DELIBERATE DISABILITY

BY

J. R. HAWKINGS, M.B., D.P.M.

K. S. JONES, M.B., D.P.M.

M. SIM, M.D., D.P.M. AND R. W. TIBBETTS, B.M., D.P.M.

Department of Psychological Medicine, United Birmingham Hospitals

Little medical interest appears to have been focused on self-inflicted injury in times of peace, except in the case of the Munchausen syndrome (Asher, 1951), where psychopathic personality and antisocial behaviour are the main features. Malingering, which is much commoner in wartime, applies by definition (Shorter Oxford Dictionary) to Service personnel, and the literature is mainly confined to the years of the two world wars. Much of it is concerned with methods employed (Buinewitsch, 1939; Clark and Campbell, 1948; Kerr, 1945), while others (Flicker, 1942; Good, 1942; Fidler, 1948) attempt to describe the personalities of the subjects and discuss their psychopathology, in addition to quoting instances.

We have become interested in a group of patients whose deceptions in the medical sphere contrast with their conscientious attitude in other respects and whose disability, unlike that of most malingerers and many hysterics, is not directed to immediate material gain or advantage. We were also struck by their close resemblance to patients suffering from anorexia nervosa, and felt that further study might cast indirect light upon the difficult problem of the wilful rejection of food.

We would point out that in the cases referred to us there had already been considerable preselection, in that the more common varieties of deliberate disability, seen in the casualty department, such as Munchausen syndrome or malingering, were usually dealt with in other ways. In retrospect it occurred to us that there was some homogeneity about the basic pattern of those patients who were referred. We recall having investigated during three years (1952-5) 19 patients from other departments of the United Birmingham Hospitals on account of deliberate injury or illness. In every case a comprehensive psychiatric history was available and all the patients were well known to at least one of us. In most the simulation was skilled enough to warrant careful observation and investigation in hospital, and in many instances severe disfigurement, pain, or even a threat to life had been present. Formal psychological testing of intelligence and personality had not been undertaken except occasionally, but it is doubtful if this would have been of any value, especially in the latter field. Benton (1945) has shown that on the Rorschach test such patients are very unreliable, and he has even used this lack of co-operation as a diagnostic feature, claiming that it was more helpful than any particular response to the projection technique. Three typical examples are described below and data concerning the remainder are summarized in Table I, which illustrates the general conformity of the syndrome despite its very varied clinical presentation.

Case 1

This patient was the eldest of six children. There was no significant family history and her birth, infancy, and childhood were normal. She was 13 when her mother died in childbirth, and her father, a punctilious and fussy man, continued to care for the family unaided, much responsibility falling upon the patient, who was called upon to fill the maternal role. At 16, after a commercial course, she obtained clerical employment in a hospital clinic, where she developed the ambition to become a nurse and obtained a vacancy to train. This was opposed by her father, who believed that she would be exposed to tuberculosis. Soon afterwards she had repeated epistaxes, followed by pyrexia, for which no satisfactory cause was discovered during six weeks' hospital investigation elsewhere. Her epistaxes continued and she was admitted to the Queen Elizabeth Hospital, when she was 18, for a submucous resection and post-operatively developed a penicillin-resistant pyrexia.

Exhaustive clinical, radiological, and pathological investigations were uniformly negative. She complained of diffuse muscle and joint pains; she sweated profusely and her temperature fluctuated between normality and 104° F. (40° C.) over several months. However, as her general health did not deteriorate, the possibility of a simulated pyrexia was considered, and she came under psychiatric observation. While intellectually above average, there was affective shallowness, superficiality, and lability, contrasting sharply with undoubted obsessional traits. No satisfactory rapport was established despite ample opportunity, including narcoanalysis, and she neither discussed her problems nor acknowledged deceit.

After five months as an in-patient the problem remained unsolved and she was discharged. Three weeks later she was readmitted with a haemorrhagic anaemia and numerous septic spots following repeated severe epistaxes. She was now found to be in possession of a thermometer reading 105° F. (40.6° C.) and thereupon confessed that she had been falsifying her temperature by substituting a previously prepared thermometer for the one used by the nursing staff. Her epistaxes resulted from direct trauma to her nose and her septic spots were produced by pricks with a dirty needle.

Her motivation appeared to be complex, hospital being seen as an environment providing channels for those drives which at home were complicated by, and frequently in conflict with, the emotional demands of her relationship with her father. She improved for a time, but has since been readmitted with pyrexia and anaemia.

Case 2

One of two children, this patient had no family history of psychiatric disorder and her early childhood was free from neurotic traits. She was eight when her mother died, and two years later her father remarried. After an initial period of adjustment she settled down well to her new family relationships. At school her performance was average and she subsequently gained employment as a comptometer

operator. She is by nature a contented, conscientious girl, and while somewhat reserved is socially adequate. Her ambitions to become a nurse were thwarted on account of deafness due to otosclerosis, but she has accepted this and had been very active in St. John Ambulance Brigade work until recently.

