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## Papers

### The Differential Diagnosis of Anorexia Nervosa

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In my view the diagnostic problems surrounding primary anorexia nervosa arise mainly because, like other disorders such as alcoholism and much neurotic illness, it is primarily, albeit defensively, adaptive for, rather than alien to, the individual concerned. It is professionally frustrating for many of us, as doctors, to accept such apparent gross disability as in any way adaptive and existing primarily to serve individual need or family homeostasis. Our relationship to the 'patient' with anorexia nervosa rarely has any mutuality in its foundations and, not surprisingly, is usually clinically barren.

Anorexia nervosa is a common condition, occurring approximately ten times more often in females than in males. It is also social class linked (Crisp 1977). It may arise briefly, remit spontaneously, or continue in recurrent or chronic form. Whilst 50 % of known hospital cases come to be finally free of it after five years, the mortality over the same period of time remains of the order of 5 %. Death is almost invariably due either to a specific act of suicide or else to inanition, and only very rarely to intercurrent infection.

Individuals with anorexia nervosa will still, as patients, desperately and effectively conceal from others the central features of their psychopathology and behaviour. Diagnosis of the condition involves initially the recognition of clinical pathology at two levels. A third level also becomes a necessary one to penetrate, if any kind of re-educative or reconstructive psychotherapy is contemplated as part of the treatment programme.

The first level of diagnosis concerns the more readily observable and commonplace phenomena of the typical case. However, even to obtain adequate information at this level, one may often need to gather it from sources other than the patient.

Clinically the patient will usually appear emaciated and a history of amenorrhœa will be available. The stigmata of starvation will be present, embracing paradoxically the conservation and foraging needs of the body under such circumstances. Thus the patient has a reduced basal metabolic rate with a shut-down of peripheral circulation and the development of lanugo hair. Reproductive capacity is sacrificed early on. In addition, the typical restlessness by day and night, hoarding and preoccupation with food would seem to have been biologically conferred on the patient. The anorectic welcomes the first, appears to others to be mean and may shoplift in relation to the second. In our land of plenty she needs desperately to defend against the third and the related impulse to ingest and assimilate food. Such defences form the basis of much intense and sometimes bizarre social behaviour which is usually described by parents and teachers. The anorectic's preoccupation with dietary schedules and her feeding up of the rest of the family contrast with her surrounding her own intake with rituals and isolation.

One of two main dietary patterns may prevail: either abstinence, mainly of carbohydrate, conferring the unique state of carbohydrate starvation; or else a bulimia/vomiting and/or purging syndrome within which any or all components may be concealed. These two patterns, both concerned with low weight maintenance, promote radically different metabolic and indeed clinical pictures. The former is the more common when the disorder is of recent onset, whilst the latter is a more chronic feature. The carbohydrate abstinence pattern is associated with a particularly low basal metabolic

rate (BMR) and with biochemical abnormalities, usually restricted mainly to the areas of carbohydrate and fat metabolism. Disturbances of the latter may be particularly severe if, instead of a uniformly reduced food intake, the individual alternates periods of total abstinence with major bingeing, but without vomiting. Other abnormalities can arise within this context if the patient's noncarbohydrate dietary intake becomes too bizarre.

The bulimia/vomiting/purging pattern is associated with more generalized features of malnutrition. The patient may now ingest large quantities of carbohydrate along with other foods. Protein metabolism becomes grossly impaired and vitamin and mineral depletions arise. With excessive purging, e.g. 50 senna tablets a day, potassium depletion in particular becomes a problem. Major disturbances of fluid balance arise, alternate waterlogging with dependent œdema on the one hand and dehydration on the other can present, especially if the patient is intermittently drinking very large quantities of fluid as a noncalorific means of assuaging the appetite. Such individuals, who may be behaving secretly in this way all day long, spending large sums of money, ingesting say 10 000 calories and then vomiting all of most of them, may still conceal their behaviour and may state emphatically that they wish they could gain weight. If only their intake but not their vomiting is known to others, they may come to be regarded as discrediting the first law of thermodynamics.

