REVIEW OF MENTAL ILLNESS IN THE OLDER AGE GROUP

BY

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This review of 198 female patients admitted at the age of 60 or over to one particular section of the Royal Edinburgh Hospital for Nervous and Mental Disorders is designed to call attention to the wide variety of clinical syndromes found in this age group. The choice of the age of 60 as a base-line is deliberate, and is a tacit recognition of the conventional tendency to attribute any gross deviation in thought and conduct observed in patients over 60 to a greater or less degree of "senile" pathological change in the cerebral vessels or brain parenchyma. It may be remarked at the outset that our findings do not corroborate this popular assumption. Many other types of toxic-infective, neoplastic, or degenerative cerebral disease may be the underlying cause. Moreover, while it is wise to look first of all for an organic lesion to explain mental symptoms at this period, it is also true that the so-called "functional" psychoses—notably depression—may erupt for the first time in the individual's life cycle after the age of 60. All these alternatives add to the difficulty of diagnosis, but they also imply that prognosis and reaction to treatment may be better than is usually thought.

In the past ten years many excellent papers have appeared on this subject of mental illness in the older section of the population. The majority of these, however, deal with the statistical implications of the rise in mental morbidity in this group. Only a minority are devoted to clinical aspects. This discrepancy has been emphasized by Professor Aubrey Lewis (1946), who states: "The clinical is probably now the most neglected field in the study of the psychiatry of ageing. . . . I would therefore plead for a greater interest in the straightforward clinical aspects of mental disorder as seen in the aged." Even in the few clinical studies published, clinico-pathological confirmation is sometimes lacking, yet it is precisely in mental illness in the elderly, which is often too readily ascribed to senile degenerative processes, that necropsy studies are most valuable.

Clinical Material

The 198 patients reviewed represent all the female patients of the age of 60 or over admitted to one section of the hospital during the six-year period January 1, 1946, to December 31, 1951. Each patient was studied by one of a group of six physicians, and all were under the observation of one of us (E. E. R.) throughout their stay in hospital in the period under review. The number of admissions of the over-60 group during this period was 244, and the number of individual patients 198. The discrepancy between the two figures illustrates the well-known tendency for affective psychoses to recur; for, apart from a few patients with "arteriosclerotic episodes," nearly every patient with two

or more periods in hospital suffered from recurrent manic or depressive episodes. The social background of the patients can be summarized by the statement that they represented a cross-section of all social grades with the exception of the very wealthy.

At the end of the five-year period 81 (41%) had been discharged, 38 (19%) were still in hospital, and 79 (39%) had died. (These figures refer to individual patients.) Thirty-four necropsies were performed, representing 43% of all deaths. This is not as high a necropsy percentage as we could have wished, but every doubtful case was included. This may be illustrated by reference to group II, which included the supposedly rare organic states, such as Alzheimer's disease, Pick's disease, cerebral tumour, etc. In this group necropsy was carried out in every case of death. In addition 14 necropsy reports on patients admitted at the age of 60 or over during an earlier period, but dying in the period under review, were scrutinized for comparison. Of the 14 patients, 10 suffered from an organic cerebral disease and four from a depressive psychosis.

The diagnostic classification of the 198 patients is summarized in the accompanying Table.

Diagnostic Grouping

	Total	Age on Admission		Deaths During Period	% Necropsies to Deaths
		60-69	70+		
A. Unequivocally organic psychoses (total, 92):					
Group I: Cerebral arteriosclerosis and senile dementia	68	9	59	47	30%
Group II: Organic cerebral disease not included in group I:					
(a) Alzheimer's disease 10	24	24	—	5	100%
(b) Pick's disease 2				1	
(c) Cerebral tumour 3				3	
(d) Amyotrophic lateral sclerosis with mental symptoms 1				1	
(e) Syphilis 3				1	
(f) Drug intoxications 3				1	
(g) CO poisoning—cerebral lesion 1				1	
(h) Myxoedema 1				1	
B. "Functional" Psychoses (total, 96)					
Group III: Affective states:					
(a) Uncomplicated:	58	51	7	4	
Depression 54					
Mania 4					
(b) Depression secondary to physical disease:	7	5	2	6	
(i) Extrapyramidal disease 3					
(ii) Cardiac disease 2					
(iii) Aortitis 1					
(iv) Carcinoma 1					
	65	56	9	10	40%
Group IV: Paraphrenia and schizophrenia	23	15	8	6	33%
Group V: Psychopathic states	8	8	—	—	
C. Group VI: Mixed organic and affective symptomatology (total, 10)	10	7	3	5	66%

A. *Organic Psychoses.*—Slightly less than half the total number of patients reviewed (92 out of 198, or 46.5%) suffered from organic psychoses—that is, they displayed intellectual and emotional disturbances of the type found in association with pathologically verifiable lesions within the brain (groups I and II).

