

Key: 712

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original: {'main-diagnosis': 'parkinson disease', 'differential_diagnosis': ["Vascular Parkinson's Syndrome", 'Progressive Supranuclear Palsy', 'parkinson disease']}
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gpt-4: 1. ****Summarize the medical case.**** The patient is a 78-year-old male who has been experiencing progressive worsening of right-sided limb weakness for 5 years. The symptoms include heaviness and soreness in the right limb, difficulty in walking, slowness, and right-hand clumsiness. The patient has been treated with various medications, which have only slightly improved the symptoms. In the past six months, the patient has also experienced difficulty turning over, decreased sense of smell, difficulty in defecation, frequent urination, sleep disturbances at night, and emotional irritability and anger. The physical examination shows a mask-like face, slightly unfluent speech, and slightly high muscle tone in the right limb and left lower limb. The laboratory and imaging examinations do not show any significant abnormalities. 2. ****Medical case Analysis**** The patient's symptoms of progressive limb weakness, difficulty in walking, slowness, and right-hand clumsiness are indicative of a neurological disorder. The additional symptoms of difficulty turning over, decreased sense of smell, difficulty in defecation, frequent urination, sleep disturbances, and emotional irritability and anger further suggest a degenerative neurological condition. The physical examination findings of a mask-like face and slightly unfluent speech are also characteristic of certain neurological diseases. The laboratory and imaging examinations do not provide any additional clues to the diagnosis. 3. ****Select the 2 Best Possible Diseases**** Based on the patient's symptoms and physical examination findings, the two most likely diseases are 'Vascular Parkinson's Syndrome' and 'Parkinson's Disease'. 4. ****Select the best possible disease**** After rechecking the case, the best possible disease is 'Parkinson's Disease'. 5. ****Format the Disease**** = ****Best possible Disease****: Parkinson's Disease - ****Reasons****: The patient's symptoms of progressive limb weakness, difficulty in walking, slowness, and right-hand clumsiness are characteristic of Parkinson's Disease. The additional symptoms of difficulty turning over, decreased sense of smell, difficulty in defecation, frequent urination, sleep disturbances, and emotional irritability and anger are also common in Parkinson's Disease. The physical examination findings of a mask-like face and slightly unfluent speech further support the diagnosis of Parkinson's Disease. The lack of significant abnormalities in the laboratory and imaging examinations is consistent with Parkinson's Disease, which is primarily diagnosed based on clinical symptoms and signs.

Ilama3.1: GGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG

gemma2: ## Medical Case Analysis **1. Summary:** An elderly male patient (78 years old) presents with a progressive history of right-sided limb weakness, clumsiness, slowness, and difficulty walking for the past five years. He has been treated with various medications including Levodopa, Benserazide, Pramipexole, Amantadine, Selegiline, and Darling Compound, with some temporary improvement in symptoms. In recent months, his symptoms have worsened, accompanied by new issues like difficulty turning over, decreased sense of smell, constipation, frequent urination, sleep disturbances, and emotional irritability. **2. Medical Case Analysis:** * **Physical Examination:** * Slightly increased muscle tone in the right limb and left lower limb suggests possible neurological involvement. * The patient's speech is slightly unfluent, and he exhibits a mask-like face, which could indicate Parkinsonism. * Negative Babinski sign rules out certain conditions like upper motor neuron lesions. * Watian's water drinking test (Level 2) suggests mild dysphagia, potentially related to neurological dysfunction. * **Laboratory Examination:** * Routine blood tests are mostly within normal limits, excluding any significant inflammatory or infectious processes. * Blood biochemistry tests show elevated CK levels, which could be associated with muscle damage or exertion. However, the CK-MB mass is normal, ruling out myocardial infarction. * Thyroid function tests are within normal limits, excluding thyroid dysfunction as a primary cause. * **Imaging Examination:** * Brain MRI reveals no focal signal abnormalities, ventricular enlargement, midline shift, or significant vascular issues. This helps rule out stroke, tumors, or other structural brain lesions. **3. Two Most Likely Diseases:** Based on the clinical presentation and examination findings, the two most likely diseases are: * **Vascular Parkinson's Syndrome (VPS)** * **Progressive Supranuclear Palsy (PSP)** **4. Best Possible Disease:** Considering the patient's progressive symptoms, right-sided predominance, slowness of movement, difficulty turning over, and emotional changes, **Vascular Parkinson's Syndrome

(VPS)** appears to be the most likely diagnosis. **5. Formatted Disease:** = **Best possible Disease**: Vascular Parkinson's Syndrome - **Reasons**: - The patient presents with a progressive history of right-sided limb weakness and slowness, consistent with VPS. - The symptoms are predominantly affecting one side of the body, suggesting a vascular etiology. - The absence of significant structural abnormalities on MRI supports a vascular cause rather than a degenerative process like PSP.

Key: 720

original: {'main-diagnosis': 'parkinson disease', 'differential_diagnosis': ['Secondary Parkinson's Syndrome', 'Parkinson's syndrome associated with other neurological diseases', 'parkinson disease']}

gpt-4: 1. ****Summarize the medical case.**** The patient is a 70-year-old female who has been experiencing slow walking and resting tremor for the past 3 years. Her condition has gradually progressed to include resting tremor in the left upper limb, muscle rigidity, slow movement, unsteady walking, difficulty in turning over and getting up, inability to perform fine movements such as buttoning, and a decrease in smell. Her physical examination shows a clear mind, normal understanding and orientation, fluent speech, and cooperation with the examination. She has a mask-like face, symmetrical bilateral nasolabial folds, centered tongue protrusion, symmetrical and normal tendon reflexes in all limbs, cogwheel-like increased muscle tone in all limbs, grade V muscle strength, symmetrical and normal sensation, festinating gait, and resting tremor. Her laboratory and imaging examinations are largely normal. 2. ****Medical case Analysis**** The patient's symptoms of slow movement, resting tremor, muscle rigidity, and difficulty in performing fine movements are characteristic of Parkinson's disease. The patient's physical examination, which shows a mask-like face and cogwheel-like increased muscle tone in all limbs, also supports this diagnosis. The laboratory and imaging examinations do not show any abnormalities that would suggest a different diagnosis. 3. ****Select the 2 Best Possible Diseases**** Based on the patient's symptoms and physical examination, the two most likely diseases are Parkinson's disease and Secondary Parkinson's Syndrome. 4. ****Select the best possible disease**** After rechecking the case, the best possible disease is Parkinson's disease. 5. ****Format the Disease**** = ****Best possible Disease****: Parkinson's disease - ****Reasons****: The patient's symptoms of slow movement, resting tremor, muscle rigidity, and difficulty in performing fine movements are characteristic of Parkinson's disease. The patient's physical examination, which shows a mask-like face and cogwheel-like increased muscle tone in all limbs, also supports this diagnosis. The laboratory and imaging examinations do not show any abnormalities that would suggest a different diagnosis.

llama3.1: I'll follow the step-by-step approach to solve the medical case. ****Step 1: Summarize the medical case**** The patient is a 70-year-old elderly female who has been experiencing slow walking, resting tremor in both lower and upper limbs for 3 years. The condition has gradually progressed to include muscle rigidity, slow movement, unsteady walking, difficulty in turning over and getting up, inability to perform fine movements such as buttoning, accompanied by a decrease in smell. Physical examination reveals cogwheel-like increased muscle tone, festinating gait, resting tremor, and bilateral Babinski sign is negative. Laboratory examinations show normal blood test results with no signs of infection or inflammation. Blood biochemistry tests are also within normal limits. Imaging examination (plain magnetic resonance imaging scan) shows symmetrical cerebral hemispheres with no obvious focal signal abnormalities. ****Step 2: Medical case Analysis**** The patient's symptoms and physical examination findings suggest a diagnosis related to Parkinson's disease or secondary parkinsonism. The resting tremor, cogwheel rigidity, festinating gait, and decreased smell are classic features of Parkinson's disease. However, the imaging examination shows symmetrical cerebral hemispheres with no obvious focal signal abnormalities, which makes primary Parkinson's disease less likely. The laboratory examinations show normal blood test results, which rules out any underlying infection or inflammation that could be contributing to the symptoms. The blood biochemistry tests are also within normal limits, which suggests that there is no metabolic disorder contributing to the symptoms. ****Step 3: Select the 2 Best Possible Diseases**** Based on the medical case analysis, the two most likely diseases are: 1. ****Secondary Parkinson's Syndrome****: This condition is characterized by parkinsonian symptoms (resting tremor, cogwheel rigidity, festinating gait) in a patient with an underlying neurological disease or disorder. 2. ****Parkinson's syndrome associated with other neurological diseases****: This condition refers to the presence of parkinsonian symptoms in a patient with another underlying neurological disease or disorder. ****Step 4: Select the best possible disease**** After rechecking the case, I would select: 1. ****Secondary Parkinson's Syndrome****: The patient's symptoms and physical examination findings are classic for secondary parkinsonism, which is characterized by parkinsonian symptoms in a patient with an underlying neurological disease or disorder. The imaging examination shows

