Difference Between Ischemic and Hemorrhagic Stroke
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Key Difference - Ischemic vs Hemorrhagic Stroke

A stroke is a derangement of brain functions as a result of an interruption to the blood supply of the brain. In ischemic strokes, this interruption is due to a blockage in a vessel whereas in hemorrhagic strokes there is damage to a vessel in the cerebral circulation which causes the leakage of blood into the extracellular space while depriving the neural tissues of vital factors such as oxygen. Thus, in ischemic strokes, the cerebral vessels are intact unlike in hemorrhagic strokes where one or more cerebral vessels are damaged. This is the key difference between the two varieties of strokes.

What is an Ischemic Stroke?

An ischemic stroke is the impairment of the blood supply to brain secondary to an obstruction in a cerebral vessel. A vast majority of the strokes are ischemic strokes.

Causes

- Thrombosis and embolism

Atrial fibrillation and arrhythmias leading to the formation of thrombi and their subsequent embolization is the commonest cause of strokes. Simultaneous infarcts in different vascular territories are a clear indication of a cardiac embolic stroke.

- Hypoperfusion
- Large artery stenosis
- Small vessel disease

Clinical Features

- There are loss motor control and sensation over different regions of the body depending on the area of the brain that is affected.
- Visual changes and deficits
- Dysarthria
- Loss of consciousness
- Facial Droop
Management

The gold standard treatment for the management of ischemic strokes is the administration of tPA. In addition to that mechanical thrombectomy is also performed occasionally to remove any clots that have lodged in the affected cerebral vessels.

What is a Hemorrhagic Stroke?

In a hemorrhagic stroke, the impairment of blood supply to the brain is due to damage to a vessel or vessels. Blood vessels with aneurysms and weak walls are more susceptible to get ruptured and give rise to hemorrhages inside the cranial cavity.

Causes

- Intracerebral hemorrhages
- Subarachnoid hemorrhages

These hemorrhages can be due to trauma, rupturing of aneurysms, arteriovenous malformations and etc.
Clinical Features

- In case of subarachnoid hemorrhages, there can be a sudden onset of a severe headache along with nausea, vomiting, syncope, and photophobia
- Clinical features observed in ischemic strokes can be seen in hemorrhagic strokes also.

Management

Surgical interventions are often required in the management of hemorrhagic strokes. The buildup of intracranial pressure has to be immediately stopped to prevent the herniation of brain tissues and irreversible damages to neural tissues.

Investigations

The following investigations are carried out for the diagnosis of strokes

- **MRI**
- **CT**
- Cerebral angiogram
- Echocardiogram
- Carotid ultrasound
What are the Similarities Between Ischemic and Hemorrhagic Stroke?

- Blood supply to the brain is compromised in both these types of strokes
- Investigations performed for the diagnosis of strokes include MRI, CT, cerebral angiogram, echocardiogram and carotid ultrasound.
- The following set of clinical symptoms and signs are observed in both forms of strokes
- There are loss motor control and sensation over different regions of the body depending on the area of the brain that is affected.
- Visual changes and deficits
- Dysarthria
- Loss of consciousness
- Facial Droop

What is the Difference Between Ischemic and Hemorrhagic Stroke?

<table>
<thead>
<tr>
<th>Ischemic Stroke vs Hemorrhagic Stroke</th>
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<td>Ischemic strokes are caused by,</td>
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<td>Rupture of aneurysms, arteriovenous malformations, and trauma are the main causes of hemorrhagic strokes.</td>
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Summary - Ischemic vs Hemorrhagic Stroke

When the cerebral blood supply is compromised, that is known as a stroke. An ischemic stroke is the impairment of blood supply to brain secondary to an obstruction in a cerebral vessel whereas a hemorrhagic stroke is the impairment of cerebral perfusion due to rupturing of a
vessel. Therefore the blood vessels are damaged only in the hemorrhagic strokes and not in the ischemic strokes. This is the difference between these two conditions.

Reference:


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