Moreover, within this pattern, individuals do not show the same degree of hypometabolism as do the abstainers. They may at times appear warm and clammy with a racing pulse. Even when emaciated their BMR may be no lower than $-20$. They menstruate more readily and at a lower body weight than the abstainers and they can be fertile at weights below 45 kg and even without menstruating.

Anorectics may take, sometimes secretly, drugs other than purgatives. The most common of these are amphetamines, diuretics and thyroxine, probably because of their presumed weight-reducing properties. Sedatives, including alcohol and minor tranquillizers, are also sometimes consumed in large quantities.

Thus the diagnosis can sometimes be very difficult to make at this first level of the physical syndrome. The process will be hampered usually by the potential patient's hiding of relevant information. If weight loss is not great and the dietetic patterns are not readily evident, then the differential diagnosis can become very complex.

The second level of diagnosis has to do with the identification of the central pathological feature of the condition: namely the individual's steadfast and overriding, though often denied, preoccupation with first pursuing a low body weight and then maintaining it, within the context of an increasing phobia of a biologically normal adolescent weight and attendant fatness. Many anorectics, like abstaining alcoholics, see themselves as one lapse away from damnation – they become potential carbohydrate addicts. Their primary concern is not to eat in order not to gain weight. Ask any anorectic with whom you have established a truthful relationship whether she would mind eating and assimilating forty times her present calorie intake providing she gained no weight thereby, and she will linger longingly over such an idea.

Individuals with anorexia nervosa deny their weight phobia, since general awareness of it would lead to their being considered by others as more responsible for their condition than is usually the case and would render them more vulnerable to outside influence by inviting much closer scrutiny of their motives and habits. Thus only a few anorectics are referred with an explicit history of postpubertal concern about their volume and shape, their dieting and weight phobia.

The presence of weight phobia or shape or volume phobia and the overriding terror of fatness, within the context of low body weight and its attendant features described above, is pathognomonic of anorexia nervosa. Often it remains concealed for years and may never be revealed. Only after recovery can anorectics talk more freely about the experiential forces that have been at work in their erstwhile 'illness'.

The third level of diagnosis, with which we need not concern ourselves greatly here, has to do with the specific psychosocial, including the family, basis for the disorder. For many years now, I have maintained the parsimonious and teleological view that the biological regression evident in the condition reflects the individual's needs to avoid adolescent and related family turmoil. I construe the disorder as arising in relation to the pivotal significance of the weight/fatness specific levels of puberty, with the dietary patterns being reinforced by the acute relieving effects they come to have, as biological and related psychological childhood is re-experienced and postpubertal experience is concurrently eliminated. These psychosocial maturational demands of adolescence are not, in my view, specific to the condition. The tendencies to construe life's difficulties in terms of body size, and the absence of other psychological resources and defence mechanisms reflecting major childhood psychological developmental defects, are probably more specific.

What then are the main differential diagnostic problems from a medical standpoint? They are probably best divided into psychiatric and somatic and I will try to illustrate them with reference to

our own series of 350 patients and their families accumulated since 1960 (Crisp *et al.* 1977).

*Differential Diagnosis in Relation to Psychiatric Disorders*

Anorectics are often content to linger, misdiagnosed and unrecognized, within the psychiatric clinical field.

As a population, anorectics are not unduly depressed. However, they may have experienced depression before the onset of their anorexia. Moreover, within the illness, and in relation to different factors, they may be depressed sporadically or sometimes even more persistently. Anorexia nervosa, though adaptive in many ways, is not, as a withdrawal-avoidance process, in any way a satisfactory solution to the adolescent conflict surrounding the tasks of separation and achievement of autonomy and identity. Thus, although the original conflict is no longer a problem for the patient or her family, she is now in a regressed and in many ways walled-off state, likely to breed increasing rejection as time passes. Moreover, any small weight gain, often unrecognizable to or concealed from the outside world, can be associated with deep shame, despair or guilt. This clinical picture, together with the often sustained restlessness, including greatly reduced sleep and especially early morning waking – a frequent feature of the disorder and entirely a product of the malnutrition – may lead some to diagnose depression as the primary pathology and to institute inappropriate treatment. It is also to be remembered that the process of recovery, induced or spontaneous, will often require anorectics to undergo a more real and healthily determined depression of rekindled adolescence, even though in the first instance they are likely to continue to construe it as only arising in relation to their renewed experience of normal adolescent weight and shape.