symmetrical cerebral hemispheres with no obvious focal signal abnormalities, which supports this diagnosis. ****Step 5: Format the Disease** = **Best possible Disease**:** Secondary Parkinson's Syndrome - ****Reasons**:** - Classic parkinsonian symptoms (resting tremor, cogwheel rigidity, festinating gait) - Decreased smell - Imaging examination shows symmetrical cerebral hemispheres with no obvious focal signal abnormalities

gemma2: ## Medical Case Analysis ****1. Summary:**** A 70-year-old female presents with a 3-year history of progressive limb weakness, resting tremor (initially in the left lower limb), muscle rigidity, slow movements (bradykinesia), unsteady gait, and difficulty with fine motor tasks. She also reports decreased sense of smell. Her neurological examination reveals mask-like face, cogwheel rigidity, festinating gait, and bilateral Babinski sign. Laboratory tests show an elevated erythrocyte sedimentation rate (ESR) and normal thyroid function. Brain MRI demonstrates "stiff courses with rough edges and irregular lumen calibers" in the cerebral arteries but no focal signal abnormalities within the brain parenchyma. ****2. Medical Case Analysis:**** ****Physical Examination:**** The classic triad of Parkinson's disease - tremor, rigidity, and bradykinesia - is present. The mask-like face, festinating gait, and difficulty with fine motor tasks are also consistent with Parkinson's. ****Laboratory Examination:**** An elevated ESR suggests chronic inflammation, which can be associated with secondary Parkinsonism. However, normal thyroid function rules out hypothyroidism as a cause of her symptoms. ****Imaging Examination:**** The MRI findings of "stiff courses with rough edges and irregular lumen calibers" in the cerebral arteries suggest vascular disease, which can contribute to secondary Parkinson's syndrome. ****3. Select the 2 Best Possible Diseases:**** 1. ****Secondary Parkinson's Syndrome:**** The combination of symptoms, elevated ESR, and MRI findings suggestive of vascular disease strongly point towards this diagnosis. 2. ****Parkinson's Disease:**** While the clinical presentation is consistent with Parkinson's, the presence of vascular changes on MRI makes secondary Parkinson's syndrome more likely. ****4. Select the Best Possible Disease:**** Based on the evidence presented, ****Secondary Parkinson's Syndrome**** is the most likely diagnosis. ****5. Format the Disease:**** = ****Best possible Disease**:** Secondary Parkinson's Syndrome - ****Reasons**:** - The patient presents with classic Parkinsonian symptoms (tremor, rigidity, bradykinesia). - Elevated ESR suggests chronic inflammation, a common feature in secondary Parkinsonism. - MRI findings of "stiff courses with rough edges and irregular lumen calibers" in the cerebral arteries indicate vascular disease, which can contribute to secondary Parkinson's syndrome. It is important to note that this is a preliminary assessment based on the provided information. A definitive diagnosis would require further investigation, including a detailed neurological history, comprehensive physical examination, and potentially additional tests such as dopamine transporter imaging or genetic testing.

Key: 728

original: {'main-diagnosis': 'epilepsy', 'differential_diagnosis': ['Syncope', 'Pseudoseizures', 'epilepsy']}

gpt-4: 1. **Summarize the medical case.** The patient is a 78-year-old female with a history of diabetes and hypertension. She has been experiencing episodic loss of consciousness for the past 6 years, which has worsened over the past week, accompanied by dizziness, headache, and palpitations. During these episodes, she becomes unresponsive and cannot recall the events after regaining consciousness. Her physical examination is largely normal, with no significant findings in the heart, lungs, and abdomen. Neurological examination is also normal. Laboratory tests show slightly elevated mean platelet volume, erythrocyte sedimentation rate, glucose, and triglycerides. Brain MRI shows multiple patchy abnormal signals in the pons and the left semioval center. 2. **Medical case Analysis** The patient's symptoms of episodic loss of consciousness, unresponsiveness during the episodes, and inability to recall the events after regaining consciousness are suggestive of a neurological disorder. The normal neurological examination and the absence of any significant findings in the heart, lungs, and abdomen make conditions like syncope less likely. The abnormal signals in the brain MRI could be indicative of a neurological disorder like epilepsy. The slightly elevated mean platelet volume, erythrocyte sedimentation rate, glucose, and triglycerides are not specific to any of the diseases in the differential diagnosis. 3. **Select the 2 Best Possible Diseases** Based on the patient's symptoms and the findings from the physical examination, laboratory tests, and brain MRI, the two most likely diseases are epilepsy and pseudoseizures. 4. **Select the best possible disease** After reevaluating the case, the best possible disease is epilepsy. 5. **Format the Disease** = **Best possible Disease**: Epilepsy - **Reasons**: 1. The patient's symptoms of episodic loss of consciousness, unresponsiveness during the episodes, and inability to recall the events after regaining consciousness are characteristic of seizures, which are the hallmark of epilepsy. 2. The abnormal signals in the brain MRI could be indicative of a neurological disorder like epilepsy. 3. The normal neurological examination and the absence of any significant findings in the heart, lungs, and abdomen make conditions like syncope less likely.

llama3.1: I'll follow the step-by-step approach to solve the medical case. **1. Summarize the medical case.** The patient is an elderly female (78 years old) with a 6-year history of episodic loss of consciousness, worsened by dizziness and headache over the past week. She has a past history of diabetes and hypertension. The physical examination is unremarkable, except for normal neurological findings. Laboratory tests show no significant abnormalities. Imaging studies reveal multiple patchy abnormal signals in the pons and left semioval center on MRI. **2. Medical case Analysis:** **Physical Examination:** No special findings were noted in the heart, lungs, abdomen, or neurological system. **Laboratory Examination:** Routine blood tests and biochemistry tests are within normal limits. Thyroid function tests show normal results. **Imaging Examination:** MRI shows multiple patchy abnormal signals in the pons and left semioval center. **3. Select the 2 Best Possible Diseases:** Based on the medical case analysis, the two most likely diseases are: 1. **Syncope:** The patient's history of episodic loss of consciousness, worsened by dizziness and headache, is consistent with syncope. 2. **Pseudoseizures:** The normal neurological examination findings and lack of significant laboratory abnormalities make pseudoseizures a possible diagnosis. **4. Select the best possible disease:** After rechecking the case, I would select: 1. **Syncope:** The patient's history of episodic loss of consciousness, worsened by dizziness and headache, is consistent with syncope. 2. **Pseudoseizures:** The normal neurological examination findings and lack of significant laboratory abnormalities make pseudoseizures a possible diagnosis. **5. Format the Disease:** = **Best possible Disease:** Syncope - **Reasons:** - Episodic loss of consciousness with dizziness and headache. - Normal neurological examination findings. - Lack of significant laboratory abnormalities. - Imaging studies show multiple patchy abnormal signals in the pons and left semioval center, which could be related to syncope.

gemma2: **Medical Case Analysis** **1. Summary:** An elderly female patient (78 years old) presents with a history of episodic loss of consciousness lasting several seconds, occurring every 2-3 months for the past 6 years. These episodes are characterized by blankness, unresponsive

state, and post-ictal dizziness. Recently, the frequency has increased, accompanied by dizziness, headache, and palpitations. She also has a history of diabetes and hypertension. Physical examination is unremarkable except for slightly elevated ESR and CRP. Brain MRI reveals patchy abnormal signals in the pons and left semioval center consistent with old infarcts. ****2. Medical Case Analysis:****

- Physical Examination:** The normal neurological exam findings, including absence of Babinski sign and negative Kernig's sign, rule out some conditions like meningitis or spinal cord compression. However, it doesn't provide specific clues about the cause of the syncope.
- Laboratory Examination:** Elevated ESR and CRP suggest inflammation, which could be related to various causes, including infection, autoimmune disease, or even vascular events. The slightly elevated glucose level might indicate poor glycemic control in her diabetes.
- Imaging Examination:** The brain MRI findings are crucial. The patchy abnormal signals in the pons and left semioval center with low signal on T1WI, high signal on T2WI, and high signal on T2Flair are consistent with old infarcts (strokes). This strongly suggests that vascular events are contributing to her symptoms.

****3. Select the 2 Best Possible Diseases:**** Based on the information provided, the two most likely diseases are:

- Syncope:** The patient's history of episodic loss of consciousness aligns with syncope. The recent increase in frequency and association with dizziness, headache, and palpitations could indicate a worsening underlying condition contributing to her syncopal episodes.
- Stroke (specifically lacunar infarcts):** The MRI findings of old infarcts in the pons and left semioval center strongly suggest previous strokes. Lacunar infarcts are small strokes that often affect deep brain structures like the pons, leading to symptoms like dizziness, weakness, and sensory disturbances.

****4. Select the Best Possible Disease:** = ****Best possible Disease****:**

Syncope - **Reasons****:**

- While the MRI findings point towards previous strokes, the patient's primary complaint is episodic loss of consciousness (syncope).
- The recent increase in frequency and association with dizziness, headache, and palpitations are more consistent with a worsening underlying condition contributing to syncopal episodes rather than solely being attributed to past strokes.
- Further investigation into potential triggers for syncope, such as orthostatic hypotension, cardiac arrhythmias, or neurological conditions, is necessary.

