RECOGNIZE THE SYMPTOMS OF STROKE EARLY TO PREVENT DEATH AND DISABILITY

Stroke is an important cause of death and disability worldwide. According to WHO statistics, stroke is the third most common cause of death after heart disease and cancer. This brief article outlines the basics of treating a stroke.

Stroke is an emergency. **Don't wait** for the symptoms to recover as they more commonly progress. Like a heart attack, every minute after the onset of stroke counts. The most common kind of stroke, ischemic stroke, due to a brain clot can be treated with a simple intravenous drug called **tissue plasminogen activator (t-PA)**, commonly called “clotbuster” drug. It dissolves the clot blocking the blood flow in the artery. t-PA saves more lives and increases the chances of a better recovery. But it can only be given in the **first four and half hours from the stroke onset – the window period**. Of these 4½ hours the chances of recovery are best if the drug can be started in the first one hour of stroke onset. So it is important to recognize a stroke early and treat it as fast as possible.

The symptoms of stroke depend upon the region of the brain which is affected. **Symptoms can be mild or severe. The most common symptoms of stroke are:**

1. Sudden numbness of the face, arm or leg (especially on one side of the body)
2. Sudden weakness of arm or leg (paralysis)
3. Sudden difficulty in speaking or understanding speech; patient may look confused
4. Sudden trouble in vision with one or both eyes
5. Sudden trouble walking or loss of balance or dizziness
6. Sudden severe headache with no known cause

If a patient presents to any doctor with symptoms suggestive of stroke, the patient should be immediately referred to the nearest emergency for a plain CT of the head and examination by a neurologist. The neurologist after seeing the patient and the scan should be able to decide whether the patient can be given the t-PA. Contrary to popular belief, lengthy tests as blood work or MRI brain are NOT needed, except in special circumstance, to give t-PA.
Giant Acom Artery Aneurysm

More common in females than males and are less common in males. Ratio of ruptured to unruptured aneurysm is 5:3 to 5:6. Only 2% of the cerebral aneurysms are incidentally discovered. It results in bleeding inside the brain and the patient lapses into a coma. The exact incidence of aneurysms is difficult to estimate. Recent studies indicate the prevalence of aneurysms as 5%.

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The exact mechanism for the development of aneurysm is still controversial. In contrast to the blood vessels present in the other parts of our body, the blood vessels in our brain contains less elastic in the tunica media and adventitia and the media has less muscle(these are the layers of tissue present in the wall of blood vessel). Also the blood vessels lie in the subarachnoid space with little surrounding support tissue, which may predispose to the development of aneurysm. Cerebral aneurysms tend to arise in the branching point of the blood vessels.

WHAT ARE THE CAUSES FOR CEREBRAL ANEURYSMS?

The predisposing cause for cerebral aneurysms may be the following:

- Congenital predisposition (defect in the muscular layer of the wall of the blood vessel)
- Atherosclerotic or hypertensive
- Embolic as in atrial myxoma
- Infective- due to bacteria (mycotic aneurysm).
- Traumatic
- Associated with other conditions like:
  - Autosomal dominant polycystic kidney disease
  - Fibromuscular dysplasia
  - Arteriovenous malformation(congenital malformation of the blood vessels of the brain)
  - Marfan’s syndrome
  - Coarctation of aorta
  - Atherosclerosis
  - Bacteria endocarditis

WHAT IS AN ANEURYSM?

Aneurysm is a dilatation or bulging of a part of the wall of a blood vessel due to some defect. It may remain as such without causing any problem. When it enlarges and becomes big, there is tendency to rupture and cause devastating effects to the patient. Cerebral aneurysm is the aneurysm occurring in the blood vessels of the brain. When the cerebral aneurysm ruptures, it results in bleeding inside the brain and the patient lapses into coma. The exact incidence of aneurysms is difficult to estimate. Recent studies indicate the prevalence of aneurysms as 5%.

Ratio of ruptured to unruptured aneurysm is 5:3 to 5:6. Only 2% of the cerebral aneurysms occur in childhood. Aneurysms are more common in females than males and are less common in children.

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WHAT ARE THE SYMPTOMS OF CEREBRAL ANEURYSMS?

