

Difference Between CJD and VCJD

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Key Difference – CJD vs VCJD

Prion diseases are transmissible neurodegenerative diseases with a long incubation period caused by the accumulation of misfolded native protein PrPc. Creutzfeldt-Jacob syndrome is the commonest prion disease in humans and can be seen in various forms. **Variant Creutzfeldt-Jacob syndrome is one such form of Creutzfeldt-Jacob syndrome which mostly affects young people in their late twenties. Usually, the other forms of CJD affect elderly people who are above 50 years of age.** Apart from this difference in the population who are at risk of developing the disease, there is no other significant difference between CJD and VCJD.

What is CJD?

Creutzfeldt-Jacob syndrome is the commonest prion disease in humans and can be seen in various forms such as sporadic, iatrogenic, familial and variant.

Sporadic CJD

This is the most frequently encountered form of CJD in the clinical setup. People who are above 50 years of age are more likely to be affected by this condition, and the incidence is approximately about 1 in a million. The somatic mutations in the PRNP gene are believed to be the cause of sporadic CJD. Death within six months is inevitable due to rapidly progressive dementia. Sporadic CJD should be suspected whenever a patient shows signs of rapid cognitive decline. Presence of myoclonus is another clinical clue.

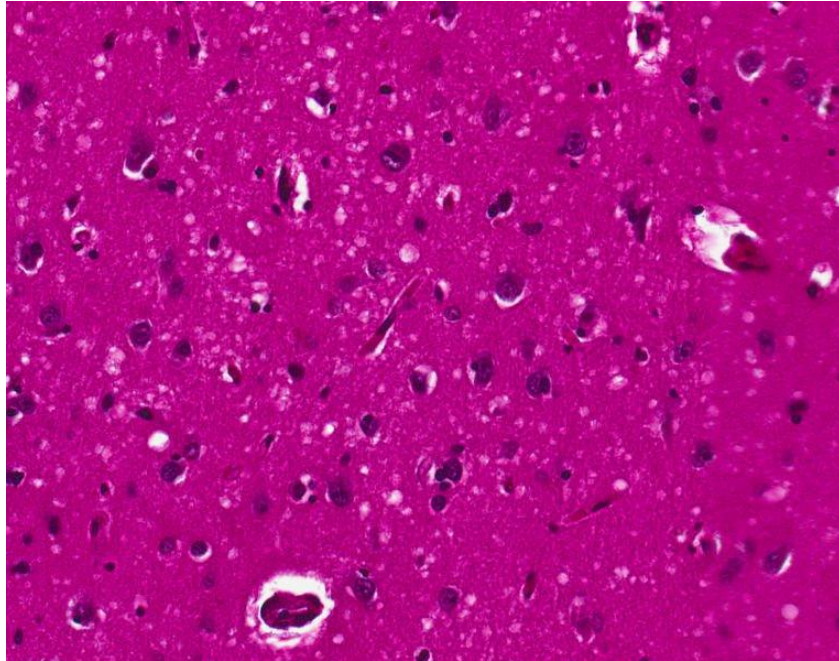


Figure 01: Spongiform Change in CJD

Iatrogenic CJD

As the name suggests, iatrogenic CJD is transmitted through medical and surgical interventions such as the use of surgical instruments in neurosurgeries (prions are resistant to sterilization), transplant materials and the infusion of cadaveric pituitary-derived growth hormone taken from patients with CJD or presymptomatic CJD. Iatrogenic CJD has an extremely long incubation period.

Familial CJD

This can be considered as the rarest form of CJD and is due to the congenital mutations in the PRNP gene.

What is VCJD?

Variant Creutzfeldt-Jacob syndrome or VCJD was first identified in the UK in 1995. Unlike the sporadic form of the disease, VCJD affects much younger people in their late 20s.

Early symptoms include neuropsychiatric manifestations followed by ataxia and [dementia](#) with myoclonus or chorea. VCJD has a long course of the disease,

and consequently, there is a long gap between the infection and the appearance of clinical features.

The diagnosis can be confirmed by tonsillar biopsies and very recently a sensitive blood test was also introduced.

Both VCJD and Bovine Spongiform Encephalitis are caused by the same strain of prions. Transmission of the disease can also happen through blood transfusion.

