Name of disorder: Frontotemporal Dementia
Title: Frontotemporal Dementia: A spectrum of conditions
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Frontotemporal dementia (FTD) is a progressive degenerative neurological condition. It is the second most common form of dementia after Alzheimer's disease (AD), representing up to 20% of non-aged dementia cases. Symptoms usually occur earlier than AD, beginning from around 50-60 years of age. Once diagnosed, people with FTD survive for 6-8 years, although this is highly variable.

The primary pathological feature of FTD is the degeneration and shrinking of the frontal (front) and temporal (side) lobes of the brain, due to the failure of brain cells in these regions. This shrinking is termed frontotemporal lobar degeneration and can be observed in patients by an MRI scan. Several genetic factors have been associated with FTD giving rise to familial hereditary disease, however most cases of FTD occur sporadically with no known cause.

FTD actually describes a group of conditions that can be defined based on initial symptoms. The three main symptom types are: i) behavioural variant, with personality disruptions including altered social conduct, emotional disturbances, and impaired ability to focus; ii) primary progressive aphasia, where patients can have difficulties with speech such as difficulty forming words but comprehension is unaffected (aphasia) or alternatively can form speech but have difficulty comprehending words (semantic dementia); and finally iii) FTD movement disorders involving disregulated automatic, involuntary movements. As the disease progresses the various symptoms progressively overlap, hence they are grouped together as FTD. FTD also commonly causes progressive loss of executive functions, such as planning and organizing, and a feeling of apathy.

FTD can also be divided into subtypes based on disruption of specific proteins in the brain, which can be detected during post-mortem analysis. For example, Pick's disease is a subtype of FTD involving disruption of the protein Tau. More recently, the protein Tar DNA-binding protein 43 (TDP-43) has been found to be disrupted in the brains of about 40% of FTD patients. Amyotrophic lateral sclerosis (ALS) is another progressive degenerative neurological condition, and is also associated with disrupted TDP-43 in affected regions of the brain and spinal cord. ALS is a motor neuron disease, characterized by the failure of brain cells controlling voluntary body movements, leading to paralysis and death within 3-5 years of diagnosis. It appears that these two conditions are related, with some cases of FTD exhibiting movement symptoms consistent with ALS, and some ALS cases presenting with dementia symptoms. Therefore, it has been suggested that FTD involving TDP-43 disruptions and ALS cases exist on a spectrum of disorders in which the disruption of TDP-43 is a central feature. However, it is still unknown what causes TDP-43 to become disrupted, and exactly how this disruption is involved in the loss of brain cell function, whether TDP-43 disruption is a causative event or a consequence of the disease.

It can be difficult to distinguish the symptoms of FTD from the more common Alzheimer's disease, however there are several subtle differences:

- Memory impairments are more common initially in AD than FTD, while behavioural changes are more common early in FTD than AD.
- FTD generally has earlier onset than AD.
- Deficits in speech and word comprehension are common features of FTD but not AD.
- Problems with spatial orientation and the occurrence of hallucinations and delusions are more common in AD than FTD.
- Apathy is more common in FTD than AD.

There are no specific treatments for FTD. Behavioural symptoms can be treated with anti-depressant or anti-psychotic medications, such as selective serotonin reuptake inhibitors to control compulsive behaviours. However, because the cause/s of FTD are unknown, there are no treatments that target the underlying disease process. Research into the involvement and roles of disrupted proteins may uncover targets for new therapeutics.