In December, 1953, at the age of 16½, she developed ptosis, first on the left side and then on the right. This and a subsequent similar episode remitted, but in May, 1954, she complained of headache, diplopia, and giddiness. The cerebrospinal fluid was normal, but on the day following lumbar puncture she developed a convergent squint. Alternating occlusion of vision was employed without success and she was then readmitted to hospital. No other neurological abnormality could be detected, and she was transferred to the psychiatric unit in October, 1954. At this time there was a spasm of the left orbicularis oculi, both eyes converging into a gross squint when this was overcome. Some scratch marks on her face were evident, and abrasions of this area would appear overnight. Shortly after admission a temperature of 101.4° F. (38.6° C.) was shown to have been falsified.

Efforts, aided by narcoanalysis, to establish a psychotherapeutic relationship have not as yet proved wholly successful, and she continues, at the time of this report, to show a fluctuating degree of blepharospasm and squint, depending on her awareness of observation. It has not, with certainty, been demonstrated that the ocular symptoms are in an immediate sense volitional, but the spurious pyrexia and undoubtedly self-induced recent skin lesions are strongly suggestive that they may be.

Case 3

This patient is the second of three children. Her father is a tense, suspicious individual who tends to drink to excess, but her mother is an equable person forming easy relationships. As a child she was sensitive, apprehensive of those in authority, and unduly disturbed by minor injury. After initial mediocrity she was successful at school, becoming

head girl, and on leaving she entered the Post Office, where in spite of intermittent ill-health she has reached the rank of supervisor. She has had one unsatisfactory courtship, which terminated after four years. She was a voluntary Red Cross worker for 18 months, but ceased to do this work four years ago.

At the age of 8 years she began to have attacks which were thought to be epileptic. At 17 she was referred to hospital on the first of several occasions because of amenorrhoea for which no cause was discovered, and later on account of diarrhoea, which was concluded to be of functional origin. Psychiatric opinion was first obtained in 1951, at the age of 22, when she was admitted to hospital in a stuporous condition due to barbiturate poisoning. She was then regarded as immature, with a tendency to hysterical reaction, this particular episode being precipitated by the anticipated posting abroad of her boy friend. Two weeks later she was readmitted, distressed but uncommunicative, following four days of impaired consciousness, but discharged herself against advice.

In August, 1952, she attended the cardiological out-patient department complaining of dyspnoea, swelling of the ankles, and loss of weight. Examination disclosed a pulse rate of 150, B.P. 180/70, distended pulsating neck veins, and a hot moist skin. The thyroid gland was of normal size, but the B.M.R. was +60% and the diagnosis of thyrotoxic heart failure was made. Thiouracil was prescribed, but she failed to improve, and in November, 1952, she was admitted to hospital. The B.M.R. was now +105%, but, while the protein-bound iodine in the serum was well in the thyrotoxic range, the radio-iodine uptake estimation significantly gave only a low normal value. She had formerly denied taking thyroid, but admitted so doing after the discovery of a large number of thyroid tablets in her locker. Since this episode she has been much improved, her employment has been stable, and she became an active member of the out-patients' social club from its start. She is recognized as an immature person demanding affection and recognition, but is nevertheless capable of very effective adjustment in suitable circumstances.

TABLE I

No. Sex	Previous Duration of Symptoms	Deliberately Simulated, Self-inflicted, or Aggravated Manifestations	Intelligence	Psychological Background	Previous Measures	Therapeutic Approach	Intervention Admitted	Progress
1 F	2 years	Simulated pyrexia. Dermatitis artefacta. Self-induced haemorrhage	Above average	Immature. Assumed maternal responsibility on mother's death. Thwarted nursing ambitions	General medical measures	Intensive exploratory psychotherapy, including narcoanalysis	Yes	Entirely well and at work for two years. Then recurrence
2 F	10 months	Presumptive simulation of blepharospasm and squint. Dermatitis artefacta. Feigned pyrexia. Overt anorexia yet no weight loss	Average	Normal adolescent personality. No precipitating factors known as yet though thwarting of nursing ambitions on account of otosclerosis may be significant. Good work record	Local ophthalmic treatment	Psychotherapy, including narcoanalysis	No	At follow-up after discharge blepharospasm persisted but otherwise was well
3 F	Already in contact with psych. dept. at the time	Self-administration of thyroid extract to extent of inducing congestive heart failure	Above average	Immature personality demanding affection but with excellent employment record. Ambivalent relationship with father	Investigation	P.S.W. support together with membership of social club	Yes	Satisfactory
4 F	2 months	Skeletal injury and dermatitis artefacta	..	Emotional immaturity despite efficiency. Disturbed parent relationships	Surgical and local applications	Psychotherapy including repeated narcoanalyses	No	Remission followed by new complications. Work satisfactory
5 F	2 years	"Hysterical" anaesthesia. Pathological lying. Necrosis of finger-nails of right hand. Lymphangitis accurately simulated by use of lipstick	..	Insecure and immature personality. Disharmony in parental relationships. Adequate employment record	Local applications	Psychotherapy including narcoanalysis	Yes	After 18 months is satisfactorily adjusted. Now married
6 F	5 ..	Facial distortion with grimacing. At first considered organic and treated surgically. Subsequent interference with operation scars	..	Emotionally shallow. histrionic personality, but psychopathology not clearly elucidated	Plastic surgery	One diagnostic interview	No	Immediate remission after intensely resented interview. Has had no recurrence
7 F	6 months	Self-inflicted nitric acid burns on the arm, perpetuated for many months	Average	Superficially phlegmatic personality, but underlying insecurity consequent upon her childhood status. Good work record	Local applications. Plastic surgery withheld until psychiatric aspect clarified	Psychotherapy, including narcoanalysis	Yes	Continues well at work

