

## Preoperative embolization of a cerebellar haemangioblastoma using Onyx: case report and literature review

### *Przedoperacyjna embolizacja naczyniaka płodowego mózdzku za pomocą preparatu Onyx: opis przypadku i przegląd piśmiennictwa*

Ki Seong Eom, Dae Won Kim, See Sung Choi, Keum Ha Choi, Tae Young Kim

Wonkwang University College of Medicine, Iksan, South Korea

Neurologia i Neurochirurgia Polska 2011; 45, 3: 292–296

#### Abstract

Haemangioblastoma is a slow-growing, highly vascular tumour and typically occurs in the cerebellum but can also occur in the brainstem and spinal cord. Because of their hypervascularity and location, cerebellar haemangioblastomas can be difficult to remove. The purpose of preoperative embolization of haemangioblastomas is to decrease the intraoperative blood loss and to facilitate excision. However, the safety and efficacy of this procedure remain controversial. Here, we report the case of a man with cerebellar haemangioblastoma who underwent preoperative embolization with Onyx. The tumour was completely removed with minimal tumour bleeding. There was no complication related to embolization.

**Key words:** haemangioblastoma, embolization, Onyx.

#### Introduction

Haemangioblastoma is a slow-growing, highly vascular tumour that accounts for 2% of all intracranial tumours. It typically occurs in the cerebellum but can also occur in the brainstem and spinal cord [1]. Because of their hypervascularity and location, cerebellar haemangioblastomas can be difficult to remove. Uncon-

#### Streszczenie

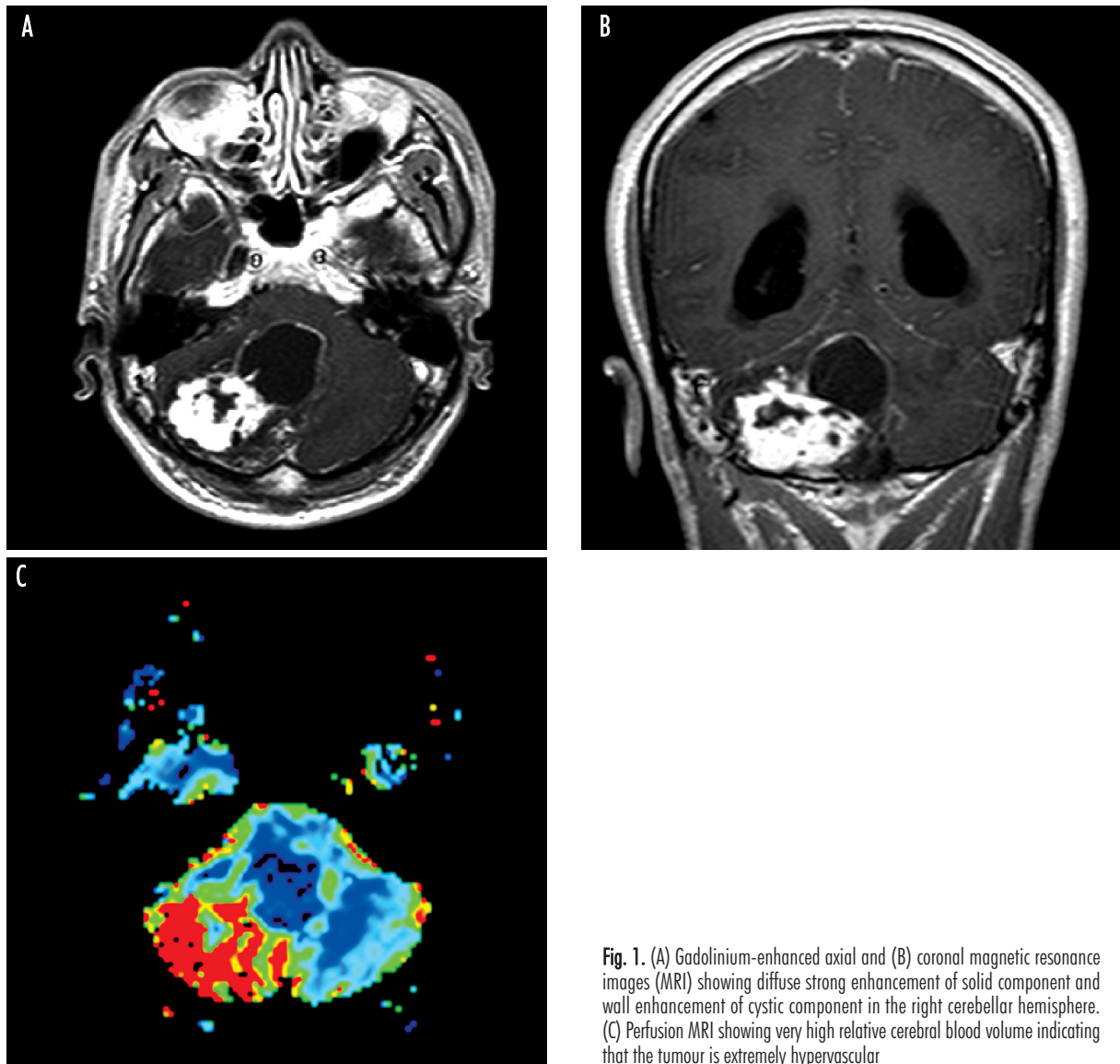
Naczyniak płodowy to wolno rosnący i bogato unaczyniony guz, który zwykle występuje w mózdzku, ale może również umiejscawiać się w pniu mózgu lub rdzeniu kręgowym. Chirurgiczne usunięcie naczyniaka płodowego może być trudne ze względu na jego bogate unaczynienie i umiejscowienie. Celem przedoperacyjnej embolizacji tego guza jest zmniejszenie utraty krwi podczas operacji i ułatwienie jego wycięcia. Bezpieczeństwo i skuteczność tej procedury są jednak przedmiotem kontrowersji. W pracy przedstawiono opis przypadku chorego z naczyniakiem płodowym mózdzku, u którego wykonano przedoperacyjną embolizację za pomocą preparatu Onyx. Guz następnie usunięto, krwawienie podczas operacji było niewielkie. Nie obserwowano powikłań związanych z embolizacją.

