Scalp cirsoid aneurysm case reports

Abaunza-Camacho et al. described the case of a young woman with a ruptured Yokouchi type C scalp AVF with eyelid involvement.

The patient presented with hypovolemic shock and acute anemia due to severe bleeding from the lesion. Emergent treatment through a combined endovascular and open surgical approach was required to stop bleeding and stabilize the patient.

Emergent and effective treatment is required to stop bleeding when a scalp AVF ruptures. A combination of endovascular embolization and microsurgical excision of the shunt is a treatment option [1)].

A 44-year-old male presented with a mass in his left occipital region. Cerebral angiography led to a diagnosis of scalp arteriovenous malformation. Although he had no neurological deficits, perfusion computed tomography (CT) showed a slight decrease in blood flow in the left cerebral hemisphere, which was presumed to have been caused by the scalp arteriovenous malformation. He suffered from sleep disorder caused by tinnitus, and a discomfort with the lesion itself; therefore, they decided to surgically remove the lesion. In order to suppress intraoperative bleeding and safely perform the surgery, preoperative embolization was also planned. After treatment, he had no neurological deficits and sleep disorder improved. Perfusion CT performed after the surgery showed an improvement in cerebral blood flow in the left cerebral hemisphere.

Since cerebral blood flow may decrease depending on the progression of the lesion, the cerebral blood flow should be evaluated. Considering the treatment modalities depending on the lesion can provide treatment with less recurrence and higher patient satisfaction [2)].

A 23-year female, with no known comorbid, came to the Neurosurgery Department of the Hospital, with the complaint of swelling on her forehead for 5 years. The swelling was a result of minor trauma to head where she hit her head against a wall. The swelling grew in size with time; it was not associated with a headache, bleeding or signs of rupture. She was otherwise completely healthy and had no significant past clinical history. On examination, the swelling was serpentine shaped, 10 x 1.5 cm extending from vertex to glabella. There was decreased hair growth in the area but no discoloration of the skin. The swelling was superficial, soft, non-tender, non-mobile, but fluctuating and pulsatile. On auscultation, a bruit alongwith a machinery murmur was heard over the swelling. Vitals were within normal limits and the rest of the examination was unremarkable. The diagnosis of a cirsoid aneurysm was made based on findings seen in CT angiogram. The angiogram showed a fistulous communication and the main feeding arteries were found to be superficial temporal and supraorbital arteries. There was no evidence of the involvement of sagittal sinus; however, small communication with calvarial emissary veins was noted. The patient was planned for 'en bloc' resection and the operation was performed by the neurosurgical team of our Hospital. During the operation, a U-shaped incision was applied which exposed the frontal region of the scalp, smaller scalp vessels were cauterised. No major connections with intracranial dural sinuses were found. The major vessels that were ligated and resected were the superficial temporal artery and the supraorbital artery. There were no operative or postoperative complications encountered. The patient showed remarkable recovery and was discharged on account of satisfactory condition [3)].

A 6-year old boy who presented with recalcitrant generalized tonic-clonic seizures and clinico radiological features of congenital Cirsoid aneurysm. The lesion was supplied by occipital arteries and a large right parietal parasagittal intracranial feeding artery in a Yokouchi type C pattern. The venous drainage was communicating with the posterior part of the superior sagittal sinus. Six months after successful ligation of the feeding arteries and complete surgical excision of the lesion, the patient remains seizure-free [4].

2018

A 42-year-old patient who presented with a progressive worsening of visual acuity in the right eye (lower quadrantanopia) and palpebral ptosis. Physical examination revealed a right exophthalmos and a right frontoparietal scalp soft swelling when the patient was in the supine position. Neurologic work-up showed a scalp AVM extending into the orbit and connected to an intraorbital cavernous angioma. The patient was treated with a frontotemporal craniotomy and decompression of the orbit.

In the rare case of intraorbital extension of a scalp AVM, neurologic symptoms may appear when the size of the vascular malformation increases with age. The aims of surgery should be decompression of the orbit and aesthetic preservation, rather than complete excision [5].