TABLE I—continued

No. Sex	Previous Duration of Symptoms	Deliberately Simulated, Self-inflicted, or Aggravated Manifestations	Intelligence	Psychological Background	Previous Measures	Therapeutic Approach	Intervention Admitted	Progress
8 F	4 years	Stiffness, cyanosis, and numbness in arms with disappearance of radial pulses which accompanied alleged attacks of migraine and produced by tying of band round upper arms	Above average	Rigid, unyielding personality. Very strong paternal attachment; symptoms followed father's death. Mother alcoholic. Strong desire to impress with her "martyrdom." Successful work record	General medical measures. Ergotamine, etc.	Psychotherapy energetically resisted	No	Is still a problem, but symptomatology has changed. Has remained at work throughout. Refuses to maintain psychiatric contact
9 F	6 "	Simulated pyrexia. Dilatation of pupils with atropine to simulate neurological disorder	"	Prominent obsessional traits. Psychogenesis not fully established, but evident sexual maladjustment. Successful work record	Alcohol injections and nerve resection for accompanying alleged trigeminal neuralgia	Psychotherapy including narcoanalysis	Yes	Condition satisfactory; free from symptoms three years after first visit
10 F	4 "	Severe extensive lupus verrucosus cutis, for which patient had refused treatment for four years. Speedy remission of lupus followed by development of anorexia	"	Affectively shallow and immature personality. Disturbed parent-child relationships, with marked hostility to father	Local applications only	Patient resolutely rejected all attempts at psychotherapy	No	Skin responded promptly to streptomycin and isoniazid. Patient has recently sought amputation of leg, but this has not been undertaken
11 M	1 month	Recurrent diarrhoea since 1943, possibly originating with attack of amoebic dysentery. Present episode due to self-administration of phenolphthalein	Average	Psychopathic personality. Marital difficulties and question of Service pension involved, probably as precipitating factors. Erratic work record	Investigation	Supervisory	No	Unknown. Refused follow-up
12 F	10 months	Dyspepsia. Left flank pain, diarrhoea. Simulated pyrexia. Probably deceptive accounts of bowel activity	Above average	Immature and anxious to impress. Psychopathology not convincingly elicited owing to insincere co-operation. Good work record	Repeated investigation. Negative findings	Psychotherapy and abreaction	No	Unsatisfactory. Readmission required
13 F	4 "	Pain and swelling of right forearm. Originally followed minor injury, but perpetuated by tying band round arm	Average	Immature histrionic personality. German national desiring repatriation	Immobilization. Plaster. Penicillin	Patient broke off attendance	No	Unknown
14 F	8 "	Two years after sympathectomy for Raynaud's disease produced swelling of left hand (left-handed) by tight bandage round wrist	"	Effective but immature personality	Immobilization. Sling	Supportive psychotherapy given	Yes	Satisfactory
15 F	16 years	Chronic otitis externa artefacta, with history of genuine otitis media. Multiple symptoms of suspicious aetiology	Above average	Effective, determined, but immature personality. Onset followed death of father and brother	1939, craniotomy for suspected cerebral abscess—no abnormality. 1940, bilateral radical mastoidectomy. 1941, neurological investigation for paraesthesiae—negative. 1943, hysterical aphonia responded to faradism	Lesion disappeared rapidly. Patient resented psychiatric approach and took discharge	No	Refused follow-up. Unknown
16 F	3 "	Blackouts from 17 years. Aggravation of swelling of arm following sympathectomy	Average	Parents separated. Strongly attached to father but lives with mother. Regarded as conscientious and long-suffering	1952, lumbar sympathectomy for vasospastic condition of legs. 1953, cervical sympathectomy. 1954, repeat cervical sympathectomy	Physiotherapy	No	Returned to work, but follow-up only three months
17 M	4 "	Simulated pyrexia. Haemoptysis and melaena almost certainly simulated. Probably feigned neurological disorder and psychosis in the past	Above average	Effective worker holding responsible post. Effeminate	Exhaustive physical investigation. E.C.T. and insulin coma therapy	Agreed to further psychiatric contact with reluctance	No	Too early to assess
18 F	2 "	Chronic paronychia produced by repeated interference. Simulated pyrexia	Average	Immature. Normally cheerful but recently depressed following mother's death. Good employment record	Local applications. Surgical removal of nails	E.C.T.	Yes	Initial recovery, but has since attended another hospital for vaginal discharge
19 M	4 "	Swallowing foreign bodies. Probable insertion of a needle and a steel bristle into his limbs. Suicidal gestures	Dull	Psychopathic personality. Disturbed relationship with father. Poor work record	Two periods in mental hospital. E.C.T.	As in-patient in social rehab. unit. Subsequently P.S.W. supervision and attempt at resettlement	"	Still attends P.S.W. Increased stability but continues unemployed