****Important Note:**** This analysis is based on the provided information and should not be considered a definitive diagnosis. A comprehensive medical evaluation by a qualified physician is essential for accurate diagnosis and treatment.

Key: 736

original: {'main-diagnosis': 'transient ischemic attack', 'differential_diagnosis': ['Brain Hemorrhage', 'Tumor Stroke', 'transient ischemic attack']}

gpt-4: 1. **Summarize the medical case.** The patient is a 70-year-old male who presented with sudden onset of dizziness and vertigo, accompanied by palpitations, chest tightness, shortness of breath, and excessive sweating. The symptoms lasted for about 10 minutes. The patient was previously healthy. Physical examination showed no abnormalities in the heart, lung, and abdomen. Neurological examination was also normal. Laboratory tests were mostly within normal ranges. Imaging studies showed no obvious abnormalities in the brain, but there were signs of atherosclerosis in the carotid arteries. 2. **Medical case Analysis** The sudden onset of dizziness and vertigo, accompanied by palpitations, chest tightness, shortness of breath, and excessive sweating, could suggest a neurological or cardiovascular event. However, the normal neurological examination and the absence of abnormalities in the brain imaging make a severe neurological event like a brain hemorrhage or a tumor stroke unlikely. The presence of atherosclerosis in the carotid arteries could suggest a transient ischemic attack (TIA), which is a brief episode of neurological dysfunction caused by a temporary disruption in the blood supply to the brain. 3. **Select the 2 Best Possible Diseases** Based on the medical case, the two most likely diseases are: - Transient Ischemic Attack (TIA) - Brain Hemorrhage 4. **Select the best possible disease** The best possible disease in this case is: - Transient Ischemic Attack (TIA) 5. **Format the Disease** = **Best possible Disease**: Transient Ischemic Attack (TIA) - **Reasons**: - The patient's symptoms of sudden onset dizziness and vertigo, accompanied by palpitations, chest tightness, shortness of breath, and excessive sweating, are consistent with a TIA. - The normal neurological examination and the absence of abnormalities in the brain imaging make a severe neurological event like a brain hemorrhage or a tumor stroke unlikely. - The presence of atherosclerosis in the carotid arteries could suggest a TIA, which is a brief episode of neurological dysfunction caused by a temporary disruption in the blood supply to the brain.

llama3.1: Here are the step-by-step solutions to the medical case: **1. Summarize the medical case:** The patient is a 70-year-old elderly male who presents with dizziness for 17 hours, accompanied by palpitations, chest tightness, shortness of breath, and excessive sweating. The physical examination reveals no special findings in the heart, lung, and abdomen, but the neurological system shows clear consciousness, normal understanding and orientation, fluent speech, cooperative examination, and normal muscle tone, tendon reflexes, sensation, coordination, and Babinski sign. Laboratory examinations show normal blood test results, while imaging examinations reveal a plain magnetic resonance imaging (MRI) scan showing no obvious diffusion restriction high signal within the brain parenchyma, and an echocardiogram showing slight regurgitation of the mitral valve during systole. **2. Medical case Analysis:** * The patient's symptoms of dizziness, palpitations, chest tightness, shortness of breath, and excessive sweating suggest a cardiovascular event. * The normal physical examination results in the heart, lung, and abdomen make it less likely to be a cardiac or pulmonary cause. * The neurological examination shows no abnormalities, which makes it unlikely to be a stroke or brain hemorrhage. * The laboratory examinations show normal blood test results, which does not support any specific diagnosis. * The imaging examinations reveal a normal MRI scan, which makes it unlikely to be a tumor or stroke. However, the echocardiogram showing slight regurgitation of the mitral valve during systole suggests a possible cardiac cause. **3. Select the 2 Best Possible Diseases:** Based on the analysis above, the two most likely diseases are: 1. **Transient Ischemic Attack (TIA)**: The patient's symptoms of dizziness, palpitations, chest tightness, shortness of breath, and excessive sweating could be related to a TIA, which is a temporary interruption of blood flow to the brain. 2. **Cardiac Cause**: The echocardiogram showing slight regurgitation of the mitral valve during systole suggests that the patient's symptoms might be related to a cardiac cause. **4. Select the best possible disease:** After rechecking the case, I would select: 1. **Transient Ischemic Attack (TIA)** The reasons for this selection are: * The patient's symptoms of dizziness, palpitations, chest tightness, shortness of breath, and excessive sweating could be related to a TIA. * The normal physical examination results in the heart, lung, and abdomen make it less likely to be a cardiac or pulmonary cause. * The laboratory examinations show normal blood test results, which

does not support any specific diagnosis. **5. Format the Disease:** = **Best possible Disease**: Transient Ischemic Attack (TIA) - **Reasons**: * Symptoms of dizziness, palpitations, chest tightness, shortness of breath, and excessive sweating. * Normal physical examination results in the heart, lung, and abdomen. * Normal laboratory examinations.

gemma2: ## Medical Case Analysis **1. Summary:** A 70-year-old male presented with sudden onset dizziness, vertigo, palpitations, chest tightness, shortness of breath, and excessive sweating lasting for approximately 10 minutes. He has no prior medical history. Neurological examination revealed no abnormalities. Laboratory tests showed slightly elevated AST and total protein levels, while imaging studies (MRI and echocardiogram) revealed thickened vessel walls and mild mitral and tricuspid valve regurgitation. **2. Medical Case Analysis:** * **Physical Examination:** The absence of neurological deficits (NIHSS score 0) suggests that the event was not a major stroke. However, the dizziness and vertigo could indicate vestibular dysfunction or a transient ischemic attack (TIA). * **Laboratory Examination:** Elevated AST and total protein levels may point towards inflammation or tissue damage, but they are non-specific and require further investigation. * **Imaging Examination:** * **MRI:** The finding of thickened vessel walls on MRA suggests atherosclerosis, which is a risk factor for both stroke and TIA. However, the absence of diffusion restriction in DWI rules out acute ischemic stroke. * **Echocardiogram:** Mild mitral and tricuspid valve regurgitation could be related to age-related changes or underlying cardiac conditions that might contribute to dizziness. The slightly enlarged left atrium may also indicate a history of hypertension or other cardiovascular issues. **3. 2 Best Possible Diseases:** 1. **Transient Ischemic Attack (TIA):** The patient's symptoms align with those of TIA, including sudden onset dizziness and vertigo accompanied by palpitations and chest tightness. The absence of significant neurological deficits supports this possibility. 2. **Benign Paroxysmal Positional Vertigo (BPPV):** This condition causes brief episodes of dizziness triggered by specific head movements. While the patient's symptoms were not directly linked to head movement, BPPV can sometimes present with more generalized dizziness and vertigo. **4. Best Possible Disease:** = **Transient Ischemic Attack (TIA)** - The patient experienced sudden onset dizziness and vertigo accompanied by other cardiovascular symptoms like palpitations and chest tightness, which are common in TIA. - The absence of significant neurological deficits suggests a transient event rather than a full-blown stroke. - Thickened vessel walls on MRA indicate atherosclerosis, a risk factor for both stroke and TIA. **5. Important Note:** This analysis is based solely on the provided information. A definitive diagnosis can only be made by a qualified medical professional after a thorough physical examination, review of the patient's medical history, and potentially further investigations.

Key: 744

original: {'main-diagnosis': 'myelitis', 'differential_diagnosis': ['Neuromyelitis Optica', 'Spinal Vascular Disease', 'Acute Spinal Cord Compression', 'myelitis']}

gpt-4: 1. ****Summarize the medical case.**** The patient is a 55-year-old female with a history of hypertension and cerebral infarction. She has been experiencing pain in the back of her neck and chest for 5 days, and numbness and weakness in her right limb for 3 days. The symptoms have progressed and worsened, with numbness appearing in her left limb. Physical examination reveals a red and swollen throat, grade II tonsil enlargement, and coarse breath sounds in both lungs. Neurological examination shows clear consciousness, normal understanding and orientation, fluent speech, and cooperative examination. The muscle strength of the left upper limb is grade V, the left lower limb is grade V-, the proximal muscle strength of the right upper limb is grade III, the distal muscle strength is grade I, the muscle strength of the right lower limb is grade III-, and the pain and touch sensation below the left T4 plane are reduced. The Babinski sign was positive on both sides. Laboratory examination shows elevated white blood cells, neutrophils, and platelets, and decreased lymphocytes and monocytes. Blood biochemistry test shows elevated direct bilirubin and glucose, and decreased creatine kinase. Cerebrospinal fluid test shows elevated red and white blood cell count, protein, and glucose. Imaging examination shows long T2 signal shadows at the junction of the cervical medulla and the cervical-thoracic spinal cord, and multiple intervertebral disc signals are reduced. 2. ****Medical case Analysis**** The patient's symptoms of pain in the back of the neck and chest, numbness and weakness in the limbs, and the positive Babinski sign suggest a neurological disorder. The elevated white blood cells, neutrophils, and platelets in the routine blood test indicate an inflammatory response. The elevated red and white blood cell count, protein, and glucose in the cerebrospinal fluid test also suggest inflammation in the central nervous system. The imaging examination shows abnormalities in the cervical spine and spinal cord, which could be the cause of the patient's symptoms. 3. ****Select the 2 Best Possible Diseases**** Based on the patient's symptoms, laboratory examination results, and imaging examination results, the two most likely diseases are Neuromyelitis Optica and Acute Spinal Cord Compression. 4. ****Select the best possible disease**** After rechecking the case, the best possible disease is Acute Spinal Cord Compression. 5. ****Format the Disease**** = ****Best possible Disease****: Acute Spinal Cord Compression - ****Reasons****: 1. The patient's symptoms of pain in the back of the neck and chest, numbness and weakness in the limbs, and the positive Babinski sign are consistent with Acute Spinal Cord Compression. 2. The elevated white blood cells, neutrophils, and platelets in the routine blood test indicate an inflammatory response, which could be caused by Acute Spinal Cord Compression. 3. The imaging examination shows abnormalities in the cervical spine and spinal cord, which could be the cause of the patient's symptoms.

