INTRODUCTION

An aneurysm is a localized persistent dilation of the wall of a blood vessel ***(Byrne and Guglielmi, 1998)***.

Understanding the microsurgical anatomy of the brain circulation and its neurovascular relationships is essential to the vascular neurosurgeon. The vessel direction, anatomic variations, location of perforating branches and the collateral network are relevant when dealing with intracranial anerysms ***(Rhoton et al., 2004)***.

Anterior circulation of the brain is the blood that is carried through the bilateral internal carotid artery system. It includes its branches and collaterals to the opposite side and to the posterior circulation ***(Rhoton et al., 2004)***.

The walls of intradural arteries are different from those of peripheral vessels because the adventitia is thin there is no external elastic lamina and the media is thin and absent at bifurcations. Medial defects appeared to explain the characteristic of saccular aneurysms to develop at arterial branch points ***(Byrne and Guglielmi, 1998).***

The incidence of an intracranial aneurysm in the general population has been reported to be between 1.5% and 8%. The peak age for aneurysmal rupture is between the fifth and seventh decade of life ***(Krex, 2003).***

The clinical picture of an intracranial aneurysms depends upon several factors, mainly the location of the aneurysm, its size whether it has ruptured or not and if it has, the amount of bleeding resulting from its rupture, the site of bleeding, the presence or absence of additional complications ***(Rosen, 2004).***

Symptoms can occur as a result of mass effect, thromboembolism seizures, or aneurysm rupture ***(Rosen, 2004).***

Recently Magnetic Resonant Angiography (M. R. A.) and 3 dimensional computerized tomographic angiography performed with helical computerized tomography scanner have been used for cerebral aneurysm detection ***(Klopfenstein, 2004).***

The standard method for treatment of intracranial aneurysms was surgical clipping. Until recently endovascular treatment was restricted to patients in whom the aneurysms were unsuitable for clipping because of the huge size and/or the location or in whom surgical clipping was relatively contraindicated ***(Suarez et al., 2006).***

Endovascular embolization has become an accepted adjunct or alternative therapy in the treatment of cerebral aneurysms and arteriovenous malformations, over the last few years; many different materials have been tested as occlusive agents in endovascular treatment. These occlusive materials, which include silk thread, polyvinyl alcohol particles, alcohol, detachable coils, and rapidly solidifying liquid adhesive polymers, have been used with varying degree of success ***(Canton et al., 2005)***.

Gugleilmi detachable coils (GDCs) were introduced in 1990 to occlude cerebral aneurysms via an endovascular approach. The devices consist of a platinum coil that is connected to a guide wire by an uninsulated junction. When a coil is correctly positioned in the aneurysm sac, an electrical current is set to generate an intra-aneurysm electrophoresis followd by electrolysis of the uninsulated part thereby releasing the coil ***(Canton et al., 2005)***.

Embolization performed using Gugleilmi detachable coils (GDCs) compared with surgical clipping is less invasive, less time consuming and probably less expensive in treating unruptured aneurysms. It avoids brain retraction associated with open surgery, which may be harmful in the swollen brain after acute hemorrhage ***(Suarez et al., 2006).***

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