Original articles

Early onset anorexia nervosa

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SUMMARY This paper describes 48 children, aged 14 years or less, who met diagnostic criteria for anorexia nervosa modified from Morgan and Russell.¹ The characteristics of the sample (13 boys and 35 girls) are described along with features of the illness, associated family characteristics, treatment in hospital, and a brief description of treatment. Difficulties in diagnosis are addressed, with reference in particular to the high incidence of depression in this group. Finally, the importance and difficulty of close paediatric/psychiatric liaison in diagnosis and treatment is emphasised.

Among children presenting with wasting conditions, an increasingly recognised proportion have neither malignancy nor other serious physical illness but do have self starvation. This is a report of 48 children, aged 14 years or less, with deliberate self starvation often beginning before the onset of any outward sign of puberty. The published works are replete with reports of various aspects and permutations of eating disorders, but the clinical features and natural history in children remain much less fully explored than in older patients. Most reports contain few children, and statements about findings are usually made with reference to older patients. These studies usually address only questions of differences and similarities between a small subpopulation of young patients and a much larger group of older patients with anorexia. The purpose of this study was to supplement our knowledge of one end of the range of anorexia nervosa—that is, childhood.

Review of published reports

There has been increasing recognition recently of the occurrence of earlier onset anorexia nervosa. Although there were occasional reports beforehand,² the first major accounts of prepubertal anorexia nervosa occurred in the 1960s.^{3–5} Comprehensive reviews have been prepared by Swift⁶ and Lask and Bryant-Waugh.⁷

Attempts have been made to isolate differences between earlier and later onset anorexia nervosa. There seems to be a consensus that clinical features of the earlier and later onset groups are essentially similar—namely, denial of emaciation, retention of appetite, power struggles between patients and parents, a high level of depression, and frequent

exercising.^{4–10} There are characteristics, however, that remain unclear. Irwin, for example, suggested that the course of anorexia nervosa was different in early onset cases, with younger children becoming more emaciated because of less initial body fat and depressive symptoms occurring earlier than in older children.⁸ Although well documented in older boys,¹¹ the incidence and features of anorexia nervosa in younger boys require clarification as few such children have been described.

In the follow up publications there has been controversy about the prognosis of early onset anorexia nervosa, with some authors suggesting that it is associated with a more favourable outcome.^{3,4} In a review of this work, focusing particularly on the methodological adequacy of the studies, Swift⁶ concluded that the long term results were similar to those found in studies of later age of onset,^{12,13} and this has been confirmed by the most recently reported series.¹⁴ Although, for example, normalisation of weight is common, residual clinical disease—for example, poor social relationships¹⁵—is often apparent at follow up. This underlines the severity of the disorder, and combined with Russell's findings that premenarcheal anorexia nervosa has serious implications for the progress of puberty,¹⁶ points to the importance of clarifying the characteristics of this disorder.

Aim

The aim of this paper was to characterise the antecedents, clinical manifestations, patterns of family organisation, and treatment in hospital of 48 children with determined food avoidance and weight loss beginning before their 15th birthday.

Methodology

A survey of the clinical records of all children seen at our hospital between 1960 and 1984 was carried out to seek cases of anorexia nervosa in children less than 15 years of age. Criteria for inclusion in the study were the criteria for diagnosis of anorexia nervosa modified from Morgan and Russell (Table 1).¹ Clinical records were analysed by personnel with psychiatric and psychologic backgrounds using coded review forms and operationalised definitions of various diagnostic and outcome categories, interventions, etc. Clinical situations or questions not covered by the definitions were resolved at conjoint project meetings. A subgroup of files were reviewed by multiple raters, and the concordance of their findings was 0.93. Recognising that most clinical records are insufficiently detailed, etc, to provide a completely satisfactory data base for research, we have attempted to quantify this deficiency in our sample. Entries in reviewed records yielded the necessary information at the rate of 90%. Accordingly, we believe this sample sufficiently large to justify our attempt to elicit information toward clarifying our understanding of this serious disorder in children. Most data are descriptive. Inferential statistical comparisons were made, however, on some sample characteristics and on one outcome measure.