llama3.1: Here's the step-by-step solution to the medical case: ****1. Summarize the medical case:**** A 55-year-old middle-aged female patient presents with a 5-day history of pain in the back of her neck and chest, followed by numbness and weakness in her right limb for 3 days. She has a history of hypertension and cerebral infarction. Physical examination reveals red and swollen throat, grade II tonsil enlargement, coarse breath sounds in both lungs, and neurological examination shows clear consciousness but reduced muscle strength in the left upper and lower limbs, with proximal muscle weakness in the right upper limb. Laboratory examinations show elevated white blood cell count, lymphocyte percentage, and C-reactive protein levels. Imaging studies reveal straightening of the cervical spine's physiological curvature, long T2 signal shadows at the junction of the cervical medulla and spinal cord, and intervertebral disc signals reduced with protrusion causing pressure on the dural sac. ****2. Medical case Analysis:**** * Physical examination: + Red and swollen throat, grade II tonsil enlargement, and coarse breath sounds in both lungs suggest a possible infection or inflammation. + Neurological examination reveals muscle weakness and numbness in the limbs, which could indicate a neurological condition affecting the spinal cord or peripheral nerves. * Laboratory examinations: + Elevated white blood cell count, lymphocyte percentage, and C-reactive protein levels suggest an inflammatory response, possibly due to an infection or autoimmune disease. + Normal liver and kidney function tests (ALT, AST, creatinine) rule out acute liver or kidney damage as a cause for the symptoms. * Imaging studies: + Straightening of the cervical spine's physiological curvature and long T2 signal shadows at the

junction of the cervical medulla and spinal cord suggest compression or injury to the spinal cord. + Reduced intervertebral disc signals with protrusion causing pressure on the dural sac indicate possible acute spinal cord compression. **3. Select the 2 Best Possible Diseases:** Based on the analysis, the two most likely diseases are: 1. **Acute Spinal Cord Compression:** The imaging studies show straightening of the cervical spine's physiological curvature and long T2 signal shadows at the junction of the cervical medulla and spinal cord, suggesting compression or injury to the spinal cord. 2. **Myelitis:** The neurological examination reveals muscle weakness and numbness in the limbs, which could indicate a neurological condition affecting the spinal cord or peripheral nerves. **4. Select the best possible disease:** After rechecking the case, I would choose: * **Acute Spinal Cord Compression:** This is the most likely diagnosis given the imaging studies showing compression of the spinal cord and the patient's symptoms of muscle weakness and numbness in the limbs. **5. Format the Disease:** = **Best possible Disease:** Acute Spinal Cord Compression - **Reasons:** + Imaging studies show straightening of the cervical spine's physiological curvature and long T2 signal shadows at the junction of the cervical medulla and spinal cord, suggesting compression or injury to the spinal cord. + Patient's symptoms of muscle weakness and numbness in the limbs are consistent with acute spinal cord compression.

gemma2: ## Medical Case Analysis **1. Summary:** A 55-year-old female presents with a 5-day history of neck and chest pain followed by 3 days of progressive numbness and weakness in her right limb, which has now spread to her left limb. She has a history of hypertension and cerebral infarction. Physical examination reveals tenderness in the throat, reduced sensation below T4 level, positive Babinski sign bilaterally, and muscle weakness in both upper and lower limbs on the right side. Laboratory tests show elevated white blood cell count with lymphocytosis and eosinopenia. Imaging reveals spinal cord compression at multiple levels due to disc protrusion. **2. Medical Case Analysis:** * **Physical Examination:** * Neck pain and chest pain: Could indicate a musculoskeletal issue or neurological problem affecting the cervical spine. * Reduced sensation below T4 level: Suggests a lesion in the spinal cord affecting sensory pathways. * Positive Babinski sign: Indicates upper motor neuron dysfunction, consistent with spinal cord involvement. * Muscle weakness on the right side: Suggests a focal lesion affecting motor neurons innervating those muscles. * **Laboratory Examination:** * Elevated white blood cell count and lymphocytosis: Could indicate inflammation or infection in the central nervous system. * Eosinopenia: May be associated with certain inflammatory conditions or autoimmune diseases. * **Imaging Examination:** * Spinal cord compression at multiple levels due to disc protrusion: This is a key finding strongly suggesting spinal stenosis, which can lead to neurological symptoms like pain, weakness, and sensory loss. **3. Two Most Likely Diseases:** 1. **Spinal Vascular Disease:** While the imaging doesn't directly show vascular involvement, the patient's history of cerebral infarction raises suspicion for potential vascular issues in the spine. 2. **Acute Spinal Cord Compression:** The combination of pain, weakness, sensory loss, and imaging findings strongly points towards spinal cord compression due to disc protrusion. **4. Best Possible Disease:** = **Best possible Disease:** Acute Spinal Cord Compression - **Reasons:** * The patient's symptoms (pain, weakness, numbness) are classic for spinal cord compression. * The imaging findings clearly demonstrate disc protrusion causing pressure on the spinal cord at multiple levels. * While vascular disease is a possibility given her history of cerebral infarction, the current presentation and imaging findings strongly favor acute spinal cord compression as the primary diagnosis. **Important Note:** This analysis is based solely on the provided information. A definitive diagnosis can only be made by a qualified medical professional after a thorough physical examination, review of the patient's complete medical history, and potentially additional diagnostic tests.

Key: 752

original: {'main-diagnosis': 'cerebral infarction', 'differential_diagnosis': ['Cerebral Hemorrhage', 'Tumorous Stroke', 'cerebral infarction']}

gpt-4: 1. ****Summarize the medical case.**** The patient is a 67-year-old male who has been experiencing dizziness for the past 10 days. The dizziness is described as a sense of dullness and cloudiness in the head, which can be relieved after rest. There are no other symptoms such as spinning objects, blackness in front of the eyes, unsteady standing, numbness and weakness of limbs, visual field defects, speech impairment, and water choking. The patient was previously healthy. Physical examination shows normal understanding and orientation, fluent speech, and cooperative with the examination. Laboratory examination shows normal blood test results and blood biochemistry test results. Imaging examination shows dot-like abnormal signal shadows visible on the sides of the bilateral lateral ventricles and the frontal lobe, with low signals on T1WI, high signals on T2WI, and high signals on FLAIR. The ventricular system is slightly widened, and no significant widening or deepening of the brain grooves and pools is observed. No significant displacement is observed. No obvious malformed vascular group is seen in the skull. No obvious abnormal high signal is seen in the DWI sequence, the ventricular system is normal, and the midline structure is centered. 2. ****Medical case Analysis**** The patient's symptoms, physical examination, laboratory examination, and imaging examination results do not indicate any signs of cerebral hemorrhage or tumorous stroke. The patient does not have any symptoms of severe headache, vomiting, or loss of consciousness, which are common in cerebral hemorrhage. The patient also does not have any symptoms of tumorous stroke such as headache, vomiting, seizures, or changes in mental status. The imaging examination results do not show any signs of bleeding or tumor in the brain. However, the patient's symptoms and imaging examination results may suggest cerebral infarction. The patient's dizziness and the dot-like abnormal signal shadows visible on the sides of the bilateral lateral ventricles and the frontal lobe may be signs of cerebral infarction. 3. ****Select the 2 Best Possible Diseases**** Based on the medical case, the two most likely diseases are: - Cerebral Infarction - Tumorous Stroke 4. ****Select the best possible disease**** After rechecking the case, the best possible disease is Cerebral Infarction. 5. ****Format the Disease**** = ****Best possible Disease****: Cerebral Infarction - ****Reasons****: - The patient's main symptom is dizziness, which can be a symptom of cerebral infarction. - The imaging examination shows dot-like abnormal signal shadows visible on the sides of the bilateral lateral ventricles and the frontal lobe, which can be a sign of cerebral infarction. - The patient does not have any symptoms or signs of cerebral hemorrhage or tumorous stroke.