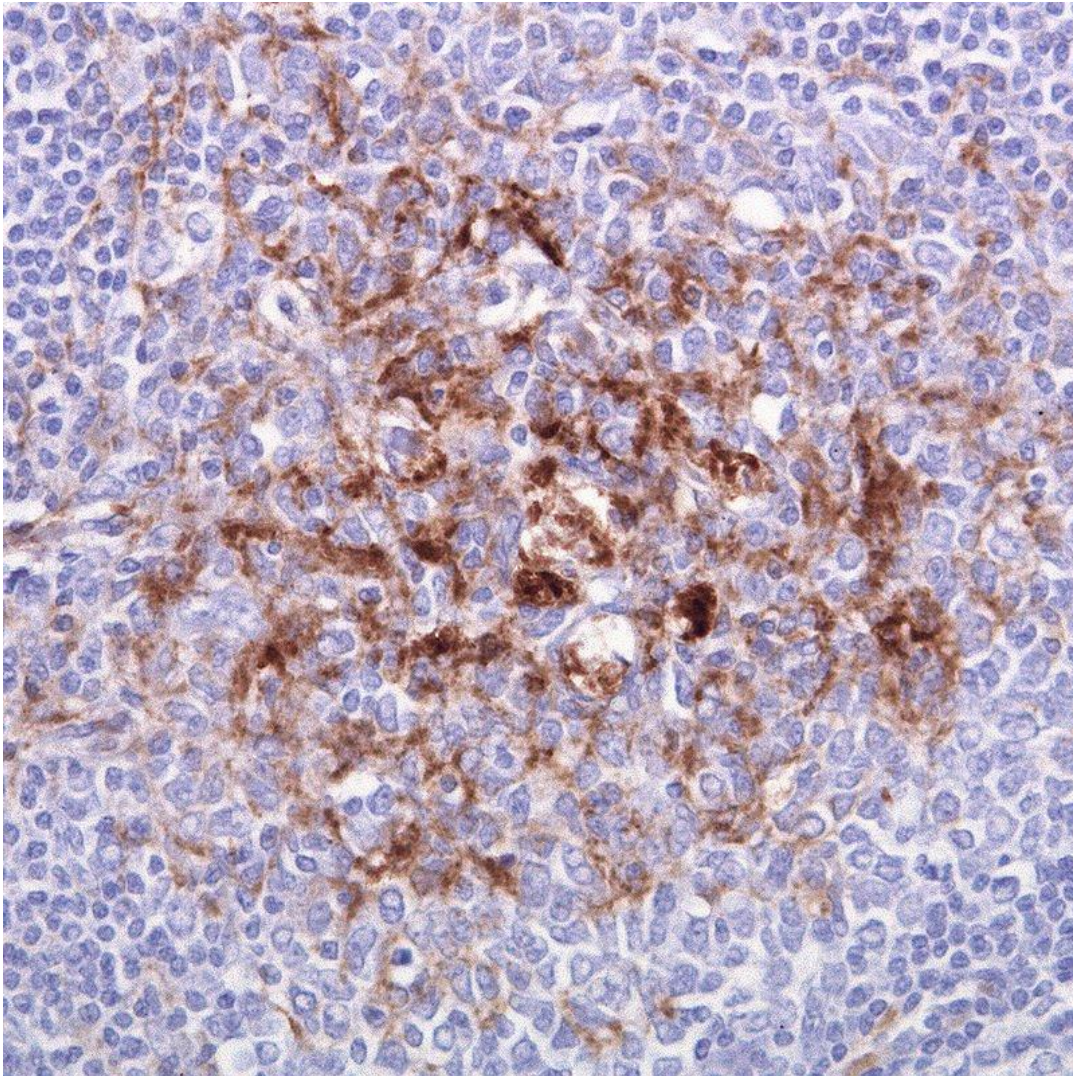


Figure 02: Tonsil biopsy in VCJD

Treatment of CJD and VCJD

There is no cure for any of the forms of CJD. The management aims at alleviating the symptoms and making the patient comfortable as much as possible. Analgesics can be given to relieve the pain, and [antiepileptic](#) drugs such as clonazepam are useful in controlling chorea and myoclonus.

What are the Similarities Between Other Forms of CJD and VCJD?

- All the forms of CJD including VCJD are caused by the prions.
- All the forms have similar clinical manifestations.
- None of the different varieties of CJD is curable and symptomatic management to minimize the patient's suffering is the only thing that can be done.

What is the Difference Between CJD and VCJD?

Since VCJD is a form of CJD, the following section discusses the difference between VCJD and other forms of CJD.

CJD vs VCJD	
CJD is the commonest prion disease in the humans and can be seen in various forms.	VCJD (Variant Creutzfeldt-Jacob syndrome) is one form of CJD.
Age Limit of Patients	
Elderly people above 50 years of age are often affected.	Young people in their late twenties are the usual victims of VCJD.
Incubation Period	
Sporadic CJD has a long incubation period; familial and iatrogenic forms have a relatively short incubation period.	VCJD always has a short incubation period.

Summary – CJD vs VCJD

Creutzfeldt-Jacob syndrome is a neurodegenerative disease caused by a certain type of proteins called the prions. There are different varieties of this disease as sporadic, iatrogenic and etc. Variant Creutzfeldt-Jacob syndrome is one such variety of the main clinical syndrome. But unlike the forms of the disease which most often affect elderly people who are above 50 years of age, VCJD affects younger people in their late twenties. This is the major difference between CJD and VCJD.

References:

1. Kumar, Parveen J., and Michael L. Clark. Kumar & Clark clinical medicine. Edinburgh: W.B. Saunders, 2009.

Image Courtesy:

2. “SpongiformChangeCJD” By DRdoubleB – Own work ([CC BY-SA 3.0](#)) via [Commons Wikimedia](#)

1. “VCJD Tonsil” By Sbrandner – Own work (GFDL) via [Commons Wikimedia](#)

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