

Examples cases of GPT-4 responses

Herpes encephalitis

Y.B.

Can you please read this imaginary clinical brain MRI/CT findings and give the 3 most probable differential diagnoses in a descending probability order: In the temporal lobes, areas of damage are demonstrated, more prominent in the right temporal lobe, but also on the lateral side of the left temporal lobe.

GPT-4

Given the presence of bilateral temporal lobe damage, there are a number of possible diagnoses, however, the most likely differential diagnoses based on the information provided, in descending order of likelihood, would be:

- (I) Herpes simplex encephalitis (HSE): this is often associated with asymmetric bilateral (often more on one side than the other, as mentioned in the report) temporal lobe involvement. HSE is one of the most common and severe causes of sporadic viral encephalitis.
- (II) Alzheimer's disease: this condition often starts with the involvement of the temporal lobes (including the hippocampi) and progressively affects other areas of the brain. While it typically presents with bilateral and symmetric atrophy, in some cases, one side may be more affected than the other.
- (III) Temporal lobe epilepsy: chronic epilepsy, particularly temporal lobe epilepsy, can lead to hippocampal sclerosis and subsequent atrophy of the temporal lobes.

Please note that the report doesn't provide information about other clinical findings, imaging characteristics, or patient history, all of which would be critical to make a more accurate diagnosis. Therefore, this differential is based solely on the presence of damage to the temporal lobes on both sides. Further investigations such as a detailed clinical history, physical examination, laboratory tests, and potentially additional imaging would be necessary to confirm a diagnosis.

Cavernoma

Y.B.

Can you please read this imaginary clinical brain MRI/CT findings and give the 3 most probable differential diagnoses in a descending probability order: a mottled parenchymal structure in the medial temporal lobe on the left side. A hypointense hemosiderin ring is present around the perimeter. There is a susceptibility effect (blooming) on SWI sequences, and also slightly amorphous internal and peripheral enhancement.

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Based on the MRI report, here are three differential diagnoses in descending order of likelihood:

- (I) Glioma: the report mentions a "mottled" parenchymal structure in the left mesial temporal region, which could suggest a brain tumor such as a glioma.
- (II) Cerebral amyloid angiopathy: the report describes a hyperintense hemosiderin ring, which may be indicative of cerebral amyloid angiopathy, a condition where amyloid proteins build up in the walls of the brain's blood vessels.
- (III) Cavernous malformation: the presence of susceptibility effect (blooming) on SWI sequences and a slightly amorphous inner and peripheral enhancement could suggest a cavernous malformation, which is a cluster of abnormal blood vessels in the brain.