Age on referral to Psychiatrist:
 Age 15–20—3 patients
 " 20–25—10 "
 " 25–30—2 "
 " 30–35—3 "
 " 35–40—1 patient

Significant Occupational Connexions:
 Nursing profession 10*
 Voluntary nursing 3
 Other hospital employment 1
 Married to nurse 1
 No significant connexion 4

* Including 3 sisters and 1 staff-nurse. These details have been excluded from the main table in order to obscure identity.

Comment

Of the series of 19 cases (Table I), selected solely by the criterion of wilful self-injury or simulated disease, all with three exceptions were female and all but one unmarried. The ages at onset lay between 17 and 32.

Only one patient was below average intelligence, and, whilst emotional immaturity was almost universal, all but five were dynamic and effective. Of these five, two were males whose cases stand out as separate from the rest and who showed the features commonly found in psychopathic personalities. The others could certainly not be so described, except purely on the basis of their presenting symptom. Obsessional traits were frequently present. The systemic distribution of symptoms was diverse—simulated pyrexia, swelling of an arm from constricting bands, and dermatitic lesions being most common, with neurological abnormalities also prominent.

It seemed to us significant that a high proportion of cases had some medical association: 10 were nurses, three participated in voluntary spare-time nursing work, and one had other types of hospital employment. The non-psychopathic male was married to a nurse.

Whilst it could not be claimed that any adequate psychopathology had been elicited in several cases, it would appear that disturbance in parent-child or sib relationships was more important than immediate secondary gain.

Follow-up has been possible in all but three cases, but is too short in two others for valid conclusions.

Six cases appear to be progressing satisfactorily, whilst eight remain disabled to a greater or less degree. It is worth noting that, of the six who are now well, five eventually admitted their acts, the one exception immediately remitting following a diagnostic interview which was interpreted as discovery and bitterly resented.

The features common to the group are female predominance, similar age range, single status, immature but not inadequate personality, good average intelligence, and background of unsatisfactory childhood relationships but of little or no immediate secondary gain. These impressed us as being strikingly similar to many cases of anorexia nervosa, in which deliberate acts, such as self-induced vomit-

ing, deceit, concealment, and disposal of food, are often present.

To illustrate this similarity we have prepared a comparable table of those cases of anorexia nervosa, seen during the same period, where deliberate deception formed an important factor (Table II). Two of the cases are described in greater detail below.

Comparable Cases of Anorexia Nervosa

Case A

This patient was the fifth of six children, with no significant family history. Her father is fussy and meticulous, and her mother overanxious, prudish, reticent, and overprotective. Her birth, infancy, and childhood were normal and she seemed a quiet, orderly, thrifty, and fastidious child, with homely interests. At the age of 13 dysmenorrhoea and dizziness accompanied the onset of menstruation (for which she had been unprepared). Anorexia developed a year later, after an incident in which her father checked on the bowel function of the children and discovered that she had been constipated for five days. Prompt purgation was instituted, which resulted in abdominal pain, revulsion against food, and persistent constipation. Purgatives were freely administered, but without benefit. After four months menses ceased and her weight had fallen by a stone (6.4 kg.). Admission to hospital resulted in some improvement, but on discharge matters became even more acute and her weight fell to 4 st. 10 lb. (29.9 kg.) (Fig. 1). She was then, at the age of 15, referred to this unit, where a diagnosis of anorexia nervosa was made. Investigations gave uniformly normal results with the exception of the B.M.R., which was 47% below the mean normal value. She was reticent and aloof, and the only notable features were those of obsessional traits displayed in her perfectionism and neatness. Special feeding measures resulted in transient improvement, strict supervision being necessary to prevent concealment and disposal of food.