Some anorectics, from time to time, will also experience and display phases of elation. Such a mood usually stems from their triumph at a period of satisfactory self-control, which will arise after they have successfully coped with an episode of threatened weight gain. It is perhaps not dissimilar from the triumphant experience of the ascetic, and should be seen as specific to the central psychopathology of anorexia nervosa and not as part of a more general and primary manic depressive disorder.

Sometimes schizophrenia comes into the differential diagnosis. Anorectics are sometimes so insistent that they are healthy and that their appetite is normal, that they may be considered deluded. In one sense they do eat enough, in terms of maintaining their current metabolic and psychological needs within the context of a stable low body weight. However, they are often voraciously hungry but will deny this, although frequently this hunger eventually diminishes, expecially in the case of those who abstain from eating and whose gastrointestinal tracts atrophy. Some anorectics express puzzling and unusual ideas. One patient believed the food she ate was alive. Occasionally she would admit to an 'as if' quality about the idea. This primitively condensed notion reflected her conviction that any food she saw was as good as eaten, assimilated and converted into her own living flesh. Moreover it was a highly and primitively sexualized idea. It could be said also to reflect her 'ego boundary' problems. She was very passive in temperament. In hospital she saw herself as having surrendered her control over such food intake to others and hence her capacity to maintain food separate from her body. Previously this for her had been her only reality.

All anorectics also display other profound perceptual disorders. They report that their body widths are much wider than is the case. Massively obese people also show this, as do many adolescent females, but to a lesser extent.

Such distortions can appear particularly bizarre when seen alongside the behaviour of some chronic anorectics who become utterly preoccupied with their weight, and hence their dietetic habits, and seem to be behaving inappropriately within the larger social context important to the observer. However, there is no clinical link between anorexia nervosa and schizophrenia.

Anorectics sometimes display neurotic disturbances. Such behaviour is once again determined by their concern about their shape and their need to maintain low weight and hence regulate strictly their food intake. Thus they may display bouts of social or phobic avoidance behaviour at times when they have gained a little weight about which they are deeply ashamed, or else fear that a particular social setting might lead them to lose control of their appetites. If their identification of calorific contents of food and preparation of foods becomes surrounded by particularly protective rituals, they may become utterly preoccupied and withdrawn. Only frantic and equally obsessional commitment to school work may provide them with relief. Other anorectics, and indeed most anorectics at some time or other, may become very defiant and challenging in their manner, especially if cornered by people who expect them to eat and who may be concerned with little else. In such circumstances they will blandly deny any difficulties.

Such patterns of neurotic disorder and attitude may become a presenting dominant feature to the psychiatrist and be accepted by him as the primary disorder.

Occasionally anorectics become dependent on alcohol and other hypnotic drugs, and may present

with this feature. Those who characteristically abstain from eating rarely develop such a pattern, but it is not uncommon amongst those who binge and vomit. They develop increasingly what I can best describe as an oral craving. High alcohol intake probably meets this need as well as providing them with an intermittent refuge in sedation, and semistupor. Such behaviour may be interspersed with chain smoking, massive food consumption and of course related secretive vomiting.

Meanness and hoarding may arise from starvation. Thus anorectics may hoard in their homes such trivia as packages and stores of food. They may present for a medical opinion having been found trying to travel on public transport without paying the fare. They are prone to shoplifting, usually cosmetics, clothes or food.

