Dementia of Frontal-Lobe Type. D. Neary, J.S. Snowden, D.M.A. Mann. Department of Neurology, Manchester Royal Infirmary and Department of Pathology, University of Manchester, Manchester M13 SWL, England.

A longitudinal clinico-pathological study of patients with dementia indicates that primary cerebral atrophy leading to dementia represents a heterogeneous group of conditions.

Thirty-eight patients have been studied who presented with striking breakdown in social and personal conduct with autistic behaviour and progressive loss of language. They exhibited a frontal lobe syndrome with selective sparing of visuo-spatial function. Neurological signs consisted of primitive reflexes only and the electroencephalogram was normal. Single photon emission tomography revealed selective abnormal uptake in the anterior cerebral hemispheres. A family history of a similar form of dementia was present in 46% of cases.

Pathological analysis at necropsy of the brains of nine cases has revealed fronto-temporal atrophy. The microscopic changes were of large neuronal cell loss, astrocytic gliosis and abnormal astroglyosis affecting layer 3 of the cerebral cortex and especially in the frontal and temporal lobes and the corpus striatum. Neurofibrillar tangles and senile plaques were absent as were Pick cells and Lewy bodies.

Neurochemical analysis of cortical tissue revealed normal values for acetylcholine synthesis and choline acetyltransferase activity.

Dementia of frontal-lobe type can be distinguished from Alzheimer's disease neuropsychologically, on brain imaging and pathologically. It appears to be genetically determined, probably by autosomal dominant inheritance and is more common than has previously been supposed.

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LANGUAGE AND MEMORY PROCESSING IN SDAT, DEPRESSIVE PSEUDODEMENTIA, AND MAJOR DEPRESSION/UNIPOLAR. AV.O.B. Emery, R. Ando, Barlocher Medical School, Hanover, New Hampshire, 03756 USA and Case Western Reserve University School of Medicine, Cleveland, Ohio, 44106 USA.

The contribution to the definition of the structure of cognitive deficits in senile dementia Alzheimer's type (SDAT), language and memory processing were studied in 20 elderly persons with SDAT, 12 elderly with depressive pseudodementia, 20 elderly with major depression/unipolar, and 20 normal younger adults. Variables of age, sex, race, education, occupation, native language were controlled. Measures administered included the Western Aphasia Battery, Test for Syntactic Complexity, Chomsky Test of Syntax, Wechsler Memory Scale-Revised, and Katzman Test for Delayed Recall. Significance was determined by ANOVA, followed by Scheffe's test. The Omega Squared statistic was used to determine effect size of tests. Results indicate there are significant differences in patterns of deficits characterizing research groups. Greatest discrimination between SDAT and depressive pseudodementia on measures of memory occurs on Story Recall and Information. Greatest effect size between SDAT and major depression/unipolar occurs with Orientation and Information. Results from the language assessments suggest SDAT is best discriminated from depressive pseudodementia by two simple naming tasks requiring implicit interpretation, i.e., Responsive Speech and Sentence Completion. In contrast, SDAT is best differentiated from major depression/unipolar by the most complex semantic, syntactic, and meta-naming tasks, i.e., Reading Comprehension, Test for Syntactic Complexity, and Word Fluency. Serotonergic hypothesis of research results for the differential diagnosis between SDAT and depressive pseudodemences is discussed. The relation between SDAT and pseudodemencing illt is analyzed. The issue of nosological validity is addressed. Preliminary data pertaining to imipramine binding/central serotonergic function in a subset of the study participants are presented. The 'severe' category of SDAT appears to involve significant, large increases in platelet 5HT (F max = 12 p moles/107 platelets/min). Tentative implications of serotonergic function for language and memory processing in research populations are explored.
diagnoses, and 5.3 correct etiological diagnoses. In contrast, all syndromal and etiological diagnoses made by EVINCE were correct. Moreover, the disciplines displayed significant preferences for certain syndromes in patients. In contrast, clinicians more often than other disciplines. The experiments show that EVINCE can be considered a good replica of medical expertise on the subject matter. Because standardized diagnostic procedures are essential for research into etiology, pathogenesis and experimental interventions in dementia patients, especially in Alzheimer's disease, the ES EVINCE could be an important tool.

13 NEUROPSYCHOLOGICAL EVALUATION OF PATIENTS SUSPECTED OF EARLY ALZHEIMER'S DISEASE. EXPERIMENTAL STUDIES WITH AGE ASSOCIATED MEMORY IMPAIRMENT AND DYSPSYRIA.