B. *Functional Psychoses.*—The number of patients diagnosed as suffering from one or other of the so-called "functional" psychoses (affective states, schizophrenia, psychopathic states) was roughly similar, being 96 out of the total 198, or 48.4% (groups III, IV, and V). Here the mental disturbance was confined to the emotional sphere and intellectual defects were absent. (We are aware that this differentiation between organic and "functional" psychoses on a

basis of presence or absence of intellectual defects is an over-simplification. The aggregation of mental symptoms seen in frontal lobe tumour or as a sequel to some cases of encephalitis, for instance, may include no intellectual defects measurable as such, yet they none the less warrant the designation of organic psychoses. But, accepting this dichotomy between "emotional" and "intellectual" as artificial, it is nevertheless a useful abbreviation for present purposes, and avoids the necessity for summarizing the other manifold criteria of differentiation between the organic and "functional" psychoses.)

C. In 10 of the 198 patients, or 5%, difficulty was experienced in deciding whether the patient was suffering from a pure affective state—the predominant affect in all 10 was depression—or whether senile organic change coincided. They are accordingly classified under the designation "mixed symptomatology" (group VI).

Age Incidence

Illustrated in Fig. 1 are the relative proportions in each diagnostic group, and also the age incidence. It will be noted that by far the greater number of patients diagnosed

FIG. 1.—Diagnostic groups.

as suffering from cerebral arteriosclerosis and senile dementia (group I) were aged 70 and upwards at the time of admission; only 9 of the 68 were aged 60 to 69. An almost exact reversal of this ratio is found in the second largest numerical group of affective states (groups III, a and b), where 56 were aged 60 to 69, and only 9 were aged 70 or upwards at the time of admission. Patients suffering from organic cerebral disease other than cerebral arteriosclerosis and senile dementia (group II) were all aged 60 to 69 on admission. The smaller groups IV, V, and VI show a similar preponderance. This suggests that mental symptoms occurring in patients between the ages of 60 and 69 give rise to infinitely more varied diagnostic possibilities than those occurring in later decades.

A. Organic Psychoses (92 Cases)

Group I: Senile Dementia and Cerebral Arteriosclerosis (68 Cases)

Sixty-eight patients—approximately one-third of the total patients reviewed—suffered from cerebral degenerative processes classically associated with old age, and of these only 9 were under 70. Senile dementia (in which degeneration occurs primarily in the parenchyma of the brain) and cerebral arteriosclerosis have been bracketed together, since, despite the dicta of some writers, they are not always easy to differentiate on clinical grounds alone. The slow but relentless mental deterioration, global memory defect, and absence of focal neurological signs seen in senile dementia have been contrasted with the fluctuating course, greater retention of personality, and frequency of focal signs regarded as characteristic of cerebral arteriosclerosis. Admittedly, the typical case of either is easily recognized. For instance, using the accepted criteria of diagnosis of cerebral arteriosclerosis, we readily concluded, on clinical examination alone, that 8 of the 9 cases in the 60 to 69 age group and 15 of the 59 aged 70 or over were suffering from cerebral arteriosclerosis and not senile dementia. But cerebrovascular disease does not invariably present with the triad of signs popularly ascribed to it. When vascular changes occur primarily in the smaller cerebral arteries—a condition which by reason of its specific pathology warrants the separate title of *arteriolosclerosis*, the clinical picture closely simulates that seen in senile dementia. And even *atherosclerosis*, or disease of the larger arteries, particularly when it occurs after the age of 70 and is "decreased" in type—that is, unaccompanied by peripheral hypertension—may follow a steady unremitting course, more reminiscent of senile dementia than "classical" arteriosclerosis. Another obvious difficulty is that these pathological conditions may appear in combination. In 24 consecutive necropsies the lesion was found to be sufficiently discrete to merit subdivision in 16, which were made up as follows: atherosclerosis 8, arteriolosclerosis 3, and senile dementia 5; while the remaining 8 cases showed varying combinations of parenchymatous and vascular disease. We stress these points deliberately because we have observed that writers demarcate these conditions on clinical grounds alone, and on this dubious basis draw conclusions on their relative frequency. Although we believe that there are many subtle differences in the mental picture to act as pointers in the differentiation of these senile pathological processes, and that it is an obligatory clinical exercise to attempt such differentiation, we are convinced that separation into two arbitrary categories should not be made unless *all* the cases considered have been submitted to necropsy.