*Differential Diagnosis in Relation to Other Bodily Diseases*

Anorectics come to emphasize or reveal to others, including some doctors, isolated aspects of their physical disorder. Their selection in this respect may be determined by their judgement as to how this presentation fits into their overall strategy for maintaining the *status quo*. They may see it as a suitable distraction to others, or through it they may temporarily be seeking help say by hospitalization, ostensibly to undergo investigation and treatment, but actually hoping that the institution will be effective in the short term in helping them to cope with a current, albeit unacknowledged, bulimic episode.

Some anorectics whose dietary pattern is either one of total abstinence, say for two weeks at a time interspersed with periods of ceaseless eating lasting several days, or else one of more or less persistent bingeing and vomiting, may present without gross emaciation, but very restless, possibly hot, flushed and with tachycardia, and even raised body temperature if they have just completed several days bingeing. They will not acknowledge the latter, but they will be complaining of their big appetite. Such a patient, presenting in casualty, is difficult to distinguish from someone with acute thyrotoxicosis, the normal and more characteristic metabolic picture of hypometabolism being temporarily concealed. Gross bulimia can even promote a state of stupor associated with fluid retention, which may also come to acquire secondary value for, and be psychogenically endorsed by, the beleaguered anorectic in her battle to bring the episode to an end. Meanwhile in her semistupor, pyrexial and with a temporarily abnormal EEG, she can present a major neurological puzzle. Epilepsy, actually symptomatic but also tempting the proposition of a primary brain pathology as an explanation of the total condition, may also come to afflict the anorectic, especially when hypokalæmia and hyperinsulinæmia are marked. If such a patient has also been drinking large quantities of fluid and is showing polyuria and glycosuria along with drowsiness then, temporarily, acute diabetes mellitus may be suspected. In fact and surprisingly so, diabetes is rare in the anorectic population.

Such presentations as these arise but are relatively rare. More often the individual is in a chronic, stable, anorectic state and is a reluctant patient.

Younger anorectics especially, when the weight loss is not severe, may come to be subsumed under the general descriptive diagnosis of functional secondary amenorrhœa. It is also my impression that, amongst those whose dietary intake is highly variable, more complex secondary ovarian pathology can often arise. Thus, intermittent stimulation of ovarian activity may contribute to ovarian cyst formation and attendant symptoms, which sometimes lead them to oophorectomy. Alternatively, and especially if excessive purging has produced profound electrolyte disturbance, then if hirsuties is also prominent, and with steroid metabolism always secondarily disturbed, the adrenals may become the focus of attention.

Others present with gastrointestinal symptoms. Reports of difficulty in swallowing or nausea can be rooted in the weight phobia of primary anorexia nervosa, although they also arise in the neurotically tense and anxious individual. Abdominal pain, not always easy to understand but often rooted in unassuaged hunger, bizarre ingestion (e.g. 500 ml pure lemon juice, a large raw cauliflower and two eight-ounce (225 g) bars of chocolate), or regular vomiting or purgation, can be a presenting feature, and leads to particular difficulty in diagnosis. Some anorectics, especially the young, undergo laparotomy and appendicectomy. Constipation as a common feature, especially amongst those who vomit frequently, may become their focus of complaint to the family and doctor. Conversely, chronic watery diarrhœa is the result of the commonplace massive self-purgation. The literature contains several reports of such purgative abuse, almost invariably, it would seem, amongst thin middle-aged women who are likely in fact to be masked anorectics.

Occasionally anorectics over-ingest highly selected foods. They may become seriously intoxicated by protein: they may consume so much carotene that they develop hypercarotenæmia. Again the literature contains scattered reports of such patients, some recognized as having anorexia nervosa, and others who, on the descriptions available, would seem probably to have it. Lipid metabolism can also become grossly disturbed, probably in relation to overall bizarre periodicity

of eating as well as superimposed gross periodic lipid and carbohydrate ingestion.

