to starvation state).

**Physiological** - act to sustain fasting: delayed gastric emptying.

**Psychological**
- - psychodynamic theories - transactional theory: anorexia is failure to separate, individuate, and develop autonomy from primary caregivers (i.e. child's refusal to eat is overridden by parent's need to feed child → eventually, child cannot regulate her own eating and becomes dependent on her environment).
- - psychoanalytic theory - fear of sexuality: symptoms serve as defense in fear of and resistance to growing up (i.e. fear sexuality, menarche, and pregnancy, and starve themselves to remain prepubescent); impregnation - girls believe if semen is swallowed she will become pregnant + fear of fates is rejection of any possible pregnancy.
- - family theories - dysfunctional family eating: disorders are method used by parental female as tool for help for conflicted and dysfunctional family; adolescent's attempt to begin process of separation and emancipation in overinvolved family or to exert developmentally appropriate autonomy and self-control in rigid, autocratic family is seen as disrupting family system → therefore, regression of child from normal adolescent strivings to preadolescent level is seen.
- - cognitive-behavioral theories - learned behavior maintained by positive reinforcement (low weight is reinforced by peers and society).
- - media influences: Nutritional attractiveness; many patients belong to special risk group (esp. Jewish, Italian)

**DIFFERENTIAL DIAGNOSIS**

1. Medical conditions: Addison's disease, hyperthyroidism, any chronic illness (e.g. Cushing disease, ulcerative colitis, rheumatoid arthritis, Hbc, diabetes), neoplasms (esp. CNS tumors), superior celiac artery syndromes (may be cause and also complication of severe weight loss).

2. Psychiatric conditions: schizophrenia (delusions about food are more bizarre), depression, hysterical noneating (absence of morbid concern with weight and calories), anorexia nervosa.

**TREATMENT**

**Malnutrition correction** - first step! (esp. fluid, electrolyte, cardiac status)
- indications for hospitalization: > 20% weight loss, electrolyte, cardiovascular, or neurological signs.
- removing patient from her home sometimes reverses downhill course.
- - 30-40 kcal/kg/day - weight gain should be gradual (1.5 kg/wk during inpatient care and 0.5 kg/wk during outpatient care).
- - self-monitoring eating diary is good for follow-ups; family members and roommates can check reliability.
- - alimentation should be provided by nongoassic tube if patient steadfastly refuses to eat, and should be readministered if food is vomited; if these measures fail → hyperalimentation through central intravenous line.
- - careful attention to accuracy of weight measurements - serial weights should be obtained at same time of day, on same scale, in same garment (preferably hospital gown only), and after vomiting.
- - to B.E. attempts to pad weight artificially by drinking large quantities of water or concealing objects on body are typical of anorectics!
- - urine should be monitored regularly for ketones before each meal (information about starvation state).

**Pharmacotherapy** has limited value:
- 1) SSRI (esp. FLUOXETINE) can prevent relapse after weight gain.
- 2) antianxiety agents before meals - to reduce anticipatory anxiety concerning eating.
- 3) promotility agents (e.g. METOCLOPRAMIDE) - to bloating and abdominal pains due to gastroparesis and premature satiety.
- 4) OLanzapine may help with weight gain and relieve morbid fear of obesity.
- 5) estrogen replacement to reduce calcium loss in patients with chronic amenorrhea.
- 6) for osteoporosis - CA 1200-1500 mg/day, vitamin D 800-900 IU/day, and, if severe, bisphosphonates.

- For binge-eating type, study (Shapiro, 2000) found TOPiramate may have favorable effect.

**Psychotherapy** conducted over extended time frame.
EATING DISORDERS

PSY (3)

- 2 weeks of monitoring is recommended before beginning psychotherapy (expect some initial resistance?).
- strong therapeutic relationship, based on trust and understanding, is crucial.
- individual psychotherapy (particularly cognitive-behavioral therapy): positive reinforcement (system of privileges) for eating and negative contingencies for refusing to eat.
- family should be involved in treatment (anorectics need to be watched and instructed for most of day?)
- group psychotherapy sometimes can have negative therapeutic effects (e.g. patients may compete for who can be thinnest).

PROGNOSIS

Only 30-50% patients have relatively complete recovery. Mortality is high!
- 6-8% patients eventually succumb to disorder – suicide (50% of deaths), starvation, electrolyte issues, cardiac dysrhythmias, infections.

BULIMIA NERVOSA

- recurrent binge eating (ravenous overeating) followed by guilt, depression, and anger at oneself for doing so.

DSM-IV Criteria for Bulimia Nervosa

1. Recurrent episodes of bingeing, characterized by:
   1) consumption of large amounts of food that exceeds what normal person would eat during given time period, under similar circumstances.
   2) feeling of not having control over eating during episode.
2. Recurrent inappropriate weight-controlling behavior (e.g. self-induced vomiting, use of cathartics, excessive exercise).
3. Binging and inappropriate weight-controlling behavior, both at least twice weekly for 3 months.
4. Self-evaluation unduly influenced by body shape and weight (i.e. persistent overconcern with weight and body shape).
5. Disturbance does not occur exclusively during episodes of anorexia nervosa.
6. Two distinct types (how patients compensate for high-calorie binges):
   - purging type – regular vomiting and use of diuretics or cathartics.
   - nonpurging type – caloric restriction or exercise.

