EARLY MENTAL DISEASE TREATED IN A GENERAL HOSPITAL:

AN ANALYSIS OF FIVE HUNDRED CASES.

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The following account gives an analysis of and commentary on one year's work from May, 1923, to May, 1924, in connexion with the wards in the Royal Infirmary of Edinburgh reserved for cases of early mental disease and incidental delirium. A period of fifty-four weeks has been taken to allow for a small number of cases not mentally affected, which were admitted to the wards and which are not included in the analysis for this reason. This has the further advantage of making the number exactly 500, which is convenient for calculating percentages. Of the cases admitted some are sent in by private practitioners for observation; a certain number consist of cases transferred from ordinary medical or surgical wards because of the development of mental changes which render their retention in these wards unsuitable; and a considerable number are brought by the police, or other outside authority, for observation. Many of the cases make a good recovery without incurring the trouble and stigma of certification as insane, but practically all present, on admission, considerable difficulty either in diagnosis or in treatment if it were to be conducted outside an institution. In order of frequency cases fall into the following groups, although it must be understood that this grouping is not suggested as a method of classification:

1. Alcoholic cases, 133 (26 per cent.).
2. Melancholia, 87 cases (17 per cent.).
3. Confusional states, 80 cases (16 per cent.).
4. States of dementia, 52 cases (10 per cent.).
5. Psycho-neuroses, 35 cases (7 per cent.).
6. Post-epileptic states, 29 cases (6 per cent.).
7. Cardiac delirium, 22 cases (4 per cent.).
8. Mania, 20 cases (4 per cent.).
9. Gross cerebral lesions, 16 cases (3 per cent.).
10. Fixed delusional states, 17 cases (3 per cent.).
11. Primary mental defect, 9 cases (2 per cent.).

The general principle followed with regard to disposal of the cases was that patients were put to bed for a period of one or two weeks' rest. By the end of three weeks it was generally quite possible to determine whether the case was likely to recover under treatment so far as to be able to proceed for a period of convalescence in the country or to return home. If the case appeared likely to recover to this extent under hospital conditions treatment was continued, but if at the end of about three weeks no improvement was discernible the patient was, in most cases, passed on to a mental hospital, either after certification, or in some cases as a voluntary admission.

The proportion of cases discharged sufficiently well to return home was 72 per cent. of the total (or, if the alcoholic cases be left out of account, it was 64 per cent.). The proportion of the cases passed on to mental hospitals was 17 per cent. of the total (or, excluding the alcoholic cases from consideration, it was 22 per cent.). Five cases only entered mental hospitals as voluntary patients, but these would probably have been more numerous if this method of disposal had been available for pauper patients. The deaths from all causes amounted to 7 per cent. of the total admissions, including a considerable number of the attempted suicides. Transfers to other (non-mental) hospitals, chiefly a Poor Law hospital, accounted for 3 per cent.

ALCOHOLIC CASES.

There were, in all, 133 cases definitely due to alcoholic excess. Most of these were brought in by the police as cases of doubtful diagnosis for observation. Of these, 102 cases (74 male and 28 female) were in a stuporous state, in which they continued for periods varying from some hours up to several days. The number of cases of delirium tremens

was 14 (13 male, 1 female), and 5 cases were admitted suffering from chronic alcoholic insanity (3 male, 2 female). In cases that showed delusions, the type associated with the Korsakoff syndrome, involving loss of sense of time and place, was very marked. Thus one patient who was able to give a good account of novels he had read, when asked suddenly where he was, gave the name of a public-house, and when asked how he explained the presence of the bed in which he lay, laughingly said he supposed it had been put there to pass away the time. It was found that 26 per cent. of all the cases admitted were directly due to alcoholic excess. It is interesting to compare this figure with the corresponding state ten years ago. In the year 1913, 42 per cent. of the patients admitted suffered from alcoholic excess and the number of cases of delirium tremens was four times as great as in the year now under review. The age of persons suffering from alcoholic excess presents a feature of interest, the average age of the male alcoholics being 47, and that of the women 45 years, while only two men and one woman were under 30 years of age. From the fact that the average age of these persons in 1914, at the commencement of the war, was 37, it is obvious that they could have taken no very active part in the war, and that war conditions have had, therefore, practically no influence in the production of alcoholism, so far as the group of Edinburgh Hospital cases is concerned. Further, excessive drinking among the young would appear to have diminished almost to a vanishing point. In addition to the cases which are directly due to alcoholic excess, the question of alcoholism enters, as a partial cause, into the histories of a number of other patients suffering from psycho-neuroses and other mental states, so that it would be quite safe to say that alcoholism still enters in some degree into the causation of at least 30 per cent. of all these cases of slight mental deterioration among persons of middle life and over.

