

20 - Disorders of memory

Disorders of memory

© SPM Course □ Other regions: In most cases of memory loss procedural memory is intact. A deficit in procedural memory with preservation of declarative memory may be seen in persons with Parkinson's disease, in whom dopaminergic neurons of the nigrostriatal tract degenerate. Though speculative, cerebellum, striatum, amygdala and certain parts of the neocortex (including motor area) are thought to be involved in non-declarative procedural memory storage. The anterior temporal lobe is the key area for semantic memory. □ Long-term potentiation: Strengthening of the connection between two neurons on repeated communication is called long-term potentiation - LTP. This may be the neuronal basis of memory. It is mediated by NMDA mediated Ca^{2+} entry in glutamate neurons. Learning increases branching and synapse formation and may also influence neurogenesis.

Disorders of memory □ Amnesia is a term used either for pure memory deficits (mostly episodic) or cognitive deficits where memory loss is predominant and not congruent with the level of loss in other domains. □ Generally both anterograde and retrograde memory loss occur in parallel, such as in Alzheimer's disease or head injury. □ Relatively pure anterograde amnesia may be seen when there is hippocampal damage, e.g. herpes simplex encephalitis, focal temporal lobe tumours, or infarction. □ Confabulation—for example, in Korsakoff's syndrome—might be grandiose or delusional, but more often involves the misordering and fusion of real memories which end up being retrieved out of context. □ A transient amnesic syndrome with pronounced anterograde, and variable retrograde, amnesia is seen in transient global amnesia (TGA), while “memory lacunes”, and repeated brief episodes of memory loss suggest transient epileptic amnesia (TEA). □ Ribot's Law of retrograde amnesia: ‘The dissolution of memory is inversely related to the recency of the event’. Recent memories are more likely to be lost than the more remote memories in organic amnesia (not always the case though). □ Semantic dementia: It is a variant of frontotemporal dementia. Patients with semantic breakdown typically complain of loss of words. Vocabulary diminishes, and patients use substitute words such as “thing”. There is a parallel impairment in appreciating the meaning of individual words, which first involves infrequent or unusual words. □ A word finding difficulty is common in both anxiety and aging, but variable and not associated with impaired comprehension. This is in stark contrast to the anomia in semantic dementia which Anterograde amnesia Forgetting newly encountered information from the time of a lesion. Presents as forgetfulness regarding appointments, losing items around the home, inability to remember conversation leading to repeated questions etc. Retrograde amnesia Loss of memory of past events that happened before the lesion was sustained. Presents as loss of memory of past events such as jobs, holidays, not able to remember the topography of a route and getting lost.

© SPMM Course is relentlessly progressive and associated with atrophy of the anterior temporal lobe, usually on the left. □ Working memory deficits can present as lapses in concentration and attention e.g. losing one's train of thought, inability to process a complex task as the components are not retained long enough in memory to be processed. Basal ganglia and white matter diseases may present with predominantly working memory deficits. □ Dissociative amnesia is not an organic syndrome, but centred on the loss of memory of important recent events that is partial, patchy and selective. It can occur as a part of dissociative fugue. The characters of dissociative amnesia are episodic memory loss (retrograde only with no anterograde deficits) for events that happened in a discrete period of time from minutes to years. In dissociative amnesia, the problem is not inefficient retrieval but the strikingly complete unavailability of memories which were formed normally and were previously accessible. The forgotten events are generally traumatic or stressful.

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