Group II: Organic Psychoses other than Senile Dementia and Cerebral Arteriosclerosis (24 Cases)

In this group the underlying cerebral lesion was the result of a variety of causes, including infection, intoxications, and tumour, such as may occur at any period of life, or degenerative processes of the Pick or Alzheimer type, the aetiology of which is as yet unknown, but which characteristically appear between the ages of 40 and 60—that is, in the "presenile" rather than the senile period. The various syndromes are included in the Table and are illustrated in Fig. 2. This group of patients, all of whom were aged 60 to 69 at the time of admission, numbered 24. This figure should be set beside the number of patients admitted in the same age decade with cerebral arteriosclerosis or senile dementia, who totalled only 9. The nature of our material precludes the drawing of too narrow conclusions from these figures, since it is probable that patients with mild or transient defects based on cerebral arteriosclerosis, for instance, may never be admitted to a mental hospital. Nevertheless, they emphasize that many aetiological factors require consideration before a final diagnosis is made on an organic mental picture occurring between the ages 60 to 69.

Infections and intoxications do not on the whole give rise to difficulty in diagnosis, since the history is usually sugges-

tive and the bacteriological findings are often conclusive. But it is rare to find the presenile degenerative states and cerebral tumour diagnosed before admission—they are most commonly presumed to be cases of cerebral arteriosclerosis or senile dementia. The failure to recognize tumour rests in part on the tendency to regard headache, vomiting, and papilloedema as early and invariable symptoms, whereas in patients of this age group they are either late in developing or may never appear at all. But a more frequent cause of non-recognition is the tendency to mistake or disregard

FIG. 2.—Analysis of organic psychoses.

focal signs in the psychic sphere. An aphasic defect in the form of difficulty in naming objects, for instance, may be put down to generalized memory loss. A more severe sensory aphasia may be interpreted as apathy and indolence, or even deafness.

Alzheimer's and Pick's Diseases.—These presenile degenerative diseases accounted for the admission of 12 of the 198 patients reviewed, or approximately 6%. Since they are reported to occur more often in women than in men, a comparable group of male patients might not be expected to show quite the same high incidence. In 10 of the 12 patients, symptoms had appeared before the age of 60. There was reason to believe that the same was true of the remaining two, but their histories could not be adequately ascertained. Necropsy was carried out on all patients who died (Alzheimer's disease, 5; Pick's disease, 1) and the diagnosis confirmed. A long history of steady intellectual decline beginning before the age of 60 should give rise to the suspicion of the existence of one of these presenile degenerative disorders. A remarkable finding in this group is the lengthy duration of the illness before referral for medical opinion—relatives accepting the manifold disabilities of the patient without query. Aphasic and apractic defects are invariably present, and the degree of intellectual deterioration is much more profound than that found in any patient of equivalent age with cerebral arteriosclerosis—unless the latter is accompanied by a severe degree of peripheral hypertension. We believe that Alzheimer's disease and Pick's disease are less rare than is supposed. It is not submitted, of course, that their recognition results in any practical therapeutic advantage to the patient. Nevertheless, at some future date their aetiological elucidation may throw light on general problems of ageing, and, at the present

time, statistical surveys of the older hospital patient which neglect the separate diagnosis and classification of this group result in an erroneous interpretation of the frequency of the true senile degenerative states.

B. "Functional" Psychoses (96 Cases)

Incidence of Earlier Mental Illness.—One feature in particular distinguishes the functional psychoses from organic cerebral disease, and that is the frequent finding of earlier mental illness in the former. Such earlier mental illness may have been episodic, as in the affective states, or continuous, as in the majority of cases of schizophrenic or paraphrenic disorder. Or again, as in the psychopathic states, the patient may have shown lifelong aberrations of conduct—such aberrations only on occasion reaching sufficient magnitude to require admission to a mental hospital. In all these cases age may be of little or no importance in aetiology.

