Preoperative embolization of intracranial meningiomas with a fibrin glue preparation.

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Publication Date: 1999

Abstract:

BACKGROUND AND PURPOSE: Preoperative embolization expands the spectrum of meningioma that can be operated on safely. Our goal was to achieve the distalmost loading of the vascular bed and confluent tumor necrosis with a fibrin glue preparation in the preoperative embolization of meningiomas. METHODS: Between 1992 and 1997, 80 patients with a meningioma had diagnostic angiography with a standard transfemoral Seldinger technique, performed with a 6F guiding catheter and digital subtraction angiography. Preoperative embolization was carried out in the same session with an additional microcatheter system. Fibrin glue was the only component used. In all cases, CT was performed immediately after embolization; in nine patients, MR imaging was also performed. RESULTS: Angiography verified the elimination of tumor blush in all patients. The high-density areas seen on postembolization CT scans, caused by the fibrin glue dispersed in the embolized supply area, were found to be necrotic at surgery and were easily removed by suction. Two (2.5%) of the 80 patients had complications associated with embolization that resulted in neurologic deficits. CONCLUSION: The most effective preoperative embolization of tumors requires a distalmost loading of the vascular bed. Fibrin glue, which is easy to use and safe to handle, causes confluent tumor necrosis within the injected vascular territory.