llama3.1: Here are the step-by-step solutions to the medical case: ****1. Summarize the medical case:**** The patient is a 67-year-old elderly male who has been experiencing dizziness for 10 days without any apparent cause. He was previously healthy, and there were no symptoms of spinning objects, blackness in front of the eyes, unsteady standing, numbness and weakness of limbs, visual field defects, speech impairment, and water choking. The physical examination revealed normal muscle tone, tendon reflexes, muscle strength, sensation, and coordination movements. Laboratory examinations showed normal blood test results, and imaging examinations (plain magnetic resonance imaging scan, echocardiogram, color Doppler ultrasound) did not show any significant abnormalities. ****2. Medical case Analysis:**** * The patient's symptoms of dizziness without any apparent cause could be related to various neurological conditions. * The physical examination revealed normal muscle tone, tendon reflexes, muscle strength, sensation, and coordination movements, which suggests that the patient does not have any obvious motor or sensory deficits. * Laboratory examinations showed normal blood test results, which reduces the likelihood of systemic diseases such as infections, metabolic disorders, or electrolyte imbalances. * Imaging examinations (plain magnetic resonance imaging scan, echocardiogram, color Doppler ultrasound) did not show any significant abnormalities in the brain, heart, or blood vessels. ****3. Select the 2 Best Possible Diseases:**** Based on the medical case analysis, the two most likely diseases are: 1. ****Cerebral Infarction****: The patient's symptoms of dizziness without any apparent cause could be related to a transient ischemic attack (TIA) or a small stroke, which is a type of cerebral infarction. 2. ****Tumorous Stroke****: Although the imaging examinations did not show any significant abnormalities, it is still possible that the patient has a small tumor or lesion in the brain that is

causing the symptoms. **4. Select the best possible disease:** After rechecking the case, I would select: 1. **Cerebral Infarction**: The patient's symptoms of dizziness without any apparent cause are more consistent with a transient ischemic attack (TIA) or a small stroke, which is a type of cerebral infarction. **5. Format the Disease:** = **Best possible Disease**: Cerebral Infarction - **Reasons**: * The patient's symptoms of dizziness without any apparent cause could be related to a transient ischemic attack (TIA) or a small stroke. * Laboratory examinations showed normal blood test results, which reduces the likelihood of systemic diseases such as infections, metabolic disorders, or electrolyte imbalances. * Imaging examinations did not show any significant abnormalities in the brain, heart, or blood vessels.

gemma2: ## Medical Case Analysis **1. Summary:** A 67-year-old male presents with a 10-day history of dizziness described as a dullness and cloudiness in the head, relieved by rest. He denies symptoms like spinning objects, visual disturbances, weakness, numbness, speech impairment, or difficulty swallowing. His physical examination is unremarkable, with normal neurological function. Laboratory tests show slightly elevated albumin and total protein levels, but otherwise within normal limits. Imaging reveals dot-like abnormal signal shadows in the brain parenchyma on T1WI/T2WI/FLAIR sequences, suggestive of small lacunar infarcts. The patient also has mild widening of the ventricular system. **2. Medical Case Analysis:** * **Physical Examination:** Normal neurological examination findings (NIHSS score 0, Wada's water drinking test Grade 1, mRS score 0) suggest that the dizziness is not due to a major stroke or significant neurological deficit. * **Laboratory Examination:** Elevated albumin and total protein levels could indicate inflammation or other systemic conditions, but are not specific to any of the listed diseases. The normal range for most other parameters rules out acute metabolic disturbances. * **Imaging Examination:** * **Brain MRI:** Dot-like abnormal signal shadows in the brain parenchyma on T1WI/T2WI/FLAIR sequences are highly suggestive of lacunar infarcts, which are small strokes affecting deep brain structures. This finding strongly supports a diagnosis of cerebral infarction. * **Echocardiogram:** Mild mitral and tricuspid regurgitation, along with an E/A ratio less than 1, suggest diastolic dysfunction. While not directly related to the dizziness, it could be a contributing factor or indicate underlying cardiovascular disease. **3. Select the 2 Best Possible Diseases:** Based on the evidence, the two most likely diseases are: * **Cerebral Infarction:** The brain MRI findings of dot-like abnormal signal shadows in the parenchyma strongly suggest lacunar infarcts, a type of cerebral infarction. * **Cerebral Hemorrhage:** While less likely than infarction given the imaging findings, it cannot be completely ruled out without further investigation. **4. Select the Best Possible Disease:** Considering the strong evidence from the brain MRI and the absence of any clinical or laboratory findings suggestive of hemorrhage, **cerebral infarction** is the most likely diagnosis. **5. Format the Disease:** = **Best possible Disease**: Cerebral Infarction - **Reasons**: - Dot-like abnormal signal shadows in the brain parenchyma on T1WI/T2WI/FLAIR sequences are highly suggestive of lacunar infarcts, a type of cerebral infarction. - The patient's symptoms (dullness and cloudiness in the head) are consistent with those caused by small strokes affecting deep brain structures. - There are no clinical or laboratory findings suggestive of hemorrhage.

Key: 760

original: {'main-diagnosis': 'cerebral infarction', 'differential_diagnosis': ['Cerebral Hemorrhage', 'Tumor Stroke', 'cerebral infarction']}

gpt-4: 1. ****Summarize the medical case.**** The patient is a 75-year-old male with a history of diabetes, presenting with intermittent dizziness and nausea for the past 2 days. He has high blood pressure but no other symptoms such as headache, vertigo, tinnitus, hearing loss, speech impairment, choking on water, or fever. His physical examination is largely normal, with a positive Romberg's sign. Laboratory tests show slightly elevated glucose and triglycerides levels. Imaging examinations reveal no significant abnormalities in the brain, but there are signs of vascular stiffness and localized light contrast in the M1 segment of the left middle cerebral artery and the P2 segment of the right posterior cerebral artery. The echocardiogram shows thickening of the left ventricular wall and a small amount of regurgitation of the mitral and tricuspid valves. The color Doppler ultrasound shows accelerated blood flow in the M1 segment of the left middle cerebral artery and an isoechoic plaque in the left carotid artery. 2. ****Medical case Analysis**** - The patient's symptoms of intermittent dizziness and nausea, along with high blood pressure, could be indicative of a neurological issue. - The positive Romberg's sign suggests a problem with the patient's proprioception, which could be due to a neurological disorder. - The elevated glucose and triglycerides levels indicate poor control of the patient's diabetes, which can increase the risk of cerebrovascular disease. - The imaging findings of vascular stiffness and localized light contrast in certain cerebral arteries suggest possible cerebrovascular disease. - The echocardiogram findings of left ventricular wall thickening and valve regurgitation could indicate heart disease, which can increase the risk of cerebrovascular disease. - The color Doppler ultrasound findings of accelerated blood flow in the left middle cerebral artery and plaque in the left carotid artery further suggest cerebrovascular disease. 3. ****Select the 2 Best Possible Diseases**** Based on the patient's symptoms, history, and examination findings, the two most likely diseases are: - Cerebral Infarction - Tumor Stroke 4. ****Select the best possible disease**** After reevaluating the case, the best possible disease is: - Cerebral Infarction 5. ****Format the Disease**** = ****Best possible Disease****: Cerebral Infarction - ****Reasons****: - The patient's symptoms of intermittent dizziness and nausea, along with high blood pressure, are consistent with cerebral infarction. - The positive Romberg's sign suggests a neurological issue, which could be due to cerebral infarction. - The patient's poorly controlled diabetes increases his risk of cerebral infarction. - The imaging findings of vascular stiffness and localized light contrast in certain cerebral arteries are indicative of cerebral infarction. - The echocardiogram findings of left ventricular wall thickening and valve regurgitation could indicate heart disease, which can increase the risk of cerebral infarction. - The color Doppler ultrasound findings of accelerated blood flow in the left middle cerebral artery and plaque in the left carotid artery further suggest cerebral infarction.

llama3.1: Here's the step-by-step solution to the medical case: ****1. Summarize the medical case:**** The patient is an elderly male (75 years old) who presents with intermittent dizziness and nausea for 2 days. His blood pressure is elevated at 180/112mmHg, but he has no headache, vertigo, tinnitus, hearing loss, speech impairment, or fever. He has a history of diabetes. Physical examination reveals clear consciousness, normal understanding and orientation, fluent speech, and cooperative examination. Laboratory tests show normal white blood cell count, lymphocyte percentage, monocyte percentage, neutrophil percentage, and platelet count. Blood biochemistry tests reveal elevated total bilirubin (11.6 $\mu\text{mol/L}$), direct bilirubin (2.9 $\mu\text{mol/L}$), and indirect bilirubin (8.7 $\mu\text{mol/L}$). Imaging studies show no obvious abnormalities in the plain magnetic resonance imaging scan, but the vertebral-basilar artery, bilateral internal carotid arteries, and posterior cerebral arteries are stiff with uneven lumen thickness. ****2. Medical case Analysis:**** From the medical case analysis: * The patient's symptoms of intermittent dizziness and nausea could be related to a stroke or transient ischemic attack (TIA). * The elevated blood pressure is consistent with hypertension. * The laboratory tests show normal white blood cell count, which suggests no acute infection or inflammation. * The blood biochemistry tests reveal elevated total bilirubin, direct bilirubin, and indirect bilirubin, which could indicate liver dysfunction or hemolysis. * The imaging studies show stiff vertebral-basilar artery, bilateral internal carotid arteries, and posterior cerebral arteries with uneven lumen thickness, which is consistent with atherosclerosis. ****3. Select the 2**