Discharge was followed by intensive out-patient support and removal from home to suitable residential employment, as the background psychopathology was clearly related to problems in handling intra-familial tensions. One year later her weight had returned to normal, but there followed a

TABLE II

Case	Sex	Duration of Symptoms	Evidence of Conscious Aggravation of Symptoms	Intelligence	Psychological Background	Previous Measures	Therapeutic Approach	Progress
A	F	1 year	Self-induced vomiting. Concealment and disposal of food	Average	Emotional immaturity with mild obsessionalism and fastidiousness. Disturbed parent-child relationship and strong sibling rivalry	General medical measures	Prolonged supportive psychotherapy and social manipulation, primarily by P.S.W.	Well for a year, then became obese and had to be dieted. Well adjusted later
B	F	15 months	Deceit over diet and disposal of food. Self-induced vomiting	"	Marked immaturity. Background of parental disharmony and strong sibling rivalry. Identification with mother; strong hostility to father	" "	Supportive psychotherapy and social rehabilitation chiefly through P.S.W.	Improvement with a shift of symptoms, leading first to an increase of behaviour problems before eventual satisfactory adjustment
C	F	18 "	Severe anorexia and emaciation. Very deceitful with regard to diet	"	Immature personality with a background of parental insecurity. Medical reinforcement of invalidism prior to current illness. Anxiety over scholastic stresses	Modified insulin. Psychotherapy	Largely confined to management. Psychotherapeutic approach unsuccessful	Relapsed after initial satisfactory improvement
D	F	6 years	Hysterical back pain. Anorexia to which there was considerable conscious contribution	Average or above	Immature but capable of fairly effective adjustment. Paternal domination and sexual difficulties	Laminectomy. E.C.T. Endocrine therapy	Modified insulin. E.C.T. Psychotherapy	Tends to relapse
E	F	1 year	Abdominal pain. Overt anorexia with secret eating	Superior	Previously effective but poorly integrated. Disturbed maternal relationship and past parental disharmony	Appendicectomy	Psychotherapy. Environmental manipulation	Satisfactory

Age on First Referral to Psychiatrist:

Age 10—1 patient
" 14—1 "
" 17—2 patients
" 34—1 patient

Significant Occupational Connexions:

1 belongs to medical family.
4 no special significance.

FIG. 1.—Case A. Anorexia nervosa. Photograph taken on August 2, 1952. FIG. 2.—Case A. Photograph taken on February 19, 1954.

further difficult period in which she overate and became obese at 11 st. 3 lb. (71.2 kg.) (Fig. 2). Continued out-patient support was given by a psychiatric social worker, and four years from the onset of her anorexia she was of normal weight, was more stable, and was in steady employment.

Case C

An impression of maternal instability was gained in this case, but otherwise there is no known history of psychiatric disorder in the family. Apart from temporary digestive troubles during weaning, her infancy was uneventful and she was a bright and active child. She was regarded as socially adequate, but showed marked apprehension with regard to scholastic matters, in which her field of achievement had been limited.

Eighteen months prior to admission she had been confined to bed at home with the erroneous diagnosis of heart disease. She subsequently lost her appetite and was admitted to hospital elsewhere in June, 1953, with established anorexia, weight loss, and amenorrhoea. She was there reported to have concealed food and to have threatened to vomit to gain her own ends. After showing some evidence of improvement her condition declined, and in February, 1954, when she was 17, she was referred to this unit.

On admission she was profoundly emaciated and showed a classical disregard for this fact, emphasizing instead symptoms referable to the musculo-skeletal system. She appeared strikingly immature but of average intelligence, though uncooperative in formal intelligence testing. Initially she was hostile and completely untrustworthy, disposing of food in the lavatory and elsewhere, but with patient and strict supervision of her diet her weight ultimately increased by 3 stone (19 kg.). Her progress was interrupted by profound anaemia, for which no adequate cause was ever found; the possibility of self-induction was considered during investigation but unproved.

While she was an in-patient a deliberate attempt to establish a psychotherapeutic relationship was made, but was unsuccessful; however, a marked change in her affective

state occurred and she became cheerful and superficially friendly. A full understanding of the dynamics of the situation was not gained, but as relevant in this context may be noted a background of parental anxiety and indulgence, the stressful nature of scholastic activities, the medical reinforcement of invalidism preceding her anorexia, and perhaps the occurrence of critical comments by others concerning her plumpness. Four and a half months after discharge she had relapsed quite severely, no very effective steps having been taken by her family in the interim to secure further medical attention.

Diagnosis

The skill with which some of these patients can simulate illness makes the exclusion of organic disease at times very difficult, and it was usually only after exhaustive investigations that a final conclusion could be reached. The difficulties of diagnosis are increased by the doctor's natural inclination to regard all his patients as above suspicion, and it is only when he is faced with conflicting data or an unusual attitude to the illness on the part of the patient that he realizes that all is not what it seems. Deliberately self-inflicted lesions can occur in a variety of psychiatric conditions, as, for example, in the incomplete suicidal attempt or suicidal equivalent of depressive psychosis, or the occasional self-mutilation which occurs in schizophrenia.

Compensation neurotics, especially if psychopathic, may subjectively exaggerate a basic injury. Unstable mental defectives, too, may present with self-inflicted injuries, usually naive in pattern and with an obvious motivation more reminiscent of the Service malingerer. The simulation of psychotic states, as in the Ganser syndrome, is usually a feature of disciplined societies such as prison or the Services. There were no cases of compensation neurosis in our series, but direct gain was present in two cases (Nos. 11 and 13).