Some cases were admitted suffering from the effects of drinking methylated spirit. In general, the resulting intoxication was more violent in effect, but more transitory in duration, than that produced by whisky only. After drinking methylated spirit, excretion by the kidney was very rapid, and clear, almost colourless, urine was passed which in two cases had a specific gravity less than that of distilled water.

MELANCHOLIA AND DEPRESSION.

Of the 87 cases admitted for depressed or melancholic states 58 were cases in which suicide had been attempted. The most prevalent method of suicide employed was by cutting the throat (17 cases); lysol came next in order of popularity (13 cases), coal-gas inhalation was responsible for 7 cases, and drowning had been attempted in 6 cases. In considerably smaller numbers the means used were: ammonia (3 cases), paraldehyde (3 cases), morphine (2 cases), oxalic acid (1 case), hydrochloric acid (1 case), creosote (1 case), arsenic (1 case), tincture of belladonna (1 case), opening of blood vessels (1 case), and falling in front of a railway train (1 case). Simple melancholia without delusion characterized 75 per cent. of the depressed cases; and it is important to note that most of the attempts at suicide were made by persons suffering from simple melancholia without delusions.

With regard to the cause of melancholia and depression, a bad family history was found in this type of mental disease more frequently than in any other, 26 per cent. of the cases having had from one to four immediate relations definitely insane. In the great majority of the cases it was impossible to attribute the cause to any one factor, a complex, consisting in part of poor physical development, overwork, and difficulty of adaptation to surroundings, being usually present. In addition, a number of cases showed some definite physical toxic influence which might be regarded as a precipitating cause of the attack for which the patient was admitted. These included a septic condition of the mouth, general alimentary disorder with constipation, thyroid gland disorders, and various preceding febrile conditions. A definite toxic precedent could be traced in 45 per cent. of these cases, although it was sometimes difficult to say whether the toxic condition should be regarded as the cause or as one of the results of the general physical and mental debility. In 60 per cent. of the cases evidence of

prolonged mental strain arising from the patient's circumstances was elicited—for example, the worry of a drunken husband, of financial conditions, disappointment in some matter upon which the patient had long been counting, loss of relatives, and very frequently idleness consequent upon being out of work. The onset was usually gradual, and in many depressed cases symptoms or recurrences had been noticed for several months or years. The largely temperamental nature of this type of mental disorder was evident from the fact that one-third of the cases were recurrent. Simple melancholia was found to be much commoner in females than in males (85 per cent. and 15 per cent. respectively); but suicide was attempted more frequently in male melancholics (3 males to 2 females). Among the elderly female cases the depression began definitely, in one-third of the cases, in association with the onset of the climacteric. The general plan of treatment included rest in bed, attainment of sleep, if necessary by hypnotics, removal of the toxic or other physical cause, and the provision of light useful work as soon as the patient could take an interest in it. The result of hospital treatment was very satisfactory in melancholic cases, over 60 per cent. being discharged cured, or at least sufficiently well to return home, after about three weeks' detention. Less than 40 per cent. passed on to mental hospitals as more chronic cases.

CONFUSIONAL STATES.