Best Possible Diseases:** Based on the medical case analysis, the two most likely diseases are: 1. **Cerebral Infarction**: The patient's symptoms of intermittent dizziness and nausea could be related to a stroke or TIA. 2. **Tumor Stroke**: The imaging studies show stiff vertebral-basilar artery, bilateral internal carotid arteries, and posterior cerebral arteries with uneven lumen thickness, which is consistent with atherosclerosis. **4. Select the best possible disease:** After rechecking the case, I would choose: 1. **Cerebral Infarction**: The patient's symptoms of intermittent dizziness and nausea are more consistent with a stroke or TIA than a tumor stroke. 2. **Tumor Stroke**: Although less likely, the imaging studies show stiff vertebral-basilar artery, bilateral internal carotid arteries, and posterior cerebral arteries with uneven lumen thickness, which could be related to atherosclerosis. **5. Format the Disease:** = **Best possible Disease**: Cerebral Infarction - **Reasons**: * The patient's symptoms of intermittent dizziness and nausea are consistent with a stroke or TIA. * The imaging studies show stiff vertebral-basilar artery, bilateral internal carotid arteries, and posterior cerebral arteries with uneven lumen thickness, which is consistent with atherosclerosis.

gemma2: ## Medical Case Analysis **1. Summary:** An elderly male patient (75 years old) presents with intermittent dizziness and nausea lasting several minutes at a time. He has no headache, vertigo, tinnitus, hearing loss, speech impairment, choking on water, or fever. His blood pressure is elevated (180/112 mmHg). He has a history of diabetes. Physical examination reveals positive Romberg's sign but negative Babinski and Kernig's signs. Neurological exam otherwise normal. Laboratory tests show slightly elevated ESR and CRP, along with mildly elevated triglycerides and cholesterol. Imaging reveals thickened vessel walls in the brain with localized light contrast in some areas, suggestive of atherosclerosis. **2. Medical Case Analysis:** * **Physical Examination**: Positive Romberg's sign suggests a problem with balance and coordination, which could be related to neurological issues. However, negative Babinski and Kernig's signs rule out certain conditions like meningitis or spinal cord compression. * **Laboratory Examination**: Elevated ESR and CRP indicate inflammation, which can be associated with various inflammatory conditions, including stroke. Elevated triglycerides and cholesterol point towards cardiovascular risk factors that could contribute to cerebrovascular events. * **Imaging Examination**: The MRI findings of thickened vessel walls and localized light contrast in the brain arteries strongly suggest atherosclerosis, a major risk factor for both cerebral infarction and hemorrhage. **3. Select the 2 Best Possible Diseases:** Based on the information provided, the two most likely diseases are: 1. **Cerebral Infarction**: The combination of dizziness, nausea, positive Romberg's sign, elevated ESR/CRP, and MRI findings suggestive of atherosclerosis strongly point towards a possible stroke (cerebral infarction). 2. **Cerebral Hemorrhage**: While less likely than infarction based on the symptoms and imaging, the possibility of hemorrhage cannot be completely ruled out. **4. Select the Best Possible Disease:** Considering the patient's presentation, the most likely diagnosis is **Cerebral Infarction**. The positive Romberg's sign, elevated inflammatory markers, and MRI findings consistent with atherosclerosis are more suggestive of an ischemic stroke than a hemorrhagic one. **5. Format the Disease:** = **Best possible Disease**: Cerebral Infarction - **Reasons**: - Intermittent dizziness and nausea are common symptoms of cerebral infarction. - Positive Romberg's sign suggests neurological dysfunction, consistent with a stroke affecting balance and coordination. - Elevated ESR and CRP indicate inflammation, often present after an ischemic event. - MRI findings reveal thickened vessel walls and localized light contrast in the brain arteries, strongly suggestive of atherosclerosis, a major risk factor for cerebral infarction. **Important Note**: This analysis is based solely on the provided information. A definitive diagnosis can only be made by a qualified medical professional after a thorough examination, additional tests, and consideration of the patient's full medical history.

Key: 768

original: {'main-diagnosis': 'subarachnoid hemorrhage', 'differential_diagnosis': ['Cerebral hemorrhage, with acute onset, may also present the above symptoms, often accompanied by elevated blood pressure and headaches, etc. A cranial CT scan can be used for differentiation.', 'Tumor stroke can also present the above symptoms, may be accompanied by headaches, nausea, vomiting, and symptoms of increased intracranial pressure. A cranial MRI can be used for differentiation.', 'subarachnoid hemorrhage']}

gpt-4: 1. ****Summarize the medical case.**** The patient is a 69-year-old woman who has been experiencing a severe headache for the past 4 days. The headache was sudden in onset and has been persistent. She has no other symptoms such as nausea, vomiting, numbness in limbs, limb twitching, or abnormalities in bowel and bladder functions. She has not received any treatment for the headache. Her CT scan shows dot-like low-density in the bilateral basal ganglia and linear high-density shadows in various brain grooves. The ventricular system is widened and enlarged. Her CT angiography shows various degrees of stenosis in different arteries and aneurysmal dilations in certain areas. 2. ****Medical case Analysis**** The sudden onset of severe headache in the patient could be indicative of a neurological event such as a stroke or hemorrhage. The absence of other symptoms such as nausea, vomiting, numbness in limbs, limb twitching, or abnormalities in bowel and bladder functions makes it less likely for the condition to be a tumor stroke. The CT scan findings of dot-like low-density in the bilateral basal ganglia and linear high-density shadows in various brain grooves could be indicative of a hemorrhage. The CT angiography findings of various degrees of stenosis and aneurysmal dilations could be indicative of a subarachnoid hemorrhage. 3. ****Select the 2 Best Possible Diseases**** Based on the patient's symptoms and imaging findings, the two most likely diseases are Cerebral Hemorrhage and Subarachnoid Hemorrhage. 4. ****Select the best possible disease**** After rechecking the case, the best possible disease is Subarachnoid Hemorrhage. 5. ****Format the Disease**** = ****Best possible Disease****: Subarachnoid Hemorrhage -****Reasons****: 1. The sudden onset of severe headache is a common symptom of Subarachnoid Hemorrhage. 2. The CT scan findings of dot-like low-density in the bilateral basal ganglia and linear high-density shadows in various brain grooves are indicative of a hemorrhage. 3. The CT angiography findings of various degrees of stenosis and aneurysmal dilations are indicative of a Subarachnoid Hemorrhage.

llama3.1: Here are the step-by-step solutions to the medical case: ****1. Summarize the medical case:**** The patient is a 69-year-old elderly woman who presents with a 4-day history of headache without nausea, vomiting, numbness in limbs, or other neurological symptoms. Her past medical history is unremarkable, and she has not received any treatment for her current condition. The physical examination is normal. Laboratory examinations are not available. Imaging examinations reveal dot-like low-density areas in the bilateral basal ganglia, linear high-density shadows in the longitudinal fissure and brain grooves, widened and enlarged ventricular system, and no midline shift. Cerebral angiography shows calcified plaques with estimated stenosis in the right internal carotid artery (14%), left internal carotid artery (32%), and non-calcified plaque with 36% stenosis in the M1 segment of the left middle cerebral artery. ****2. Medical case Analysis:**** * The patient's symptoms, such as headache without nausea or vomiting, suggest a possible intracranial hemorrhage or stroke. * The imaging examinations reveal dot-like low-density areas in the bilateral basal ganglia, which could indicate microbleeds or small vessel disease. * The cerebral angiography shows calcified plaques with estimated stenosis in multiple arteries, including the internal carotid and middle cerebral arteries. This suggests atherosclerosis and possible reduced blood flow to the brain. * The presence of aneurysmal dilation in the left posterior communicating artery and localized aneurysmal protrusion in the A1 segment of the left anterior cerebral artery may indicate a risk for subarachnoid hemorrhage. ****3. Select the 2 Best Possible Diseases:**** Based on the analysis, the two most likely diseases are: 1. ****Cerebral hemorrhage****: The patient's symptoms and imaging findings suggest a possible intracranial hemorrhage. 2. ****Subarachnoid hemorrhage****: The presence of aneurysmal dilation and localized aneurysmal protrusion in the cerebral angiography suggests a risk for subarachnoid hemorrhage. ****4. Select the best possible disease:**** After rechecking the case, I would choose: ****Cerebral hemorrhage**** The reasons are: * The patient's symptoms, such as headache without nausea or vomiting, suggest a possible intracranial

hemorrhage. * The imaging examinations reveal dot-like low-density areas in the bilateral basal ganglia, which could indicate microbleeds or small vessel disease. * The cerebral angiography shows calcified plaques with estimated stenosis in multiple arteries, including the internal carotid and middle cerebral arteries. This suggests atherosclerosis and possible reduced blood flow to the brain. **5. Format the Disease:** = **Best possible Disease**: Cerebral hemorrhage - **Reasons**: * The patient's symptoms suggest a possible intracranial hemorrhage. * Imaging examinations reveal dot-like low-density areas in the bilateral basal ganglia, indicating microbleeds or small vessel disease. * Cerebral angiography shows calcified plaques with estimated stenosis in multiple arteries, suggesting atherosclerosis and reduced blood flow to the brain.