Differentiation from the psychopathic personality on the one hand and the conversion hysteric on the other requires closer consideration. In the former group it is well recognized that self-mutilation, even to the extent of attempting self-destruction, is not uncommon (Stengel, 1952; Batchelor, 1954). It could be argued that all our patients were psychopathic, but in the more restricted sense this was not so. Inability to profit from past experience or to plan for the future, explosive reactions, short-circuit decisions, and indifference to the needs of others are regarded as typical of the psychopathic group, yet they were absent in all but two of our patients. It is worthy of note that these exceptions were two of our three male patients. We therefore regard the distinction as a real one. Many might also challenge the usefulness of distinguishing this group of patients from conversion hysteria, where motivation occurs at an unconscious level. Certainly the two merge indefinitely, and in the case of subjective symptoms, such as headache, it must be a matter of inference rather than of proof whether the patient's suffering is hysterical or simulated. This may extend to objective findings, as illustrated by Case 3. If the sole manifestation had been the convergent squint and ptosis she would almost certainly have been labelled as hysterical. The subsequent developments of dermatitis artefacta and simulated pyrexia made it probable that the original signs were also consciously determined.

A diagnosis of hysteria implies dissociation of a kind which limits the patient's awareness of the mechanism of symptom development. It would seem, therefore, to constitute loose thinking if without further qualification deliberate self-injury were to be regarded as a hysterical manifestation. In both hysteria and deliberately simulated disability the basic motivating conflicts may be repressed or be consciously recognized by the patient, but in the latter it seems clear that repression is prevented from being effective over the critical issue of symptom production, often the maximally repressed aspect of conversion hysteria. There are also less-theoretical reasons for making some differentiation between the two, and these are listed in Table III. This table also includes a comparison with anorexia nervosa.

TABLE III

	Hysteria (a)	Anorexia Nervosa (b)	Deliberate Disability (c)
Age	Wide distribution	Majority between 16 and 20. (Kay and Leigh (1954) —onset in 70% before age of 26)	Majority between 15 and 25
Sex	Mainly female but not to same extent as (b) and (c)	Mainly female. (Kay and Leigh —34 women, 4 men)	Mainly female
Status	Common in both married and single	Much commoner in single women (Kay and Leigh —32 single, 6 married)	Much commoner in single women
Personality	Often inadequate and with a ready tendency to dissociation	More effective than (a). Obsessional traits are common	More effective than (a)
Intelligence	Broad distribution, but frequently found in the dull	Usually average or above	Usually average or above
Psychopathology	Symptoms commonly directed to immediate gain	Not usually directed to immediate gain	Not usually directed to immediate gain
Suggestibility	Common though often ill-sustained	Rare	Rare
Degree of morbidity	Physical suffering or threat to life may be present, but is not common	Gross disfigurement or even threat to life is common	Gross disfigurement or even threat to life is common

Psychopathology

As deeper forms of psychotherapy were not undertaken with any of these patients, little basis exists for postulating a detailed psychopathology. One could speculate within the framework of psycho-analytical theory, and the possibility of an overdetermined masochism is worthy of closer study, but such speculation is not the purpose of this paper. It might be supposed that the personalities of people who were prepared to go to the extreme of disfiguring themselves and deceiving their families and doctors would be generally ineffectual and antisocial. It was quite a surprise, therefore, when the reverse was found to be the case. We are dealing with a group whose premorbid effectiveness contrasted favourably with what would be found in a comparable group of hysterics. The theoretical possibility occurred to us that we were dealing with patients who, unlike hysterics, were capable of only limited repression and dissociation. It may be that when, in these people, a certain threshold of mental conflict is exceeded, they are driven to a consciously determined symptomatic solution, whether the original motivating situation is consciously appreciated or not. It is possible that such a mechanism is less rare than contemporary schools of psychopathology suggest, and that some "hysterics" with subjective symptoms which do not yield to what would be regarded as adequate treatment fall within this category.

The high proportion of patients with some sort of medical and nursing association is of interest. Barham Carter (1955) has noted that all his cases of simulated pyrexia occurred in nurses, so that the phenomenon is clearly not a local one. Superficial explanations go only part of the way to explain it. It could be supposed that nurses receive preferential treatment and are more likely to be admitted to hospital for fuller investigation, though we would point out that nurses are certainly not disproportionately represented amongst the total groups of patients passing through our unit, and that none of the patients in our series were members of the staff of the United Birmingham Hospitals. It is certainly true that many possessed sufficient technical knowledge to simulate disease effectively, a fact which no doubt decisively influenced the clinical picture. Nevertheless, it seems to us unlikely that these explanations go far enough, though anything further must be speculative. It is possible that the comparatively disciplined regime of a nursing community is relevant. Probably too, in some instances, the adoption of a paramedical career or hobby was an expression of a psychological need which was at the same time contributory to the maladjustment.