The 80 cases showing a definite confusional condition included 17 post-operative cases (most of which were associated with sepsis); 4 puerperal cases which were also septic; 16 cases of concussion; 7 nephritics with albuminuria; 13 toxic cases following febrile conditions, especially influenza; 13 cases of pneumonia; 3 cases of diabetes; 2 cases of pernicious anaemia; 1 case of tuberculous kidney; 1 case of haematemesis; 1 case of malignant tumour; 1 case of acute lymphatic leukaemia; and 1 case of pellagra. Most of the confusional cases had delusions of a mild character and very varied type, and 2 cases showed complete transitory loss of memory. Leaving out the cases of concussion, toxic and exhaustive elements were very obvious in the great majority, and such cases were very amenable to treatment; the chief conditions required for treatment being complete rest in bed for a period of two or three weeks, with removal of the septic focus, or treatment of the general septic condition.

No characteristic type of delirium was noted in these conditions, except that in the pneumonia cases, when collapse was impending, the weakness and mental obfuscation produced by the toxic state induced signs resembling those described by Mistress Quickly in the end of Falstaff: "After I saw him fumble with the sheets and play with flowers and smile upon his fingers' ends, I knew there was but one way; for his nose was as sharp as a pen, and 'a babbled of green fields'" (*King Henry V*, II, iii, 14). In several other cases associated with cardiac dilatation, the delirium partook of the cardiac type. A patient with pernicious anaemia showed delirium of a very striking character. During the day the patient, who had been doing his work as a railway guard up to two days before admission, was perfectly clear, but every evening he developed a state of wild excitement, imagining that preparations were being made to burn him at the stake, tied to a woman. There were evidently two elements in this complex—one was the element of cardiac excitement, the other, apparently, was some repressed memory stirred up by reflection on the unknown cause of his serious disease. As the anaemia and cardiac dilatation improved the nightly recurrences of the delirium became less terrifying till they disappeared completely.

CARDIAC DELIRIUM.

Cases with heart lesions who had lapsed into a state of delirium numbered 22. Of these, in 40 per cent. myocarditis with feeble cardiac action was present; in 40 per cent. mitral disease (of which one-half showed auricular fibrillation); and in 20 per cent. aortic incompetence. None of the cases of cardiac delirium was younger than 41, and the average age was 59 years. A correspondence has taken place recently in the *BRITISH MEDICAL JOURNAL* (July, 1924) as to the type of delirium present in cardiac cases. In my experience the special feature of cardiac delirium is restlessness

or excitement, proceeding to anxiety or apprehension in 90 per cent. of the cases—

"Like one that on a lonesome road
Doth walk in fear and dread,
And, having once turned round, walks on
And turns no more his head,
Because he knows a frightful fiend
Doth close behind him tread."

The mechanism appears to be a sense of the necessity for muscular effort, coupled in severe cases with a sense of impending dissolution. The disorientation as to place, if present, is merely incidental to restlessness. If the patient imagines himself to be at his place of business this is merely because of the activity and anxiety associated therewith. Another special characteristic of cardiac delirium is that it tends to appear especially towards night, and may pass away completely every morning as the vital tide returns. One patient imagined regularly every evening that "a man with a gun took up his position outside the window" intending to shoot him, and this was associated with great restlessness and anxiety. Another remembered clearly, on the morning of admission, having struggled in the night with his daughter for possession of a knife which he wanted because he thought "his life had to come to an end." Still another was greatly distressed because he had "to rush for the train to business in Edinburgh." The delusion of cardiac delirium thus differs greatly from the delusion of the alcoholic case, which very definitely involves time and place, and is often of a pleasant, sensuous, or amusing nature. The degree of excitement in cardiac cases offers considerable help in assessing the amount of impairment in the function of the heart for the time being.

STATES OF DEMENTIA.