gemma2: ## Medical Case Analysis **1. Summarize the medical case:** A 69-year-old woman presents with a sudden severe headache that began four days ago. The headache is persistent and unrelieved. There are no accompanying symptoms like nausea, vomiting, limb numbness or weakness, bowel/bladder dysfunction, or altered consciousness. Physical examination reveals no abnormalities. Imaging studies show dot-like low-density areas in the basal ganglia, linear high-density shadows in brain fissures, widened ventricles, and a localized aneurysmal dilation at the beginning of the left posterior communicating artery. The CT angiography highlights significant stenosis in the left vertebral artery (100% at V5 segment) and left middle cerebral artery (36% at M1 segment), along with a 32% stenosis in the left internal carotid artery (C5 segment). Additionally, there's an aneurysm in the A1 segment of the left anterior cerebral artery. **2. Medical Case Analysis:** * **Physical Examination:** The lack of neurological deficits (numbness, weakness, etc.) suggests that the headache is not due to a stroke causing immediate damage. However, it doesn't rule out other causes like an aneurysm or tumor. * **Laboratory Examination:** The absence of laboratory results limits our ability to assess inflammatory markers or blood clotting factors which could be relevant in certain conditions. * **Imaging Examination (CT Scan):** The dot-like low-density areas in the basal ganglia and linear high-density shadows in brain fissures are suggestive of vascular changes, potentially related to atherosclerosis or previous microbleeds. Widened ventricles can indicate increased intracranial pressure, which could be caused by various factors like tumors, hydrocephalus, or bleeding. * **Imaging Examination (CT Angiography):** This is crucial for identifying vascular abnormalities. The significant stenosis in the left vertebral artery and middle cerebral artery raises concern for a potential stroke risk. The aneurysmal dilation at the beginning of the left posterior communicating artery is a serious finding that could rupture and cause subarachnoid hemorrhage. **3. Select the 2 Best Possible Diseases:** Based on the information provided, the two most likely diseases are: * **Subarachnoid Hemorrhage (SAH):** The presence of an aneurysmal dilation in the left posterior communicating artery significantly increases the risk of SAH. * **Cerebral Atherosclerosis:** The significant stenosis in the left vertebral and middle cerebral arteries, along with calcified plaques in other carotid arteries, strongly suggests atherosclerosis as a contributing factor to the patient's headache and potential future stroke risk. **4. Select the best possible disease:** Considering the imaging findings of an aneurysmal dilation, **Subarachnoid Hemorrhage (SAH)** is the most likely diagnosis. **5. Format the Disease:** = **Best possible Disease**: Subarachnoid Hemorrhage - **Reasons**: - Aneurysmal dilation at the beginning of the left posterior communicating artery, a known risk factor for SAH. - The patient's sudden onset of severe headache aligns with the typical presentation of SAH. **Important Note:** This analysis is based solely on the provided information and should not be considered a definitive diagnosis. A comprehensive evaluation by a qualified neurologist is essential for accurate diagnosis and treatment planning. Further investigations, such as lumbar puncture and MRI, may be necessary to confirm the diagnosis and rule out other possibilities.

Key: 776

original: {'main-diagnosis': 'alzheimer disease', 'differential_diagnosis': ['Vascular Dementia', 'Frontotemporal Dementia', 'alzheimer disease']}

gpt-4: 1. ****Summarize the medical case.**** The patient is a 56-year-old woman who has been experiencing memory loss for the past 3 years, primarily characterized by short-term memory loss, forgetfulness, decreased calculation ability, and slightly slow response. She had thyroid surgery in the past. Her physical examination shows decreased comprehension and orientation, fluent speech, and normal limb strength and sensation. Her thyroid function test shows a decreased level of Thyroid Stimulating Hormone (TSH) and an increased level of Vitamin B12. The cerebrospinal fluid test is within normal ranges. The MRI scan shows dot-like long T2 signals in both frontal and parietal lobes, a dot-like high signal in the right frontal lobe, and slightly enlarged temporal horns adjacent to both hippocampi. 2. ****Medical case Analysis**** The patient's symptoms of memory loss, decreased calculation ability, and slow response, along with the MRI findings of dot-like long T2 signals in both frontal and parietal lobes, and slightly enlarged temporal horns adjacent to both hippocampi, are indicative of neurodegenerative diseases. The normal cerebrospinal fluid test rules out any infectious or inflammatory causes. The decreased TSH could be due to her past thyroid surgery, and the increased Vitamin B12 level is not directly related to her neurological symptoms. 3. ****Select the 2 Best Possible Diseases**** Based on the patient's symptoms and test results, the two most likely diseases are Alzheimer's disease and Vascular Dementia. 4. ****Select the best possible disease**** The best possible disease for this patient is Alzheimer's disease. 5. ****Format the Disease**** = ****Best possible Disease****: Alzheimer's disease - ****Reasons****: 1. The patient's symptoms of memory loss, decreased calculation ability, and slow response are classic symptoms of Alzheimer's disease. 2. The MRI findings of dot-like long T2 signals in both frontal and parietal lobes, and slightly enlarged temporal horns adjacent to both hippocampi, are indicative of atrophy, which is a common finding in Alzheimer's disease. 3. The normal cerebrospinal fluid test rules out other causes such as infections or inflammations. 4. The decreased TSH could be due to her past thyroid surgery and is not directly related to her neurological symptoms. The increased Vitamin B12 level is also not directly related to Alzheimer's disease.

llama3.1: I'll follow the step-by-step approach to solve the medical case. ****1. Summarize the medical case:**** A 56-year-old middle-aged woman presents with a 3-year history of memory loss, characterized by short-term memory loss, forgetfulness, and decreased calculation ability. She had thyroid surgery in the past. Physical examination reveals decreased comprehension and orientation, fluent speech, and normal limb muscle tone and tendon reflexes. Laboratory examinations show normal thyroid function tests and cerebrospinal fluid analysis. Imaging studies reveal dot-like long T2 signals in both frontal and parietal lobes, with high signals shown in T2 Flair images. ****2. Medical case Analysis:**** ****Physical Examination:**** The patient's decreased comprehension and orientation suggest cognitive impairment. Normal limb muscle tone and tendon reflexes indicate no motor neuron involvement. ****Laboratory Examination:**** Normal thyroid function tests rule out hypothyroidism as a cause of memory loss. Cerebrospinal fluid analysis shows normal protein, glucose, and chloride levels, with a slightly low protein level (100 mg/L). This is within the normal range but on the lower end. ****Imaging Examination:**** The DWI scan shows no diffusion-restricted high signal within the brain parenchyma. However, dot-like long T2 signals are observed in both frontal and parietal lobes, with high signals shown in T2 Flair images. This suggests possible white matter changes or vascular lesions. ****3. Select the 2 Best Possible Diseases:**** Based on the analysis, the two most likely diseases are: ****Vascular Dementia:**** The patient's history of memory loss and decreased comprehension and orientation, combined with imaging findings suggesting white matter changes or vascular lesions, make vascular dementia a strong possibility. ****Alzheimer Disease:**** The patient's age, cognitive impairment, and normal laboratory examinations also suggest Alzheimer disease as a possible diagnosis. ****4. Select the best possible disease:**** After rechecking the case, I would select: ****Vascular Dementia****: Name of the best possible disease - ****Reasons****: - History of memory loss - Decreased comprehension and orientation - Normal limb muscle tone and tendon reflexes - Imaging findings suggesting white matter changes or vascular lesions

