

**Results.** The highest level ( $169.5 \pm 7.9$ ) was detected in aneurysms, while the HA-level of non-aneurysmal vessels was lower ( $130.2 \pm 16.8$ ). Both vessel groups contained significantly higher HA than the normal cerebral arteries ( $32.9 \pm 2.1$ ).

**Conclusions.** Results suggest that an elevated hyaluronan level in the extracellular matrix may affect the cerebral arterial wall architecture. It is reasonable to suppose that the increased hyaluronan content creates a viscoelastic ECM which might improve the biomechanical resistance of the thinned vessel wall.

Key-words: Extracellular matrix, hyaluronan, cerebral aneurysm, digital densitometry.

### Endovascular treatment of trigeminal neuralgia caused by arteriovenous malformation: is surgery really necessary?

I. Wanke<sup>(1)</sup>, U. Dietrich<sup>(2)</sup>, F. Oppel<sup>(3)</sup>, M.J.A. Puchner<sup>(3)</sup>

(1) Neuroradiologie, Universitätsklinikum Essen, Germany.

(2) Neuroradiologie, Krankenanstalten Gilead, Bielefeld, Germany.

(3) Neurochirurgische Klinik, Krankenanstalten Gilead, Bielefeld, Germany.

Zentralbl Neurochir 2005; 66(4): 213-216

A case is presented with secondary trigeminal neuralgia (TN) caused by an arteriovenous malformation (AVM) of the cerebellopontine cistern, which was detected by radiological work-up for planned microvascular decompression. An AVM surrounding the trigeminal nerve was demonstrated on thin-slice heavily T<sub>2</sub>-weighted 3D-sequence on magnetic resonance imaging (MRI) and confirmed by angiography. The first therapeutic step was endovascular embolization with complete obliteration of the AVM and cessation of pain. Nevertheless surgical excision was performed in order to remove compressive vessels and to prevent a recurrence of pain.

Key-words: Trigeminal neuralgia, arteriovenous malformation, embolization, surgery.

### Symptomatic rotational occlusion of the vertebral artery — Case report and review of the literature

D. Netuka<sup>(1)</sup>, V. Bene<sup>(1)</sup>, R. Mikulík<sup>(2)</sup>, R. Kuba<sup>(2)</sup>

(1) Department of Neurosurgery, Charles University, 1<sup>st</sup> Faculty of Medicine, Central Military Hospital, Prague, Czech Republic.

(2) 1<sup>st</sup> Department of Neurology, Faculty of Medicine, Masaryk University, Brno, Czech Republic.

Zentralbl Neurochir 2005; 66(4): 217-222

**Background.** Intermittent symptomatic vertebral artery (VA) occlusion associated with voluntary turning of the head is known as bow hunter's stroke. A total of 40 such cases have been reported in the literature to date. We report a case successfully treated with surgical decompression and review the literature on this topic. Treatment options, including vertebral artery decompression and cervical fusion, are reviewed.

**Case report.** A 54-year-old Caucasian male experienced headache, vertigo, and nausea in the past 20 years whenever he turned his head to the right. In a neutral head position all symptoms immediately disappeared. Six years before admission to our department the patient complained that prolonged rotation to the right caused vertigo and nausea accompanied by right-sided hemianopia and transient right-sided hemiparesis. At that time, no treatment was recommended and hemianopia did not improve spontaneously. The patient was referred to our department in 2002. Angiography disclosed normal carotid arteries, occlusion of the right VA, while the left VA was patent in the neutral position. However, during head rotation to the right, the artery became occluded at the C1-2 level. The left vertebral artery at level C1-2 was decompressed.

**Result.** Postoperative angiography indicated patent left VA, both in the neutral position and during maximal rotation to the right. The patient is symptom-free for more than 24 months.

**Conclusion.** Surgical treatment of bow hunter's syndrome is easy and effective; this case should draw more attention to a very rare cause of VBI. The authors believe that vertebral artery decompression represents a more physiological treatment modality, and hence decompression is recommended as a first-line procedure.

Key-words: Vertebral artery, occlusion, rotation, vertebrobasilar insufficiency, bow hunter's stroke.