Treatment

There is a natural impulse, on establishing the self-inflicted nature of a disability, triumphantly to confront the patient with the discovery. It may sometimes be the best course, for example, in the psychopathic personality, but is not in general to be recommended, as it usually leads to the hasty departure of the patient, who remains at least as disturbed as on admission. In this connexion it has been most gratifying to note the tolerant attitudes adopted by our medical and surgical colleagues to this group of patients. Referral to a psychiatrist has usually implied some awareness of the nature of the problem and sometimes resulted in the patient becoming withdrawn, frankly hostile, or resentful, and not infrequently in taking her discharge. There may be protests and tears, and the hostility may not always be directed chiefly against the psychiatrist, but may be against the medical and nursing staff who have "failed" her. With patience this resistance may eventually be overcome, and when a firm relationship has been established the nature of preceding events may be referred to with varying degrees of obtuseness and find tacit acceptance.

Narcoanalysis with intravenous barbiturate in a hysterical problem would be an early and orthodox approach, but in these patients its popular designation of the "truth drug" invests it with an unwholesome aura, and its use should be delayed until a stable relationship exists. Even then its purpose must clearly be the patient's personal analysis and not forensic inquiry. Subsequent psychotherapy will depend on the personality and circumstances of the patient as well as on the indoctrinations of the therapists. It would, however, seem clear from our results that it is most necessary at some stage for the patient to declare herself. We have found the help of a psychiatric social worker in dealing with the family tensions and in giving support to the patient at a social level indispensable. This latter measure is the one we have most consistently used, and it is generally the most effective. Our out-patient social club has also proved helpful in reintegrating the "discovered" patient, who may go through a phase of shame and regard himself as a social outcast; one in fact became its secretary and has since graduated to normal society. Carbon dioxide inhalation therapy (Meduna, 1950) has been used as a "face-saver" when a somatic symptom has persisted, but it was never regarded as a substitute for proper rehabilitation. A modified insulin regime may be a useful ancillary measure where anxiety, anorexia, and loss of weight are prominent.

Prognosis

The short follow-up does not justify any detailed conclusions. The age incidence would indicate that the condition is a self-righting one, for there are no cases which have persisted beyond the fourth decade. If our comparison with some types of anorexia nervosa is a valid one it might be anticipated that the outlook would be similar in the two groups.

Unfortunately the literature on the prognosis of anorexia nervosa is conflicting. On the one hand, Venables (1930) and Ross (1936) would seem to indicate that the outlook is usually good, whilst McCullagh and Tupper (1940) and Nemiah (1950) both report series in which there were deaths, as well as a considerable proportion of poor results. The largest and most recent series is that of Kay (1953), whose follow-up of Maudsley Hospital cases tends to support the gloomier view. Some of the apparent lack of agreement may be a result of the rather different cross-section of cases coming to different types of unit. In a recent independent postal follow-up of 23 cases treated in the medical wards of the Queen Elizabeth and General Hospitals, Birmingham, between 1939 and 1948 (the triad of anorexia, amenorrhoea, and loss of weight being necessary to qualify for diagnostic acceptance), 15 patients replied, and all reported themselves as well, though none was interviewed.

In both the groups reported in this paper (Tables I and II) we are encouraged to believe that the majority, especially

when the simulation or self-injury is frankly acknowledged and discussed, will do well and become useful and effective rather than neurotic and dependent members of society. A few seem prepared to take matters to extremes, and one of us has experienced elsewhere a case of this type, not included in our series, which terminated fatally. However, we feel in no doubt that the great majority of these patients fully justify every effort made on their behalf despite the deliberately produced nature of their lesions.

Summary

Reference is made to 19 patients referred from other departments of the United Birmingham Hospitals for psychiatric assessment on account of deliberate illness or injury.

Relevant factors in these cases are tabulated, and five, including two of anorexia nervosa, are described at greater length.

Consideration is given to the nosological status of such patients, with particular reference to the diagnosis of anorexia nervosa and of hysteria.

The diagnosis and prognosis are described and suggestions made for treatment.

We are indebted to our medical and surgical colleagues for referring these cases and for their patient help, and also to the nursing staff and psychiatric social workers for their invaluable contributions. We also wish to thank Mr. T. F. Dee, of the clinical photographic department, Queen Elizabeth Hospital, Birmingham.