- onset - adolescent and young adult females (PREVALENCE 5%-10% college-age females).
- bingeing episodes occur in secret with ingestion of high-calorie food.
- during episode, sense of lack of control over eating exists.
- episode is terminated by sleep, abdominal pain, social interruption, or self-induced vomiting.
- stealing may be necessary to support expensive eating habit.

- fluctuations in weight with attempts to lose weight (through dieting, exercise, cathartics, diuretics, enemas).

- N.B. no significant weight loss! (vs. anorexia with binge eating).
- lengthy phases of normal eating.

Associated psychiatric comorbidities: mood and anxiety symptoms, substance abuse, personality disorders.

Medical complications:
1. Metabolic abnormalities (e.g. hypokalemia, hypochloremic alkalosis), anemia
2. Sequelae of induced vomiting - scars on knuckles, dental erosion and caries, parotid gland swelling, chronic sore throats and esophagitis, esophageal rupture.
3. Gastric dilatation and rupture
4. Cardiomyopathy (from long-term ipecac use to induce vomiting).
5. Menstrual irregularities

ETIOLOGY

Psychological theories
- need to take in something orally that resembles something that children fantasize that eating ravenously can help them grow.
- short stature children fantasize that eating ravenously can help them grow.
- bulimia has been described in psychogenic dwarfism (retarded growth due to emotional neglect).
- disorder of self-regulation (high rates of coexistent substance abuse and stealing).

Biologic theories - hypothalamic lesion in hypothalamic satiety center.

DIFFERENTIAL DIAGNOSIS

1. Prader-Willi syndrome
2. Klüver-Bucy syndrome
3. Kleine-Levin syndrome
4. Hypothalamic lesions
5. Anorexia nervosa (includes significant weight loss!)
6. Binge eating in obesity (bingeing is not terminated by purging)
7. Epilepsy
8. CNS tumors

TREATMENT

- treatment-resistant condition; use combination:
  1. Individual psychotherapies of psychodynamic, behavioral, and cognitive orientations + supportive group psychotherapy
  2. Medications are not usually indicated: antidepressants (SSRI, esp. FLUOXETINE)! antipsychotics, lithium, carbamazepine, phenytoin.

N.B. antidepressants are more effective in bulimia than in anorexia!

BINGE EATING DISORDER

- binge eating not followed by inappropriate compensatory behavior (such as self-induced vomiting or laxative abuse).
- occurs most commonly in obese people (vs. bulimia nervosa).
- affects 2-4% general population (up to 30% among obese people); nearly 50% are men.
- ≤ 50% obese binge eaters are depressed (especially if they are trying to lose weight) compared with ≤ 5% of obese non-binge eaters.

Most effective treatment - standard behavioral weight-loss program (not only produces weight loss but also controls binge eating)
- cognitive-behavioral therapy is effective in controlling binge eating but has little effect on body weight (because of compensatory nonbinge eating).
- SIBBS control both binge eating and weight, but discontinuation is frequently followed by relapse.
- self-help groups (Overeaters Anonymous, Food Addicts Anonymous) may help some patients.
FEEDING AND EATING DISORDERS OF INFANCY AND EARLY CHILDHOOD

• parents of 2-8-yr-olds are often concerned that child is not eating enough or eating too much, eating wrong foods, refusing to eat certain foods, or engaging in inappropriate mealtime behavior (e.g. sneaking food to pet, throwing or intentionally dropping food).

• if child appears well and growth is within acceptable range, parents should be reassured and encouraged to minimize conflict and coercion related to eating. Prolonged excessive parental concern may in fact contribute to subsequent eating disorders:
  – attempts to force-feed are unlikely to increase intake; child may hold food in his mouth or vomit.
  – parents should offer meals while sitting at table with family, without distractions (such as television or pets), and show little emotion when putting food in front of child.
  – food should be removed in 20-30 min without comment about what is or is not eaten.
  – child should participate in cleaning up any food that is thrown or intentionally dropped on floor.
  – restrict between-meal eating to one morning and one afternoon snack.

PICA
- persistent (for ≥ 1 month) eating of non-food products (e.g. dirt, clay, paper, plaster).
• differentiate from practice of mouthing inanimate objects, which is normal at 6-12 months of age.
• etiology:
  1) mental retardation.
  2) nutritional deficiencies (esp. iron deficiency → craving for ice and nonfood items).
  3) parent-child problems (esp. repeated, traumatic separations) - ingestion represents response to deprivation and unfulfilled oral needs.
  4) rare neurologic conditions (e.g. Klüver-Bucy syndrome).
  5) cultural factors - ingested substance is believed to have magical or medicinal properties.
• complications: bezoars, lead poisoning.
• treatment:
  1) any nutritional deficiencies should be corrected.
  2) dangerous objects should be removed from child’s environment.
  3) increase amount of child stimulation (most cities offer infant-stimulation programs).
  4) psychotherapy for child and parents.

RUMINATION DISORDER
- purposeful expulsion of previously ingested food followed by food re-chewing.
• potentially fatal disorder.
• most common in infancy to early childhood (extremely rarely in adults, usually with coexistent bulimia nervosa or mental retardation).
• usually occurs when child is alone or is attended only peripherally - food and chewing soothe infant when alone, much like special doll or blanket.
• treatment
  – in-depth psychotherapy of one or both parents.
  – infant's nutritional status should be closely followed.

BIBLIOGRAPHY

Viktor’s Notes™ for the Neurosurgery Resident
Please visit website at www.NeurosurgeryResident.net