Results

Demographic findings. Demographic features of the sample of 35 girls and 13 boys are shown in Table 2. Mean age at which symptoms first caused concern was 11.7 years and ranged from 7.75 to 14.33 years, while mean age at referral was 12.34 years, with a range of 8.17 to 14.83 years. Sexual development varied, with 23 being prepubertal (seven boys and 16 girls), 20 pubescent (six boys and 14 girls), and five postpubertal (all girls). Twenty one were the youngest child in their families and 13 the oldest. Six

had no siblings and there was one set of twins. Twenty two children were from families of social classes I and II and 21 from classes III and IV as defined by parental occupation according to the Registrar General's classification.¹⁷

Clinical features. The variation in clinical features is shown in Table 3. Nutritional state was assessed using weight to height ratios derived from the Tanner-Whitehouse standards¹⁸ in which less than 80% represents significant wasting. Of our sample, 40 (83%) were significantly wasted at the time of referral. The clinical features of our cases in decreasing frequency were food refusal, wasting, depression, fear of fatness, distorted body image, self induced vomiting, excessive physical exercise, obsessional behaviour, bingeing, and laxative abuse.

The major expressed reasons for food refusal were fear of fatness, abdominal pain, and feelings of fullness or nausea (Table 4). Only three children cited loss of appetite as the predominant reason for not eating. The clinical features often varied considerably during the course of the illness, leading to the diagnosis often being missed. For example, a child might present with depression or abdominal pain and only later show the more typical features of

Table 2 Demographic features of the sample

No of patients	48
Sex (M:F) (No (%))	13:35 (27:73)
Age at onset (years) (range (mean))	7.7-13.7 (11.7)
Age at presentation (years) (range (mean))	8.2-13.9 (12.3)
Social class (No (%))	
I	7 (16)
II	15 (35)
III	17 (40)
IV	4 (9)
Stage of puberty (M:F:Total (%)):	
Prepubertal	7:16:23 (48)
Pubescent	6:14:20 (42)
Postpubertal	0:5:5 (10)
Ordinal position (No (%)):	
Only	6 (13)
Eldest	13 (27)
Middle of 3+	21 (44)
Youngest	8 (17)

Table 1 Diagnostic criteria of anorexia nervosa modified from Russell¹ used for inclusion in study

- 1 Determined food avoidance
- 2 Weight loss or failure to gain weight during the period of preadolescent accelerated growth (10-14 years) in the absence of any physical or mental illness
- 3 Any two or more of the following:
 - (a) preoccupation with body weight
 - (b) preoccupation with energy intake
 - (c) distorted body image
 - (d) fear of fatness
 - (e) self induced vomiting
 - (f) extensive exercising
 - (g) purging (laxative abuse)

Table 3 Clinical manifestations of children with anorexia nervosa. Values are No (%)

Food refusal	48 (100)
Wasted	40 (83)
Clinically depressed	27 (56)
Afraid of becoming fat	27 (56)
Distorted body image	24 (50)
Self induced vomiting	19 (40)
Exercising excessively	16 (33)
Obsessions or compulsions	14 (29)
Binge eating pattern	6 (13)
Laxative abuse	4 (8)

Table 4 *Reasons given for food refusal by children with anorexia nervosa. Values are No (%)*

Fear of becoming obese	27 (56)
Feelings of nausea or fullness	6 (13)
Abdominal pain	5 (10)
Loss of appetite	3 (6)
Dysphagia	2 (4)
Weight reduction	2 (4)
Other	5 (10)