2016

A 21-year-old man presented with a right-sided bruit and an enlarging palpable, pulsatile scalp mass. Magnetic resonance imaging demonstrated a 5-cm right sAVM and an azygos anterior cerebral artery (ACA) feeding a 2-cm parafalcine vascular anomaly, as well as an unruptured 3-mm, flow-related, distal ACA aneurysm. sAVM feeders were catheterized and embolized with Onyx 18. During resection of the right frontal scalp lesion, dissection below the pericranium was developed to expose the low-flow extracranial sAVM. A supratrochlear arterial feeder and the vascular nidus were coagulated, but radical resection was avoided to prevent scalp necrosis. An anterior right frontal parasagittal craniotomy and dural opening were performed. A developmental anomaly of the right superior frontal gyrus was noted, and a dense vascular network within the anterior parafalcine fold was excised and coagulated. The distal ACA aneurysm was cauterized and wrapped to preserve the parent artery. The patient made an excellent recovery without neurologic deficits.

A review of the literature demonstrated a variety of endovascular and open surgical treatments with limited consensus on standard care. While sAVMs have been described in the literature, the combination of the diverse conditions seen in this case is unique [6].

Worm et al, present a case of giant scalp AVMs and its management, followed by a brief literature review on the subject. The diagnosis of scalp AVMs is based on physical examination and confirmed by internal and external carotid angiography or computed tomographic angiography (CTA). Surgical excision is especially effective in scalp AVMs, and is the most frequently used treatment modality [7].

2009

Massimi et al. report on the unusual case of a child harboring a complex intracranial AVM that initially presented as a small scalp mass. Actually, this young boy came to the authors' attention just for a small, soft, pulsatile, and reducible mass of the vertex that produced a circumscribed bone erosion. The presence of macrocranium and venous engorgement of the face, however, suggested the presence of an intracranial “mass.” The neuroimaging investigations pointed out a temporal AVM causing dilation of the intracranial sinuses and ectasia of the vein of the scalp; one of the veins was appreciable as a lump on the vertex [8)].

2008

A 35-year-old man presented with occipital subcutaneous pulsatile thrill. Senoglu et al. discussed and illustrated a rare sAVF, which was a high-flow sAVF fed by the occipital branch of the right ACE draining intraosseously into the SS. The case was treated by surgical origin ligation.

This case was unusual in the sense that it was apparently spontaneous, and the major venous drainage was through the bone into the SS. Arterial supply pattern of sAVF is very important in therapeutic decision-making. We suggest that surgical origin ligation for sAVF be considered if the case has 1 feeding artery [9)].

2007

Craniofacial cirsoid aneurysm: 2-stage treatment [10)].

2004

A 21-year-old female consulted in 1998 complaining of right tinnitus and a pulsating mass in the retroauricular region. The initial angiogram revealed an AVM in the right temporo-parietal subcutaneous space with feeders from the STA, an occipital artery, a posterior auricular artery, and a middle meningeal artery (MMA). Three years later, she complained of enlargement of the lesion, increased tinnitus, and alopecia. Repeat angiographic study revealed the presence of a nidus and the appearance of new feeders from a contralateral MMA and an ipsilateral middle cerebral artery; there was a de novo saccular aneurysm in the right STA. On the day preceding surgery, the left MMA was embolized to control intraoperative bleeding. The AVM was removed totally without any dermal complications.

This case suggests that scalp AVMs can become enlarged by capturing subcutaneous or intracranial feeders, and that the consequent hemodynamic stress may induce de novo aneurysms in scalp AVMs. Capillary endothelial cells were strongly immunostained for vascular endothelial growth factor [11)].

1990

Heilman et al. report a patient in whom a large traumatic cirsoid aneurysm of the scalp was eliminated using a combined neurosurgical and interventional neuroradiological approach.

Transarterial embolization was utilized to reduce arterial blood supply to the fistula. Thrombogenic Gianturco spring coils were then introduced via direct percutaneous puncture of the aneurysm. The aneurysm thrombosed and the multiple tortuous scalp vessels disappeared. One month after embolization, a small area of skin necrosis over the aneurysm necessitated surgical excision of the lesion. The thrombosed aneurysm was easily resected with minimal blood loss. Percutaneous embolization with thrombogenic coils in this case was a safe and effective ablative technique [12)].

1)

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10)

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11)

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