Takayasu arteritis is a chronic vasculitis with no known etiology. It has been found to primarily affect the aorta and its main branches. The inflammation may be localized to segments of the thoracic aorta, subclavian artery, common iliac arteries, and the abdominal aorta. The initial manifestation may be seen through the left middle or posterior inferior surface of the aorta. As the disease progresses, the left common carotid, vertebral, brachiocephalic, right middle, proximal subclavian artery, right carotid, vertebral arteries, and aorta may be affected. The abdominal aorta and pulmonary arteries may be affected in 50% of patients.

The inflammatory process causes thickening of the walls of affected arteries and therefore resulting in a decreased luminal area of the affected vessel. The proximal aorta may become dilated secondary to inflammatory injury. Narrowing, occlusion, or dilation of the affected segments of the vessels may cause a wide variety of nonspecific symptoms.

Although the pathogenesis is poorly understood, the presence of monocellular cells, predominantly lymphocytes, histiocytes, macrophages, and plasma cells has been identified in the process. Systemic symptoms are common in the early stages of disease such as weight loss, fatigue, and low grade fever. As the disease progresses, evidence of vascular involvement becomes apparent.

Abstract

An 1½ year old female started suffering from severely elevated blood pressure for her age. At the same time she suffered from a right taking infection that progressed to chronic renal insufficiency. Two months later she continued having hypertension which was later complicated by an episode of ischemic bowel disease that required a jejuno-rectal resection. The MRI angiogram of the abdomen showed a superior mesenteric artery occlusion. Shortly after, she started suffering from tonic clonic seizures which were worked up by angiographic imaging resulting in right middle cerebral artery occlusion. This resulted in significant improvement of the patient's overall condition. After an initial short period of severe bronchospasm and hypnic episodes which settled down and was completely negative. At 7 months of age she suffered right middle cerebral artery infarction. Transthoracic echocardiography showed development of progressive severe left ventricular hypertrophy secondary to systemic arterial hypertension. Six months after her first seizure she suffered another one that was witnessed. The patient was referred to our center for evaluation of recurrent episodes of right middle cerebral artery and posterior branches of the right MCA as well as occlusion of cervical and intracranial vessels. The diagnosis of Takayasu arteritis was made based on the absence of other causes of the disease, an increased uptake of contrast, and the presence of a temporal bruit. The patient was started on a regime of prednisolone and cyclophosphamide and the disease stabilized causing the loss of several digits. She continued having fevers, leukocytoses, thrombocytosis, and elevated CRP and ESR. MRA showed persistent occlusion of the right intracranial internal carotid artery with prominent collaterals warranting the angiographic appearance of Takayasu's arteritis.

Description of intervention/study

MRI is an imaging modality that uses nonionizing radiofrequency inside a strong magnetic field directing the location and local changes which is of patients in water. MRI was the modality preferred for following up on the cortical atrophy of the patient in subject. Limitations of MRI are that they are expensive and may exclude certain metallic devices inside patients such as asplastomatous in some patients. For younger patients, conscious sedation may be another drawback being that the MRI requires the patient to remain motionless for the duration of the study.

MRI has the ability to detect vascular stenosis or occlusion making it possible to detect the site of an acute ischemic stroke. This modality made it possible to detect the extracranial arterial occlusions along the trajectory of the right carotid artery.

Conclusions

Because of the central location of the arteries involved in Takayasu's arteritis, biopsy is generally not an option, especially in a patient as young as the subject in question. This situation forces only imaging as the sole tool for diagnosis along with a complete physical exam paying attention to detail in the neurological presentation. MRI defines the location, extent of area affected, and the changes in architecture seen consistently in Takayasu's arteritis. The pathogenesis of Takayasu is poorly understood and is believed to have an autoimmune component mostly by cell mediation and is also believed to be similar to giant cells found in temporal arteritis. It is postulated that subendothelial autoantibodies may also have a role. The presence of fever, malaise, weight loss, myalgia, and ischemic symptoms which are all found in the patient in question raise suspicion for Takayasu arteritis. The prognosis for this patient is not very favorable due to the chronic anarcoamicoperating as well as ischemic outside the CNS including the kidneys and extremities.

References


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