



Brain Aneurysm

A brain aneurysm, (a.k.a intra¬cranial aneurysm, cerebral aneurysm) is a bulge or balloon-like swelling of the wall of a brain artery. Aneurysms develop insidiously, take many years to develop, as a result of wear and strain of the wall of the artery. They typically occur at the splitting of brain arteries and appear like berries; hence the name berry aneurysm. Alternatively they may look like a sausage if they involve the wall of the artery circumferentially. Uncommonly, they may result from injury, infection, or a genetic predisposition. However the majority of aneurysms are sporadic (i.e. randomly discovered). Although aneurysms can be detected in all age groups, they are more typically discovered in patients in the 4th to 6th decades of life, especially in women. They may present with life threatening brain hemorrhage. The fatality associated with the bleeding is the major reason for the meticulous medical evaluation, follow-up or treatment of the patients with brain aneurysms.

Brain aneurysms are often asymptomatic. Many patients are only diagnosed with an aneurysm after undergoing a brain scan for yet another reason. Large unruptured aneurysms may cause mass effect, resulting in pain above and behind the eye, numbness or paralysis on one side of the face, difficulty in swallowing or vision changes. If an aneurysm in the brain ruptures, the condition is referred to as a "subarachnoid hemorrhage". This medical emergency is a life threatening condition and may result in temporary or permanent disability in a significant proportion of the survivors. If an aneurysm isperforated, patients may develop headache ("the worst headache of a person's life"), neck stiffness, loss of consciousness, neausea or vomiting, seizures, confusion, blurred vision, sensitivity to sound and light or elevated blood pressure. Therefore for patients with an unruptured aneurysm it is imperative to consult a specialist for the determination of the risk of rupture and get medical advice regarding treatment options or life style modifications with clinical follow-up.



To diagnose an aneurysm the following tests are used:

I. Computerized Tomography Angiography (CT scan or CAT scan using a dye or contrast): This is a regular brain scan with an intravenously injected contrast medium to create an image of the brain arteries. It typically takes 10 minutes to complete the scan.

2. Magnetic Resonance Imaging (MRI or MRA): This test uses radio waves to create images of your brain and its arteries. It takes about 30 minutes in a very noisy room but the test is painless and mostly does not require intravenous dye injection.

3. Cerebral angiography: This test utilizes x-rays to show how blood flows through your brain and provides both the best images to evaluate the aneurysm and also an opportunity to determine the eligibility for endovascular treatment. It is an invasive procedure in which your doctor inserts a thin plastic tube (catheter) through the groin or arm artery. The doctor then steers this tube to reach the arteries of the head and injects dye to see the arteries under x-ray. It takes about an hour and then requires admission to a recovery area for 4 to 6 hours.

The goal of the treatment is to prevent or minimize the risk of aneurysmal bleeding. Treatment options include open surgery (clipping) or endovascular treatment. Both of these options involve certain procedural risks so decisions regarding the treatment options need to be given after consultation with a neurovascular specialist. Surgery involves a craniotomy (opening the skull surgically), placing a clamp (clips) across the neck of the aneurysm, securing the skull bone in its original place and wound closure. The clamp prevents blood entry into the aneurysm, preventing rupture. Endovascular treatment is an angiographic procedure performed under general anesthesia, which starts by placement of a catheter in the groin artery. Then, the catheter is advanced within the artery to reach the aneurysm and special filling materials are inserted into the aneurysm through this catheter, or alternatively, devices called stents or flow-diverting stents are laid inside the artery to seal the aneurysm off. ve hair quality.