This type included 13 cases of adolescence between the ages of 10 and 30 years, in whom the occurrence of such symptoms as katatonia, impulsiveness, bizarre delusions, negativism, and general mental aberration warranted a provisional diagnosis of dementia praecox. A few improved sufficiently to go home, but most of these cases were transferred to mental hospitals. Senile dementia (20 cases) was, in general, associated with arterio-sclerosis and other signs of physical senescence. The most interesting group of cases showing dementia were those associated with syphilitic infection. Two cases of confusion, so profound as to give the impression of dull stupid dementia, occurred at an early stage of this disease, and were presumably due to syphilitic cerebral endarteritis. The mental symptoms in both disappeared after treatment by novarsenobenzol, and these patients became fit to return to their work. These cases are important as showing the great value of early diagnosis and prompt commencement of treatment in patients with cerebral syphilis who are otherwise apt to lapse into permanent dementia. The cases of dementia paralytica numbered 13 (12 men and 1 woman), and the average age of onset was 40 years. All these cases were undiagnosed before admission. The symptoms presented are therefore of interest in regard to diagnosis of general paralysis at an early stage. Only 6 of the cases showed any delusions, and of these 2 only had grandiose ideas. Difficulty of articulation was present in 4 cases. In 2 cases blindness, due to optic atrophy, had existed for several years before mental change supervened. The condition of the reflexes varied much, the knee and ankle jerks being exaggerated in some, absent in others, and in still others exaggerated on one side and diminished on the other. The plantar reflex was extensor or varied from time to time in a few cases, but was flexor in the majority. The signs common to all were: failure or diminution of the pupillary reflexes to light, weakness of power of judgement, physical weakness, tremulousness, and strongly positive Wassermann reaction in the blood and cerebro-spinal fluid. The colloidal gold reaction, in those of the cases where it was carried out, conformed to the finding of the Wassermann reaction. All the cases, with one exception, were unaffected by antisyphilitic treatment, and were transferred to mental hospitals. With regard to one case with well marked delusions, who lost all mental symptoms under treatment, the Wassermann reaction in blood and spinal fluid, and the colloidal gold reaction, nevertheless remained strongly positive, although the patient had received 18 grams of novarsenobenzol in six months.

PSYCHO-NEUROSES.

This group included 27 cases of hysteria and 8 of neurasthenia. With regard to cause, definite physical pelvic abnormalities, such as ovarian tumour, uterine prolapse, hysterectomy, etc., were found in 50 per cent. of the hysterical cases, thus justifying the ancient Greek name of the condition. In this group a previous sexual trauma in the Freudian sense was found to be especially prevalent, and the method of psycho-analysis was more applicable than in any other type of mental aberration. In my opinion, however, the employment of this procedure, while very useful in elucidating the vagaries of the patient, is more apt, considered as a therapeutic agent, to be followed by increased mental unrest and distress than by improvement. One case in every four had delusions or hallucinations, most commonly of hearing. All the cases were improved after an average stay in hospital of three weeks, and one only passed on to a mental hospital as a voluntary patient. One neurasthenic was a morphine habitué, and in addition had had laparotomy performed several times, apparently to no purpose. This was the only case of drug addiction, which seems to be a much less frequent habit in Scotland than among more southern peoples.

POST-EPILEPTIC STATES.

The number of cases admitted to hospital because of some abnormal state following on epileptic seizure was 29. Of these, 12 per cent. were maniacal or homicidal, 25 per cent. confused with a tendency to automatic behaviour, 25 per cent. had definite delusions, 25 per cent. were greatly depressed, and 13 per cent., after a period of stupor lasting from a few hours to several days, became quite normal. The average age of the epileptics treated was 37 years, and one-half of them were mental defectives in a marked degree.

MANIA AND MANIC-DEPRESSIVE INSANITY.

The number of maniacal cases was 20, of which 3 were recurrent. A very close connexion with previous debilitating factors was evident in 80 per cent. of the cases. These factors included typhoid fever, exhausting journeys, the strain of nursing a relative through a long illness, the puerperium, and in a few elderly cases the climacteric. The average age of cases was 45 years. This type of insanity was not so suitable for treatment in a general hospital as were simple melancholic cases, and, while 40 per cent. recovered sufficiently to go home, 60 per cent. passed on to mental hospitals.

GROSS CEREBRAL LESIONS.

These included cerebral thrombosis or embolism (6 cases), cerebral tumour (2 cases), meningitis (3 cases), encephalitis lethargica (4 cases), and lead encephalopathy (1 case). The mental changes in these cases were of the confusional type, passing later into dementia or death.

FIXED DELUSIONAL STATES.