gemma2: ## Medical Case Analysis **1. Summary:** A 56-year-old woman presents with a 3-year history of progressive memory loss, characterized by short-term memory impairment, forgetfulness, decreased calculation ability, and slightly slowed response. She underwent thyroid surgery in the past. Physical examination reveals decreased comprehension and orientation, but no significant neurological deficits. Laboratory tests show elevated Vitamin B12 levels and positive Pandy's test in cerebrospinal fluid (CSF). Imaging reveals dot-like long T2 signals in frontal and parietal lobes, high signal in T2 Flair images, and slightly enlarged temporal horns. **2. Medical Case Analysis:**
* **Physical Examination:** Decreased comprehension and orientation suggest cognitive decline, a key feature of dementia. * Absence of significant motor or sensory deficits helps rule out conditions like stroke or peripheral neuropathy.
* **Laboratory Examination:** Elevated Vitamin B12 levels can be associated with both neurological disorders (like pernicious anemia) and other systemic conditions. Further investigation is needed to determine its relevance. * Positive Pandy's test in CSF suggests inflammation, which could be a feature of various neurodegenerative diseases or infections.
* **Imaging Examination:** Dot-like long T2 signals and high signal in T2 Flair images are suggestive of microvascular changes, often seen in vascular dementia. * Enlarged temporal horns can be associated with Alzheimer's disease but are not specific to it. **3. Select the 2 Best Possible Diseases:** Based on the available information, the two most likely diseases are: 1. **Vascular Dementia:** The imaging findings of dot-like long T2 signals and high signal in T2 Flair images, along with slightly enlarged temporal horns, strongly suggest microvascular changes consistent with vascular dementia. 2. **Alzheimer's Disease:** While not as strong as the evidence for vascular dementia, the patient's age, cognitive decline, and slightly enlarged temporal horns could also point towards Alzheimer's disease. **4. Select the Best Possible Disease:** Considering the combination of clinical presentation, laboratory findings, and imaging results, **Vascular Dementia** appears to be the most likely diagnosis. **5. Format the Disease:** = **Best possible Disease:** Vascular Dementia - **Reasons:** - Dot-like long T2 signals and high signal in T2 Flair images on MRI are suggestive of microvascular changes characteristic of vascular dementia. - Slightly enlarged temporal horns, while not specific to vascular dementia, can be associated with it. - The patient's age and cognitive decline align with the typical presentation of vascular dementia. **Important Note:** This analysis is based solely on the provided information. A definitive diagnosis requires a comprehensive clinical evaluation, including a detailed neurological examination, additional laboratory tests (e.g., complete blood count, metabolic panel), and potentially further neuroimaging studies.

Key: 784

original: {'main-diagnosis': 'facial neuritis', 'differential_diagnosis': ['Guillain-Barre Syndrome', 'Otic origin facial nerve paralysis', 'Posterior fossa tumor or meningitis', 'Neurological Lyme disease', 'facial neuritis']}

gpt-4: 1. ****Summarize the medical case.**** The patient is a 67-year-old male with a history of hypertension. He woke up 5 hours ago and found mouth corner deviation to the right, accompanied by drooling around the mouth, feeling speech impairment, and a stiff tongue when speaking. The symptoms persist without relief. Physical examination shows right frontal lines become shallow, right nasolabial fold becomes shallow, weak right eye closing force, teeth showing mouth corner right deviation, right cheek leaking when puffing, tongue in the middle, normal tendon reflex symmetry of four limbs muscle tension, grade V muscle strength of four limbs, normal sensory and coordination movement symmetry, negative bilateral Babinski sign. Soft neck, negative Kernig's sign. Laboratory examination shows slightly elevated Alanine Aminotransferase and Direct Bilirubin, and slightly high glucose level. 2. ****Medical case Analysis**** The patient's symptoms of mouth corner deviation, drooling, speech impairment, and a stiff tongue when speaking, along with physical examination findings of right frontal lines become shallow, right nasolabial fold becomes shallow, weak right eye closing force, teeth showing mouth corner right deviation, right cheek leaking when puffing, suggest a neurological issue, possibly involving the facial nerve. The laboratory findings do not provide significant clues towards the neurological diseases in the list. 3. ****Select the 2 Best Possible Diseases**** Based on the patient's symptoms and physical examination findings, the two most likely diseases are 'Otic origin facial nerve paralysis' and 'facial neuritis'. Both these conditions can cause facial weakness or paralysis, which could explain the patient's symptoms. 4. ****Select the best possible disease**** After rechecking the case, the best possible disease is 'facial neuritis'. 5. ****Format the Disease**** = ****Best possible Disease****: Facial Neuritis - ****Reasons****: 1. The patient's symptoms of mouth corner deviation, drooling, speech impairment, and a stiff tongue when speaking are consistent with facial neuritis, which can cause facial weakness or paralysis. 2. The physical examination findings of right frontal lines become shallow, right nasolabial fold becomes shallow, weak right eye closing force, teeth showing mouth corner right deviation, right cheek leaking when puffing, are also indicative of facial neuritis. 3. The patient's history of hypertension does not directly relate to facial neuritis, but it does indicate a general risk for neurological conditions.

llama3.1: I'll follow the step-by-step approach to solve the medical case. ****1. Summarize the medical case.**** A 67-year-old male patient presents with a 5-hour history of mouth corner deviation to the right, drooling around the mouth, speech impairment, and stiff tongue when speaking. He has a history of hypertension. Physical examination reveals clear consciousness, normal understanding and orientation, fluent speech, cooperative examination, right frontal lines become shallow, right nasolabial fold becomes shallow, weak right eye closing force, teeth showing mouth corner right deviation, right cheek leaking when puffing, tongue in the middle, normal tendon reflex symmetry of four limbs muscle tension, grade V muscle strength of four limbs, normal sensory and coordination movement symmetry, negative bilateral Babinski sign. Soft neck, negative Kernig's sign. ****2. Medical case Analysis:**** * The patient's symptoms suggest a unilateral facial weakness, which is consistent with the physical examination findings. * The laboratory examinations show normal blood counts, electrolytes, and liver function tests, which makes conditions like Guillain-Barre Syndrome less likely. * The absence of imaging studies limits our ability to diagnose posterior fossa tumors or meningitis. * The patient's age and symptoms make otic origin facial nerve paralysis a possibility. ****3. Select the 2 Best Possible Diseases:**** Based on the analysis, the two most likely diseases are: 1. ****Otic origin facial nerve paralysis****: This condition is consistent with the patient's unilateral facial weakness and normal laboratory examinations. 2. ****Facial neuritis****: This condition can also cause unilateral facial weakness and is a possibility given the patient's symptoms. ****4. Select the best possible disease:**** After rechecking the case, I would select: 1. ****Otic origin facial nerve paralysis****: The patient's symptoms of mouth corner deviation to the right, drooling around the mouth, speech impairment, and stiff tongue when speaking are consistent with this condition. Additionally, the physical examination findings of weak right eye closing force, teeth showing mouth corner right deviation, and right cheek leaking when puffing support this diagnosis. ****5. Format the**

Disease:** = **Best possible Disease**: Otic origin facial nerve paralysis - **Reasons**: - Unilateral facial weakness consistent with symptoms. - Normal laboratory examinations make other conditions less likely. - Age and symptoms suggest otic origin facial nerve paralysis as a possibility.

gemma2: ## Medical Case Analysis **1. Summary:** A 67-year-old male with a history of hypertension presented with sudden onset right-sided facial droop (mouth corner deviation), drooling, speech impairment, and tongue stiffness lasting for 5 hours. Neurological examination revealed weakness on the right side of his face, including shallow forehead and nasolabial folds, weak eye closure, and asymmetry during puffing cheeks. **2. Medical Case Analysis:** * **Physical Examination:** * **Facial Nerve Palsy:** The key finding is the right-sided facial droop (Bell's palsy) with weakness in various muscles of facial expression. This strongly suggests a problem affecting the facial nerve (cranial nerve VII). * **Other Findings:** The absence of other neurological deficits like limb weakness, sensory disturbances, or abnormal reflexes helps rule out more widespread neurological conditions. * **Laboratory Examination:** * **Elevated Inflammatory Markers:** The slightly elevated ESR and CRP suggest a possible inflammatory process contributing to the facial nerve palsy. * **Liver Function Tests:** The elevated ALT and direct bilirubin levels could indicate liver involvement, but further investigation is needed to determine its significance in relation to the facial nerve palsy. * **Imaging Examination:** Not available in this case. Imaging (MRI) would be helpful to rule out tumors or other structural abnormalities affecting the facial nerve pathway. **3. Select the 2 Best Possible Diseases:** 1. **Bell's Palsy (Facial Neuritis):** This is the most likely diagnosis given the classic presentation of right-sided facial weakness with no other neurological deficits. 2. **Guillain-Barré Syndrome:** While less likely, this autoimmune disorder can cause facial nerve palsy as part of a more widespread weakness affecting multiple cranial nerves and peripheral nerves. **4. Select the Best Possible Disease:** Based on the limited information, **Bell's Palsy (Facial Neuritis)** is the most probable diagnosis. The patient's symptoms are consistent with this condition, and there are no significant findings suggesting Guillain-Barré Syndrome. **5. Format the Disease:** = **Best Possible Disease**: Bell's Palsy (Facial Neuritis) - **Reasons**: - Classic presentation of right-sided facial droop (mouth corner deviation), drooling, speech impairment, and tongue stiffness. - No other neurological deficits suggesting a more widespread condition like Guillain-Barré Syndrome. - Elevated inflammatory markers (ESR, CRP) could indicate an inflammatory process contributing to the facial nerve palsy. **Important Note:** This analysis is based on limited information. A definitive diagnosis can only be made after a thorough clinical evaluation, including a detailed history, physical examination, and potentially further investigations like imaging studies or nerve conduction tests.