September 30, 1965

ANOREXIA NERVOSA

Case presentation

This 23-year old unmarried white woman was referred for consultation at The University of Texas Southwestern Medical School because of the possibility of an endocrine disorder. She had apparently been well until about one year previously when she noted the abrupt onset of amenorrhea. Previous menstrual history was unremarkable and she had experienced regular and normal menses since menarche at age thirteen. She had never been pregnant.

Simultaneously with the cessation of menses, the patient had begun to lose weight and over the twelve-month period had dropped from 138 to 79 pounds. The patient admitted a decreased food intake during this time but the extent of dietary curtailment was uncertain. She at no time had nausea, vomiting, diarrhea, or abdominal pain. Despite the profound weight loss the patient expressed a sense of well being and strength. She denied hunger.

About seven months after the onset of amenorrhea and weight loss the patient began to note the appearance of excessive hair growth on the face, thighs, and upper arms. The hirsutism was unaccompanied by other symptoms. There were no noticeable changes in breast size or external genitalia. She had noted no deepening of the voice.

Past history was essentially noncontributory and review of systems was unrewarding. Careful inquiry revealed no evidence of psychological trauma. The patient apparently had a good relationship with her parents and no obvious sexual maladjustments were detected. It was noted that the patient exhibited a peculiar unconcern about her symptoms. She adamantly refused hospitalization for work-up but agreed to be seen as an outpatient.

Physical examination revealed a profoundly wasted young woman who was vigorous and lively. Blood pressure was 90/70 and pulse was 65. The skin was tanned in areas exposed to sun, but no abnormal pigmentation was noted. She had stiff, dark hair over the sides of the face, the chin, the upper lip and around the nipples of the breasts. She also had excessive hair, though of a lighter texture, on the upper arms and over the thighs. The eyes appeared normal and no gross field defects were noted on confrontation. Retinal examination revealed no abnormalities. The thyroid was not palpable. The lungs were clear throughout and the heart was normal in every respect. The abdomen was flat and no organs or masses could be felt. The external genitalia were normal and the clitoris was not enlarged. The introitus was virginal, the vaginal mucosa appeared thin, and the uterus was small. No adnexal masses were noted. The breasts were small but not wasted or atrophic. The extremities showed no edema. Neurological examination was normal.

Laboratory examination was as follows:

Hb - 10.7
Hematocrit - 31%
WBC - 4300; 50% lymphs, 48% segs, 2% bands
Urinalysis - S.G. 1.027, sugar negative, acetone negative, rare WBC
BUN - 30 mgs%
Creatinine - 0.9 mgs%
Sodium - 144 mEq/liter
Potassium - 3.5 mEq/liter
Carbon dioxide - 28 mEq/liter
Chloride - 104 mEq/liter
MCV (Price-Jones) - 100.5
Serum iron - 121 µG%, iron binding capacity 238 µG%
FBS - 66 mgs%
Calcium - 9.3 mgs%
Phosphorous - 3.0 mgs%
Albumin - 4.4 G%
Globulin - 1.2 G%

24-hour urinary 17-ketosteroids - 9.2 mg
24-hour urinary 17-hydroxycorticosteroids (control) - 2.5 mg

24-hour urinary 17-hydroxycorticosteroids (after 2 days ACTH) - 23.5 mg
24-hour urinary gonadotrophins - between 6 and 16 mouse units

Seven-day stool fat - normal
D-xylose absorption - normal
Secretin test - normal

Skull Xrays - Normal. No evidence of sellar enlargement.

On the basis of the above findings a diagnosis of anorexia nervosa was made, and the patient referred back to her private physician. She continued to be unconcerned about her emaciation and in fact seemed to be completely unaware of its existence, returning to her job as a physical education teacher in a nearby community. Two months after last being seen she was returning to visit her physician under considerable pressure by her parents. Her trip was interrupted when she stopped her car in a small town on the way and committed suicide by stepping in front of an oncoming freight train.

Estimated Weight Loss as a Function of Caloric Intake

Duration (mos.)	Caloric Intake as Percentage of Normal Balance							
	90	80	70	60	50	40	30	20
3	5	8	10	12	15	20	25	30
6	8	12	15	20	25	30	35	45
12	10	15	20	25	30	35	40	

% Original Body Weight

A Comparison of the Findings in Hypopituitarism and Anorexia Nervosa

Characteristic	Hypopituitarism	Anorexia Nervosa
Sex	Predominantly female	Predominantly female
Age of onset	Childbearing age	Puberty; postpubertal
Previous health	Good	Neurotic tendencies
Activity	Restricted; nonspontaneous	Overactive, ritualized exercise
GI symptoms	None	Frequently marked
Weight loss	Unusual	Invariable and marked
Breast atrophy	Usual	Rare
Facial and body hair	Normal or decreased	Frequently increased
Sexual hair	Lost	Preserved
Amenorrhea	Invariable	Invariable
Urinary gonadotrophins	Low or absent	Usually low or absent
Thyroid function	Usually depressed	Normal
Adrenal function	Often depressed	Probably normal

Some Characteristics of Two Types of Semi-Starvation

Characteristic	Imposed Starvation	Anorexia Nervosa
Hunger	Present	Absent
Activity	Restricted	Vigorous; hypomanic
Fatigue	Present	Absent until late
Cold intolerance	Present	Absent
Weight loss	Marked	Marked
Amenorrhea	Present	Present
Breast atrophy	Usual	Unusual
Edema (untreated)	Usual	Often absent
Edema (treatment)	Decreases	Frequently appears
Skin pigmentation	Present	Present
Bradycardia	Present	Present
Hypothermia	Present	Present
BMR	Decreased	Decreased
Plasma proteins	Normal to Low	Normal to Low

Some Characteristics of Total Starvation and Semi-starvation

Characteristic	Total Starvation	Semi-starvation
Hunger	Absent	Present
Edema	Rare	Usual
Ketosis	Present	Absent
Uric acid	Increased	Normal
BMR	Decreased	Decreased
Blood pressure	Decreased	Decreased
Pulse	Slow	Slow
Anemia	Common	Common

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