Group III: Affective States

Affective psychoses occurring at the age under review customarily take the form of depression—manic reactions are infrequent. This high incidence of depression found in later life has long been recognized by mental hospital physicians. Clouston (1904), in an analysis of cases of "senile insanity," stresses the frequent occurrence of "simple melancholia," adding, "its only special senile character being that it occurred in old people." This phrase admirably describes the cases considered in group III of this series. These also showed the incidental features associated with depression whatever the age of onset, as follows:

1. **High Incidence of Previous Affective Illness.**—All four patients with a manic reaction and 27 of the 54 patients with uncomplicated depression had a history of one or more attacks of a similar illness before the age of 60. All had been capable of normal work in the interval. The remaining 27 of the 54 patients with depression—that is, 50%—had no previous history, and this was also true of no fewer than six of the seven patients who became pathologically depressed in the course of a severe systemic illness.

2. **High Incidence of Attempted Suicide.**—A determined suicidal attempt had been made immediately before admission by 15 of the total group of 65 patients, or 23%. (The methods utilized were: coal-gas poisoning, 6; corrosive poisoning, 2; barbiturate poisoning, 1; cut throat, 2; severed arm vessels, 1; jumping from window, 3.)

3. **Relatively Good Prognosis.**—By December 31, 1951, three of the four patients with a manic reaction had been discharged recovered. Of the 54 patients with uncomplicated depression, 34 (63%) had been discharged recovered. Of these 34 recoveries, however, six had been admitted on two or more occasions during the six-year period with recurrent depressions, and the prognosis in regard to the future of these six was doubtful. This leaves a corrected sustained recovery rate of 28 out of 54 cases of depression, or 52%. Twenty of the 54 did not recover, and, of these, four had been discharged, twelve were in hospital and four had died by the end of the period. Electric convulsion therapy was given to 32 of these 54 patients aged 60 or over. A surprisingly large number recovered in the first month following admission without the aid of E.C.T. A similar observation has been made by Karagulla (1950) in a study carried out in this hospital on a large series of depressions in all age groups. Of the seven patients (group III, b) whose depression occurred on a background of severe physical illness, six died as a result of the underlying illness and one was discharged.

4. **Absence of Gross Histopathological Findings in the Brains of Patients Dying During a Depressive Illness.**—The absence of intellectual defects in the clinical picture of these senile depressive states was reflected in a similar absence of gross cerebral pathological change in those cases submitted to post-mortem examination. The histopathological findings in eight cases (four belonging to this series and four relating to similar patients admitted before 1946 but dying in the period under review) in no way differed from those reported in patients dying at the same age period with other than mental disease. Slight gyral atrophy, slight patchy atheroma, or a minor degree of arteriolosclerosis unaccompanied by gliosis or cellular loss were usual findings. Two cases showed no pathological abnormalities.

Relationship of Depressive Psychosis to Ageing.—The finding that 50% of all patients with depression had no history of a similar illness in earlier life—and the additional

finding that in the 50% previously affected long periods of normal functioning had intervened between their former illness and present breakdown, would suggest that the ageing process plays some contributory part in the causation of such depressive illnesses. In this respect depression differs from the other functional psychoses responsible for the admissions of patients in this age group (see below).

Group IV: Schizophrenia and Paraphrenia (23 Cases)

In this group a history of earlier mental illness was obtained in no fewer than 20 of the 23 patients, and in these cases the description given was rarely one of episodic breakdown with intervals of normal functioning as in the foregoing cases of recurring depressions, but took the form of a long-standing socially incapacitating mental illness. In 15 of these 20 the lengthy duration of the illness was confirmed by hospital case records, in 5 by evidence of relatives. Illnesses of 20 to 30 years' duration were common. One patient had first been admitted to this hospital 42 years previously, had been removed a year later, and had lived the life of a recluse under the care of her relatives until her second admission at the age of 68. It was more common to find that these patients had a history of frequent long sojourns in hospital, yet their records also illustrated that a florid schizophrenic thought disorder was not incompatible with equally long periods spent outwith hospital supervision. These are, of course, commonplace facts of mental hospital experience. They are reiterated here in order to stress that admission to hospital with a schizophrenic or paraphrenic illness after the age of 60 does not necessarily imply that the patient first developed symptoms at this age. In only 3 of the 23 patients in this group was the illness of seemingly recent onset. It is appreciated that paranoid symptoms as distinct from paraphrenia are common in this age group. They may occur in depression or in association with organic cerebral disease. But the "systematized delusional insanity" of the older writers would appear from these figures to begin only infrequently after the age of 60.