Cases with fixed delusions numbered 17, including 3 cases diagnosed as paraphrenia and 1 as paranoia. These cases, with two exceptions, failed to respond to treatment, and were transferred to mental hospitals after a period of two or three weeks' observation.

CONCLUSIONS.

1. The chief deduction to be made from this analysis is the great usefulness of a general hospital in treating slighter or undiagnosed cases of mental disorder; of these 64 per cent. could be treated successfully without transfer to a mental hospital. This especially concerned melancholic cases.

2. Mental disorder produced by alcohol appears to have greatly decreased and to be confined now chiefly to elderly persons.

3. Physical conditions (infective, exhaustive, or reflex) as partial causes were discovered in the majority of the cases of melancholia, mania, confusional insanity, and psycho-neuroses.

4. Types of disorientation and delirium, that are to a considerable degree characteristic, can be recognized in association with different causes of mental disorder.

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THE PATHOLOGY AND SURGICAL TREATMENT OF ANGINA PECTORIS.

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I. DEFINITION.

SOME writers on angina pectoris include under this heading syndromes which have no connexion whatever with the condition. Many cardiac diseases are accompanied by precordial symptoms similar to those of angina, but this name should be restricted to a sensori-motor syndrome of the myocardium, sudden in onset, sometimes ending in death, and not depending on dilatation of the heart. Acute pulmonary oedema, the *angine de poitrine de décubitus* of French writers, ought not to be classified as angina, since it is a syndrome arising from an acute dilatation of the left ventricle; it should be included in the asystole group. A fundamental difference exists, moreover, between angina pectoris and the phenomena of cardiac dilatation, anginal attacks only occurring when the myocardium is healthy and acting well; they diminish or disappear as soon as the heart becomes weak and dilated. Aortic pain must similarly be removed from the category of angina, since this condition results from the distension of a diseased aorta by a sudden increase of intra-aortic pressure. The precordial pain in this case is like that of angina, and the aortic distension necessarily gives rise also to cardio-vascular reflexes, but the condition is related exclusively to the aorta, and is probably never the cause of death. An additional difficulty in distinguishing clinically between angina and aortic disease is that the same factor—for example, sudden exertion—may bring on at the same time two phenomena, the anginal spasm referable to the myocardium, and aortic pain originating in the aortic wall. But when the mechanism of their production is considered a sharp distinction must be drawn between these two pain syndromes, and it must be emphatically denied that an attack of angina pectoris can ever be produced by aortic distension.

II. PATHOLOGY.

I cannot give assent to the aortic hypothesis put forward by Clifford Allbutt, Smith, Wenckebach, and Vaquez, according to which angina pectoris is exclusively due to aortic distension. It is impossible to imagine such a distension occurring without there being an increase in the intra-aortic pressure, and yet those very writers who uphold the theory of aortitis admit that the blood pressure is not invariably increased during an anginal attack. Then, again, it is difficult to account for the occurrence of death if there is nothing more than a simple distension of the aorta. The reflex inhibition due to stimulation of the vagus, which Clifford Allbutt cites as the cause of death, ought to be accompanied more often by cardiac phenomena referable to the parasympathetic system, in particular by slowing of the heart beat. Yet very often the beat is quickened during an attack, and death supervenes on a condition of marked tachycardia or arrhythmia. Mackenzie suggests as the cause the onset of myocardial exhaustion, but in none of his publications apparently does he distinguish between this condition and that which other writers recognize as myocardial insufficiency leading to dilatation. Opposed to this hypothesis of Mackenzie is the fact that in the anginal patient his attacks occur only whilst the myocardium is acting well; so soon as it becomes weak, and dilatation occurs, the attacks diminish and cease. Coronary disease can no longer be advanced as a hypothetical cause of angina pectoris. Cases of disease of the coronary arteries without anginal symptoms are known to occur, and also cases of angina pectoris in the absence of coronary disease. It appears advisable, therefore, to replace the anatomical idea of coronary disease by the physiological conception of an inadequate coronary circulation. Angina pectoris cannot be described as an inflammation of the coronary arteries, since either may exist in the absence of the other. It is possible, however, to say that all angina pectoris is the result of an inadequate coronary circulation, which may occur when