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Cerebral angiitis following pipeline embolization device placement

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Pipeline™ Embolization Device (PED) is a flow-diverter stent used for the treatment of cerebral arterial aneurysms. It is a braided mesh cylinder comprising platinum and nickel-cobalt chromium alloy microfilaments. The PED carries a safety profile comparable to other cerebral stents and coil embolization devices. We report a case of localized cerebral angiitis (or arterial vasculitis) following treatment of a right-sided intracranial Internal Carotid Artery (ICA) aneurysm. The patient presented with new onset of unilateral headache one week after treatment. A Magnetic Resonance Imaging (MRI) of the brain showed signal abnormalities, vessel wall enhancement and irregular luminal stenosis just distal to the site of the PED. The possible aetiology may be a localized hypersensitivity vasculitis secondary to component metals such as cobalt, chromium and nickel. This hypothesis was supported by a reported history of skin reactions to ear rings (nickel alloys being one of the common components), which further substantiated the suspected aetiology. This case suggests that PED use may be complicated by hypersensitivity-related vasculitis, the incidence of which is not known and assumed to be rare. However, if it does occur, the outcome can be devastating. Special care should be taken in patients who have a history of possible metal allergies. Pre-procedural allergy testing may be considered in select cases.

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