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It appears to be very difficult - if at all possible - to detect Alzheimer's disease in stages in which no dementia is present. In the earlier stages (2 and 3 on the Global Deterioration Scale - Reisberg) cognitive all functions can be assessed but it is unknown whether these subjects may develop AD later in life. Longitudinal research is necessary to evaluate such a hypothesis. As a first step in a potential follow-up Alzheimers centre in Ma astricht, The Netherlands, we evaluated the nature of the cognitive dysfunctions in patients who are suspected to be in an early stage of primary degenerative dementia or to be at risk to be at an early stage of primary degenerative dementia or at a higher than normal risk to be at an early stage of primary degenerative dementia - a relatively unknown possibility. In the first experiment, 16 subjects aged 41 through 60 who were diagnosed as suffering from dysthymic disorder were compared to 16 healthy age matched controls. It appeared that intact deficits in secondary memory like acquisition and active retrieval from memory; in addition, memory consolidation and general speed of information processing were inferior in the patients. There were no deficits in primary memory such as in digit span and in block span. Identical findings were done in the second experiment in which 20 patients suffering from Age Associated Memory Impairment (AAMI, age 40-70 years) were compared to matched controls. A two years follow up of subjects from the 2 studies has been done. At the follow up assessment it appeared that the performance of patients without depression was inferior to that of patients with depression. The results of these studies are indicative of the relevance of neuropsychological contributions to early diagnosis of degenerative brain disease, especially AD. The sensitivity of cognitive neuropsychological methods enables an objective establishment of minor cognitive dysfunctions which are not evident with gross, psychometric tests and observation scales. The use of these measures for longitudinal research on early phases of Alzheimer's disease is recommended.

14 CLINICAL MARKERS OF EARLY ALZHEIMER'S DISEASE.

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We will review recent research seeking to identify or develop an early clinical marker for Alzheimers disease (AD), i.e., a reliable and valid measure that can be detected before the onset of cognitive symptoms or before these symptoms are severe enough to warrant a clinical diagnosis of AD. Such an early marker would be extremely useful for studying the early course and pathophysiology of AD, since the marker would enable researchers to select "enriched" study samples containing subjects at high risk for developing AD clinically over the subsequent years. Potential search directions in the search for early predictors of AD include study of specific patterns of mild cognitive deficit, use of imaging brain techniques to detect signs of early atrophic change, sensory and system deficits and patterns of electrophysiological abnormality. The status of these and other current approaches will be discussed.

15 PSYCHOPATHOLOGY AND FRONTAL LOBE INVOLVEMENT IN PRIMARY DEGENERATIVE AND VASCULAR DEMENTIA. 1. CLINICAL ASPECTS.

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The purpose of this study was to analyze the diagnostic significance of frontal lobe symptoms in dementia. These symptoms are most frequent in Pick's disease and frontal lobe dementia of non-Alzheimer type. Their presence in other dementias may complicate the diagnostic decision.

These clinical questions have been analysed in a longitudinal dementia study. The patients went through a neuropsychiatric investigation including EEG, regional cerebral blood flow (rCBF) measurement (133 Xe inhalation technique), and in most patients with progressive dementia and marked personality changes and other indications of frontal lobe dysfunction were selected for the study.

Results from five patient groups based on the neuropathological findings are presented. Group 1) Patients with Alzheimers disease (AD) with fronto predominant neuritic plaques. This group contained four cases with a mean age at death of 78 ± 7 years. They showed a typical Alzheimer type dementia with dysnesia, dysaphasia, dyspraxia and spatial disorientation. In addition to this, however, they showed aggressiveness, inadequate laughter, inappropriate behaviour and other frontal lobe symptoms already at an early stage of the disease. Group 2) Three cases with mainly fronto bilateral selective incomplete white matter infarction (SWI). The mean age at death was 72 ± 3 years. The patients showed progressive personality changes with an irritable and unrestrained behaviour in combination with memory failure and gait disturbances. Psychotic reactions with visual hallucinations were found in two cases and the differential diagnosis against nonorganic mental diseases was difficult. Blood pressure was generally low in this group (mean blood pressure 96 ± 12 mm Hg). Group 3) Binswanger's disease. Three cases with a mean age at death of 74 ± 7 years. The dementia was progressive with episodic deterioration and episodic phenomena. The frontal lobe involvement was mainly indicated by emotional symptoms such as euphoria and apathy. Vascular dementia was indicated by the clinical features but differential diagnosis against AD was difficult. Group 4) contained two unique cases with frontal vascular lesions. Group 5) contained sixteen cases of degenerative frontal lobe dementia of non-Alzheimer type (FLD).

In conclusion, Symptoms indicating frontal lobe damage are common in both vascular and primary degenerative dementias. Differential diagnosis of dementia has to consider the type and severity of the frontal lobe symptoms, the time of debut, and the combination with other psychiatric and neurological symptoms. Differential diagnosis against nonorganic mental diseases may be difficult especially in dementia with duration over 15-20 years, as was the case in several of our patients.

16 A BRIEF ASSESSMENT BATTERY FOR THE DIAGNOSIS OF PROBABLY ALZHEIMER'S DISEASE.


The NINCDS-ADRD A diagnostic criteria for Alzheimer's disease have received wide acceptance in research protocols. Studies examining their validity have been promising. Use of these criteria, however, necessitates lengthy and costly assessment of patients. The purpose of this study was to determine whether a reduced battery of 10 clinical measures could produce as accurate a discrimination as the full battery. Our sample consisted of 197 patients who had been selected for the study.

17 INCREASED SERUM INSULIN-LIKE GROWTH FACTOR-I CONCENTRATIONS IN INSTITUTIONALIZED WOMEN WITH ALZHEIMER'S DISEASE. *S.H. Ferris, G. Snow, A.A. Spindler, JF Nichols, JR Ramsdell, and MJ Rennell. Dept. of Internal Medicine, University of California San Diego, and the Dept. of Nutrition University of Maine, Orono Maine 04473, USA.

Variable changes in growth hormone (GH) concentration have been reported in Alzheimer's patients (Alz). Insulin-like growth factor-I...