Table 5 *Features of the families of children with anorexia nervosa*

	n*	Present (No (%))
Overinvolvement	38	31 (82)
Failure to resolve conflict	35	31 (89)
Parental control inconsistent or otherwise inadequate	34	29 (85)
Communication problems	32	24 (75)
Overprotective parents	34	20 (59)
History of anorexia nervosa or other mental illness	48	20 (42)
Anomalous family structure	48	13 (27)

*n Refers to number of families for whom the information was available.

anorexia nervosa; alternatively, as the eating difficulties seemed to diminish so other symptoms would come to the fore.⁷

In each case a complete assessment of family organisation and function complemented the psychiatric and paediatric investigations of the child (Table 5). The following distortions of interactions among family members were common and considered important in perpetuating the problem.

Overinvolvement (lack of privacy for individual family members) was present in 31 of 38 cases.

In 24 of 32 families there were pervasive communication problems such as individuals often speaking for or interrupting others, individuals disqualifying or not listening to the statements of others, or the frequent issuing of mixed messages.

Parenting was considered inadequate or inconsistent in 29 of 34 families and overprotective in 20 of 34 families.

Over half the families possessed multiple adverse characteristics.

A history of anorexia nervosa existed in four first degree relatives of patients, while other forms of mental illness, specifically depression, anxiety, or alcohol abuse occurred in 21 (44%) cases.

Treatment in hospital. Many aspects of management varied during the 24 years of study. Four patients received only outpatient care. Twenty five (52%) were initially admitted to a paediatric ward and 16 (33%) remained on the paediatric unit for their

entire admission to hospital. Twenty eight (58%) were admitted or later transferred to a psychiatric unit. The duration of admission to hospital ranged from one week to over six months, with 20 (42%) being discharged by three months and 36 (75%) by six months. Artificial feeding was seldom necessary, but two patients received courses of nasogastric feedings and one required intravenous alimentation. The treatment approaches used were individual psychotherapy in 17 (34%) cases, behaviour modification with individualised rewards for weight gain in 31 (65%), and conjoint family treatment in 34 (71%). During the last few years of the study a combined treatment programme included family treatment and admission to hospital in a therapeutic environment providing daily individual counselling sessions and encouragement to eat, with or without a behaviour modification programme.

Findings at end of treatment. Full details of the treatment are published elsewhere.⁷ Most patients improved during admission to hospital (four patients never required admission). Thirty (68%) achieved all therapeutic goals, including restoration of normal mood, improved social skills, satisfactory relationships with peers and authority figures, untroubled eating patterns, and weight gain. Thirty five (80%) gained significant weight but fell short in one or more of the psychosocial areas. For the group the mean weight/height was 72.83% at admission and 86.98% at discharge. The 14.15% difference is a significant increment ($p < 0.01$). Nine patients failed to gain weight during admission to hospital; one patient gained weight only with parenteral nutrition but died during admission to hospital.

Placements after discharge from hospital varied (Table 6). Forty children were discharged to the care of their parents. Five were transferred to other hospitals, one child went into full time boarding school, and one (admitted from another hospital) went to a foster home. One child died from exsanguination after repeated oesophageal tears secondary to pernicious vomiting.

The results of a long term follow up are to be published shortly.

Table 6 *Placements after discharge from hospital in children with anorexia nervosa. Values are No (%)*

Parental home	38 (79)
Adoptive home	2 (4)
Foster home	1 (2)
Other hospitals	5 (10)
Full time boarding school	1 (2)
Deceased	1 (2)

Discussion

A number of important points emerge from this study, which we believe to contain the largest reported series of early onset anorexia nervosa. The proportion of boys is significantly higher (27.1 v 10.2%, $p < 0.05$) than a compilation of comparable series reported by Swift⁶ but concordant with a high incidence in two recent series.^{14 19} Certainly, however, the proportion is far higher than in adult anorexia nervosa (6.4%) ($p < 0.01$).²⁰ The clinical features, however, are the same in both boys and girls. Youngest children (who formed 44% of the study population) are significantly different ($p < 0.001$) from census figures (15%) but similar to two other series (40% and 44%).^{5 6} Finally, the sample is biased towards social classes I and II (46% of the study population) compared with the general population (17%) ($p < 0.001$).