When the aneurysm is not ruptured, it produces no symptoms. Many aneurysms are discovered incidentally, when doing MRI scan for some other reasons. Rupture of the aneurysm causes various type of hemorrhage in the brain. They are:

- Subarachnoid hemorrhage (bleeding in between the outer covering layer of the brain)
- Intracerebral hemorrhage (in to the brain substance itself)
- Intraventricular hemorrhage occurs in 13-28 percent of the ruptured aneurysm cases. The prognosis appears to be worse for the patient in this category.
- Subdural hemorrhage.

The patient may have the following symptoms:

- Weakness of limbs or cranial nerve palsies due to pressure effect by large aneurysms compressing the adjacent nervous tissue.
- Visual loss.
- Facial pain syndromes that may mimic trigeminal neuralgia.
- Minor hemorrhage produces headache and neck pain.
- Transient blindness in one eye.
- Seizures.
- Sudden severe headache, which is the worst headache in their life time due to sudden enlargement of the aneurysm or rupture of the aneurysm.
- Some patients may lapse into coma due to severe bleeding and increased intracranial pressure.

WHAT ARE THE TREATMENT OPTIONS AVAILABLE FOR TREATING CEREBRAL ANEURYSM?

The best treatment option depends on the condition of the patient, the location of the aneurysms and the ability of the neurosurgeon. When patient comes with an unruptured aneurysm, surgical clipping of the aneurysms is the best treatment available. Endovascular treatment with guglielmi detachable coils is one of the treatment available where the coils are placed into the aneurysm sac and blocking it. Detachable balloons are also used in endovascular treatment.

ENDOSCOPIC TRANSSPHENOIDAL SURGERY

Endoscopic transnasal transphenoidal surgery (TSS) is a minimally invasive procedure in which your surgeon uses an endoscope to remove the pituitary tumor.

The benefits of TSS include the following:

- No incisions in your scalp, inside your nose or under your lip
- Minimal blood loss
- Low complication rate
- No nasal packing
- Tumors as large as 5 cm can be removed this way
- In most cases, the tumor can be removed without affecting the gland itself
- A majority of patients are discharged the day after surgery

Extended transphenoidal surgery is used to treat tumors in the brain that cannot be reached by the standard method. The benefit is that a craniotomy (temporary surgical removal of a part of the skull) is not needed.
CONSIDERATIONS
Anyone who has a pituitary adenoma (benign glandular tumor) that is causing health problems should consider treatment. There are two kinds of pituitary adenomas: secretory (meaning that they give off hormones) and non-secretory (meaning that they don’t).
- Secretory tumors cause problems for your endocrine system by releasing excess hormones into the bloodstream.
- Non-secretory tumors can cause vision problems by growing so large they press on your optic nerves, which can lead to a loss of peripheral vision.
Surgery is helpful for both kinds of pituitary tumors

EFFECTIVENESS
What is the chance of being cured?
It largely depends upon the type, size and location of the tumor. Smaller, non-secretory tumors are much easier to cure than larger tumors. However, a large non-secretory tumor that has not grown into the bone or sinus can also typically be cured.
- It's harder to cure a secreting tumor that has invaded the bone or the sinus.
- If the tumor has grown into an area where it is not possible or safe for the surgeon to operate, it may not be surgically curable.
- However, such tumors can often be surgically reduced in size so that they don't impinge upon the optic nerves and pituitary gland — this can protect your vision and hormonal function.
- Radiation treatment may be required to control further growth.
The experience and expertise of your pituitary surgeon also matter greatly in these delicate surgical procedures.

What are the risks involved with this treatment/procedure?
Pituitary and hormonal dysfunction, as well as loss of vision, can occur as a result of a growing tumor.

RISKS
- Damage to the carotid arteries leading to stroke or brain hemorrhage
- Loss of vision due to bleeding or damage to the optic nerves
- Cerebral spinal fluid leak, which can cause meningitis
The risk of all complications is higher with less experienced surgeons.

URGENCY
Occasionally, a pituitary tumor can bleed into itself, which causes it to rapidly expand, leading to symptoms such as a severe headache, loss of vision, double vision or a lazy eyelid.
The increased pressure on the pituitary gland can cause it to stop working, a condition called pituitary apoplexy. This is a life-threatening emergency. However, many of the negative effects of pituitary apoplexy can be reversed if emergency surgery is performed.

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