Reference has already been made to the profound disturbances of fluid balance which arise. Dehydration can be interspersed with waterlogging due to excessive drinking and with famine œdema in both the extremely emaciated abstainer and in the binger and vomiter, whose ingestive patterns are intermittent but conducive to fluid retention. Massive purgation, general malnourishment and the taking of large quantities of diuretics confuse the issue further. These major disturbances of fluid balance can be very puzzling if some or all aspects of the ingestive behaviour are being concealed. The underlying pathology of anorexia nervosa may comprise one extreme of the psychobiological nutritional disturbances possibly common to many cases of 'periodic œdema'.

In two anorectics I have seen severe iron deficiency anæmia develop, which is very unusual. In neither case was there any readily available evidence of bleeding, but one, at least, was thought to be removing her own blood for reasons that were understandable in terms of her psychopathology, her disgust with her body and her sexuality. Both these anæmias responded fully to our routine treatment programme involving restored normal dietary intake and normal weight, together with individual and family psychotherapy, but under strict supervision.

I have perhaps said enough to illustrate what an ubiquitous disorder anorexia nervosa is. How can we try to bring some logical system to bear on the diagnostic effort? First, it is always important to seek information from several sources, e.g. parents, friends, teachers, as well as from the 'patient'. The central feature of the disorder is the need to maintain a pathologically low body weight. In the absence of any clear information stemming from the 'patient', the need for a thorough search for circumstantial evidence of this is obviously important. Apart from outside informants, observation of the 'patient' under conditions wherein behaviour is strictly controlled, may be revealing. A 'patient' previously characterized by bulimia, who has been vomiting secretly and meanwhile cooperating blandly, will stop eating and become hostile. An abstaining 'patient' may gain a few kilograms with apparent willingness, but will then become restless and demand discharge.

Ultimately any further progress, especially at the diagnostic level, will depend on the doctor's ability to convert the individual with presumed anorexia nervosa into a proper patient, i.e. someone wanting to explore, albeit fearfully, the prospect of real change, in this case through major weight gain in the first instance. This is unlikely to be achieved unless the nettle of attempting to clarify the individual and family psychopathology is firmly grasped. Such an exercise obviously requires special skills and a lot of time.

The condition is now so common that those few special centres recognized as providing comprehensive treatment facilities can no longer cope. Meanwhile, the diagnostic and management problems that surround the condition actually reflect, in my view, the great clinical richness of the syndrome. It has a great deal to teach us about such matters as puberty, obesity, addiction, illness behaviour, psychological mechanisms such as denial and compulsion, family dynamics, and the whole gamut of functional somatic disturbances to which I have been alluding, as well as allowing us at the same time the chance to try to help the individual with this crippling disorder.

REFERENCES

**Crisp A H**
(1977) *Proceeding of the Royal Society of Medicine* **70**, 464–470

**Crisp A H, Kalucy R S, Lacey J H & Harding B**
(1977) In: Anorexia Nervosa. Ed. R A Vigersky. Raven Press, New York; pp 55–65

# Idiopathic Œdema

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Idiopathic œdema of women, also known as cyclical or periodic, is a syndrome characterized by irregular intermittent bouts of generalized swelling. Sometimes, in the early stages, fluid retention is more pronounced before the menstrual period, but later the œdema may occur at any time in the menstrual cycle, and whilst it never presents before the menarche, it may persist or even present after the menopause (Thorn 1957, 1968).

The patient experiences puffiness of the eyelids on waking in the morning. The bridge of the nose may be thickened. The face and fingers feel stiff and bloated. Often there is a sense of fullness and discomfort in the breasts and in the abdomen, which may be distended.

After getting up in the morning the fluid distribution is influenced by gravity so that by evening the discomfort in the upper part of the body has been replaced by stiffness and frank pitting œdema of the ankles and feet, with a substantial increase in leg volume. During the day the patient may notice that only a small volume of dark urine is voided. The severity of fluid retention varies from time to time in the same patient and from one patient to another. It is aggravated by a high environmental temperature (Streeten 1960) and by prolonged standing.

In some patients the condition constitutes little