Perhaps these findings can be most easily integrated into the conceptualisation of anorexia nervosa as a distorted or overly focused struggle for self control and autonomy. Struggles require adversaries and in our opinion the propensity of parents to be positioned to adopt this role varies with the age, sex, and ordinal position of pregnancy. In our culture parents are more likely to be intrusively involved with and/or overly controlling of girls and youngest children than offspring in complementary categories. In some of these families parents will not withdraw in response to the child's emancipatory stirrings. Given this situation, some children will attempt to resolve the ensuing conflict by focusing the controversy on food and control of intake. This is an effective option only if the reduction in food consumption is consistently at their discretion—that is, not subject to availability or threatened by the family's financial resources.

Our findings indicate the importance of anorexia nervosa from the paediatrician's viewpoint. Eighty three per cent starved to the point of wasting, and all children required careful monitoring of their energy intake and electrolyte balance. Many of the children were thought initially to have some other serious medical condition, such as malignancy or Crohn's disease.

Fifty two per cent of our sample spent at least some time on a paediatric ward, although the national figure is likely to be higher given the shortage of psychiatric facilities. Elsewhere we discuss the problems of treating these children.⁷ The conflicts within the treatment team are usually between paediatric and psychiatric personnel and also medical and nursing staff. Children with anorexia seem to be particularly adept at creating conflict, not from planned behaviour or malice, but

as a habitual way of relating, generalised from intrafamily interaction. The divisiveness is so regularly problematic that routine discussions among team members²¹ should be held to identify and resolve the problem.

The presence of depressive symptoms in 56% of our cases is similar to findings in other studies and presents a confounding ingredient to the diagnostician. Certainly, primary depression can present with reduced food intake and weight loss. The other features of the illnesses are usually sufficiently different to allow differentiation in each case (Table 7), but sometimes this can only be accomplished after a period of observation in hospital. Chronic physical conditions may also present diagnostic differences, especially when laboratory confirmation is elusive and a reactive depression is present.

Therapeutically, the most important recent advance has been the addition of family treatment to treatment regimens. The type and frequency of distorted patterns of family interactions have been well documented.^{22 23} For this reason hospital induced improvement cannot be expected to persist when the children are returned to a family environment of unresolved conflicts, inadequate boundaries between individuals and generations, and communication problems. These family features perpetuate the symptoms and are the reason for the central position of treatment for the entire family. (Russell GFM, Eisler I, Szmuckler G, Dare C. A controlled study comparing family and individual therapy in the treatment of anorexia nervosa. Presented at the Royal College of Psychiatrists, 1985.)

Conclusions

This group of mostly preadolescent children with growth failure and determined food avoidance represents early onset anorexia nervosa. In this series of cases the diagnosis and referral for psychiatric treatment were often delayed, while physical conditions were repeatedly excluded. The

Table 7 Differentiation of anorexia nervosa from depression according to certain features

	Anorexia nervosa	Depression
Determined food avoidance	Always	Rarely
Appetite	Normal	Decreased
Activity level	Increased/normal	Decreased
Weight loss	Always	Usually
Patients affirm thinness	Sometimes	Always
Wish to gain weight	Rarely	Usually
Vomiting	Common	Rarely
Bingeing	Occasionally	Never

cluster of weight loss and determined food refusal should trigger an exploration for other symptoms of anorexia nervosa—that is, fear of fatness, preoccupation with body weight, or calories, distorted body image, vomiting, laxative abuse, overly intrusive and controlling parent, other types of faulty parenting, and unresolved conflict within the family. The presence of any one of the first five features and one other feature would suggest the expedience of a simultaneous psychiatric and medical evaluation.

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