Arteriovenous Malformation

An arteriovenous malformation (AVM) is a disorder that has been present since birth (*congenital*). It is characterized by a complex, tangled web of arteries and veins. An AVM may occur in the brain, brainstem, or spinal cord.

CAUSES

It is caused by abnormal development of blood vessels.

SYMPTOMS

The most common problems (*symptoms*) of AVM include:

- Bleeding (*hemorrhaging*).
- Convulsions (*seizures*).
- Headaches.
- Neurological problems, such as:
  - Paralysis.
  - Loss of speech, memory, or vision.

TREATMENT

There are three general forms of treatment for AVM:

- Surgery.
- Embolization. This involves closing off the vessels of the AVM by injecting glue into them. Embolization is often used before surgery.
- Radiosurgery. This involves focusing radiation on the AVM.

AVMs that hemorrhage can lead to serious neurological problems, and sometimes death. But some people have AVMs that never cause problems.

RESEARCH BEING DONE

The NINDS conducts and supports a wide range of studies. These explore the complex mechanisms of normal brain development. The knowledge gained from these fundamental studies provides the foundation for understanding how this process can go awry. It offers hope for new ways to treat and prevent congenital disorders including AVM.

Research is continually being done to learn more about this problem.

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