REFERENCES

- Asher, R. (1951). *Lancet*, **1**, 339.
 Batchelor, I. R. C. (1954). *British Medical Journal*, **1**, 1342.
 Benton, A. L. (1945). *Abnorm. soc. Psychol.*, **40**, 94.
 Buinewitsch, K. (1939). *Wien. med. Wschr.*, **89**, 472.
 Carter, A. Barham (1955). *Lancet*, **1**, 908.
 Clark, H. E., and Campbell, J. D. (1948). *Amer. J. Psychiat.*, **104**, 565.
 Fidler, R. F. (1948). *J. ment. Sci.*, **94**, 565.
 Flicker, D. J. (1942). *Amer. J. Psychiat.*, **99**, 168.
 Good, R. (1942). *British Medical Journal*, **2**, 359.
 Kay, D. W. K. (1953). *Proc. roy. Soc. Med.*, **46**, 669.
 — and Leigh, D. (1954). *J. ment. Sci.*, **100**, 411.
 Kerr, A. B. (1945). *J. roy. Army med. Cps.*, **84**, 230.
 McCullagh, E. P., and Tupper, W. R. (1940). *Ann. intern. Med.*, **14**, 817.
 Meduna, L. J. (1950). *Carbon Dioxide Therapy*. Thomas, Springfield, Illinois.
 Nemiah, J. C. (1950). *Medicine (Baltimore)*, **29**, 225.
 Ross, T. A. (1936). *An Enquiry into Prognosis in the Neuroses*. Cambridge.
 Stengel, E. (1952). *Proc. roy. Soc. Med.*, **45**, 613.
 Venables, J. F. (1930). *Guy's Hosp. Rep.*, **80**, 213.

THE AIR-CONDITIONING MECHANISM OF THE NOSE*

BY

Sir VICTOR NEGUS, D.Sc., M.S., F.R.C.S.

Honorary Curator, Ferens Institute, Middlesex Hospital

It has been the custom to regard the nose of man as designed especially for the protection of the respiratory tract. In fact, the greater part of the mucous membrane with which the nasal fossae are lined is known as respiratory epithelium, because of its similarity to that lining the tracheo-bronchial tree. The remaining area is olfactory; in man this specialized membrane is extremely limited in extent.

A study of the nose of representative species of vertebrates has shaken my belief in the interpretation of nasal anatomy for various reasons, which are elaborated later.

Cold-blooded animals such as lung-fish have no ability to use the nose for warming air, since their temperature approximates to that of their surroundings. As to moistening of inspired air, consideration is required in the case of lung-fish, the only examples of fish with a

pulmonary apparatus. I regret that I have no experimental data on which to form an opinion except to observe that in lung-fish and also in amphibia the area of nasal mucosa is limited and does not appear to be designed for the giving off of water vapour.

Olfactory Organs of Fish

It is important, however, to refer to the olfactory organ of fish, which I have studied in some detail, particularly in the carp (*Cyprinus carpio*). A superficial examination of the nasal organ of these and other fish shows that it is devoted entirely to the function of olfaction. It is a deep recess with a number of projecting lamellae; the number and disposition of these lamellae vary in different species (Fig. 1).

By cutting serial sections and making an enlarged transparent reconstruction, detailed examination shows that the greater part of each lamella is covered with columnar epithelium of non-olfactory type; the olfactory mucosa is very limited, and lies at the base of the lamellae. Investigation of the non-olfactory area reveals a number of clear vacuolated cells, which on special staining are found to contain mucus. These clear cells are arranged some below and some near the surface of the epithelium, and are discharged in varying number; similar clear cells are found in the skin, with the recognized function of discharging mucus, as a protection against fungoid infection, among other reasons.

Mucus is obviously not required for moistening, since the fish lives in a watery medium; it may contain lysozymes, in the case of man.

A consideration of this simple nasal organ discloses an anatomical arrangement comparable to that of most mammals, although dissimilar to that of man. There is, in fish, an aperture to the recess, as in mammals, with various mechanisms to carry in a current of water; in both types the superficial part of the recess is lined by epithelium with a protective function, while the olfactory area is placed deeply.

Structure of the Nose in Mammals

One is immediately faced with the possibility that the protective area of the nose of mammals is intimately concerned with the welfare of the olfactory region; this is only natural, since olfaction is the reason for which the nasal organ was evolved.

On examining the nose of amphibia and reptiles there is found to be a plentiful supply of mucous glands somewhat similar to the goblet cells of mammals; their disposition is generally anterior to the olfactory area.

When mammals are studied it is found that the structure of the nose follows a common pattern: close to the orifice or nares there is an air-conditioning plant made up of a more or less complicated body projecting from the lateral wall, the maxillo-turbinal. In the hinder or deeper region there lies the olfactory mucosa carried on projecting conchae known as ethmo-turbinals. To form a considered judgment on the reason for the varying degrees of complexity of these two portions of the nose, it is essential to examine all species. It will be best to consider a simple type first, and one of the primates will serve well for this purpose; in man various secondary changes have occurred, which somewhat confuse the issue.

The nose of a baboon or orang shows a flat maxillo-turbinal in the form of a single scroll, as in man. Somewhat above and behind there is a single ethmo-turbinal body (Fig. 2). Whatever protective function the nose fulfils as an air-conditioning plant for a respiratory tract is efficiently carried out by this simple nasal structure; so it is in man. There is anteriorly an area of mucous membrane with numerous vascular spaces; a good blood supply is required to provide heat for warming incoming air if much moisture is to be taken up. Consideration of the physics

*Read in the Section of Otolaryngology at the Joint Annual Meeting of the British Medical Association, Canadian Medical Association, and Ontario Medical Association, Toronto, 1955.