Group V: Psychopathic States and Epilepsy

These eight patients had shown lifelong aberrations of conduct: in five these aberrations had been so severe as to lead to frequent earlier admissions to a mental hospital. In three the conduct disorder had displayed itself in chronic alcoholism; one suffered from epilepsy, with concomitant emotional disturbance; while the remaining four had displayed antisocial conduct throughout life. This number does not truly indicate the proportion of such patients admitted at the age of 60 or over. Two of the cases of drug intoxications in group II were drug addicts with psychopathic character anomalies. One of the cases of cerebral arteriosclerosis in group I had a long history of behaviour disorder, including chronic alcoholism, and had been admitted at an earlier age with a Korsakoff's psychosis. The necropsy findings in this case revealed, in addition to vascular softening, an extreme reduction in size of both mamillary bodies—an observation of interest in view of the earlier Korsakoff's psychosis. Nevertheless, if a few such cases with psychopathic character anomalies are added, the total number is still small. This corroborates the accepted hypothesis that age, by diminishing the aggressive urges, ameliorates to some extent the condition of this unfortunate group (Henderson, 1939).

Group VI: Mixed Affective and Organic Symptomatology (10 Cases)

The predominant affect in all these 10 patients was depression—four had made determined suicidal attempts before admission—yet they also showed features suggestive of organic cerebral disease. Only two recovered. Their recovery was rapid; electric convulsion therapy was not given, and afterwards they showed no intellectual defects other than those explicable in terms of normal senility—both were over 70.

The remaining eight formed a homogeneous group, alike in clinical symptomatology and the intractable and distress-

ing nature of the illness. All displayed extreme agitation, perseveration in speech and action, and, finally, profound deterioration in personal habits. Of these eight patients five received one or more courses of convulsion therapy, and prefrontal leucotomy was later performed on one of these five. At the end of the period reviewed, three were still in hospital unchanged and five had died. Necropsy was carried out in three of the five deaths. In the first, macroscopic and microscopical examination of the brain was negative; gyral atrophy and a mild cortical arteriolosclerosis were demonstrated in the second; while in the third a somewhat more severe arteriolosclerosis with slight nerve-cell loss was reported. All three patients were aged 65 to 69 at the time of death. While it would be tempting to postulate of the eight cases showing this malignant syndrome that senile cerebral changes may aggravate and perpetuate a depressive illness, no conclusions can be drawn from these equivocal findings in a small number of necropsies. It may be that, despite the seeming organic nature of part of their symptomatology, these patients actually suffered from a true depression and that the necropsy findings are fortuitous. We feel, however, that their separation from the other cases of depression in this series is justified both by reason of the particular clinical picture shown and because they emphasize the existence of a group of resistant depressions not susceptible to amelioration by physical methods of treatment.

Summary

A review is made of a group of 198 female patients admitted to a mental hospital at the age of 60 and over. Attention is drawn to the diversity of clinical syndromes found.

Approximately one-third of the total suffered from the cerebral degenerative processes commonly associated with old age—namely, cerebral arteriosclerosis and senile dementia. These two conditions are bracketed together, since necropsy studies indicated that they could not always be differentiated on clinical findings alone. One-eighth of the patients suffered from other types of cerebral disease, and this demonstrates that organic dementia occurring in later life should not be too readily ascribed to cerebral arteriosclerosis or senile dementia.

Approximately another third of the total were admitted with a diagnosis of depression. Half of these patients had a history of previous depressive episodes, while half developed a depression for the first time after the age of 60. This suggests that age has some importance as a contributory factor. Two smaller groups of patients were diagnosed as suffering from schizophrenic-paraphrenic psychoses and psychopathic states. The history in almost all these cases revealed that the psychosis or personality anomaly had been manifest long before the age of 60.

All these findings denote that *en bloc* statistics of mental hospital admission can give only inadequate information on the mental sequelae of ageing.

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