**Słowa kluczowe:** naczyniak płodowy, embolizacja, Onyx.

trollable bleeding during surgical removal of cerebellar haemangioblastomas is associated with high rates of morbidity and mortality. Although preoperative embolization of haemangioblastomas has been considered helpful in some cases [2,3], the safety and efficacy of this procedure remain controversial. Recently, some authors advocated that particle embolization of cerebellar haemangioblastomas is quite hazardous and recom-

Correspondence address: Prof. Tae Young Kim, Wonkwang University College of Medicine, 344-2 Shinyong-dong, 570-711 Iksan, South Korea, e-mail: tykim@wonkwang.ac.kr

Received: 8.11.2010; accepted: 24.01.2011



**Fig. 1.** (A) Gadolinium-enhanced axial and (B) coronal magnetic resonance images (MRI) showing diffuse strong enhancement of solid component and wall enhancement of cystic component in the right cerebellar hemisphere. (C) Perfusion MRI showing very high relative cerebral blood volume indicating that the tumour is extremely hypervascular

mended other embolization techniques such as transcranial intratumoural glue injection or transarterial proximal glue embolization [4,5]. Here, we report the case of a man with cerebellar haemangioblastoma who underwent preoperative embolization with Onyx, with a review of previous reports.

### Case report

A 44-year-old man who had been experiencing dizziness and gait disturbances for one month was admitted to our hospital. His medical and surgical histories were unremarkable. Cranial magnetic resonance imaging

(MRI) revealed a solid mass (size, 55 × 43 × 46 mm) with a large cyst in the right cerebellar hemisphere; the solid mass had a low signal intensity on the T1-weighted image and an inhomogeneous high signal intensity on the T2-weighted image. These images revealed diffuse strong enhancement of the solid component and wall enhancement of the cystic component after administration of a contrast agent, which suggested cerebellar haemangioblastoma. Multiple signal-void vascular structures within the tumour and obstructive hydrocephalus were noted. Perfusion MRI revealed very high relative cerebral blood volume, which indicated that the tumour was extremely hypervascular in nature (Fig. 1).

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