

Moyamoya **vessels** are a distinctive feature of **Moyamoya disease**, a rare cerebrovascular disorder characterized by the narrowing or blockage of the major arteries in the brain, particularly in the **circle of Willis**, which is a critical vascular structure at the base of the brain. In response to the reduced **blood flow** caused by arterial narrowing, the brain attempts to compensate by developing a network of small, fragile, and often disorganized collateral blood vessels. These small blood vessels are known as "Moyamoya vessels."

The term "Moyamoya" is of Japanese origin and translates to "puff of smoke." This name is derived from the angiographic appearance of these collateral vessels, which may appear hazy and tangled, resembling a puff of smoke.

Moyamoya vessels serve as a natural bypass system to provide an alternative route for blood flow to reach areas of the brain that are poorly perfused due to the narrowed or blocked arteries. These collateral vessels are often more prone to bleeding and may be less efficient at delivering blood compared to the normal arteries they replace. They can be visualized using imaging techniques such as cerebral angiography, which allows doctors to diagnose Moyamoya disease.

The presence of Moyamoya vessels is a hallmark of Moyamoya disease, and their formation is a compensatory response by the brain to maintain adequate blood supply. However, their fragility and the disorganized nature of these collateral vessels can lead to an increased risk of intracranial hemorrhages (bleeding in the brain) and other neurological complications in individuals with Moyamoya disease.

Treatment for Moyamoya disease typically involves surgical procedures to improve blood flow to the brain. These procedures may include indirect bypass surgery, where an external blood vessel is used to redirect blood flow to the brain, or direct revascularization, which involves connecting a branch of an artery directly to the brain's blood vessels. The goal of treatment is to reduce the reliance on fragile Moyamoya vessels and provide more stable and efficient blood supply to the affected areas of the brain, thereby reducing the risk of stroke and other complications.

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