Congenital Facial Arteriovenous Fistula Successfully Treated by Tranarterial Embolization: a case report

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It is difficult to manage arteriovenous malformations or fistulas of the face because of the abundant vascular network in this region. They are commonly manifest in childhood or adolescence and often present with significant hemorrhage or cosmetic defects. We report a one-year-old infant with a facial arteriovenous fistula. It is successfully treated by transarterial embolization with metallic coils, resulting in clinical and angiographical improvement.

Key words: Arteriovenous malformation, therapeutic embolization; Face

Arteriovenous malformations (AVMs) or arteriovenous fistulas (AVFs) of the head and neck are quite rare in contrast to low-flow vascular malformations. They are 20 times more common in the intracranial vasculature than in that served by the external carotid arteries [1]. Cervicofacial involvement is most common in the cheeks, ears, nose, and forehead, in descending order of prevalence. The primary pathology occurs at the capillary level, where arteriovenous shunting occurs. Engorged feeding arteries and drainage veins result from uncontrolled shunting through these channels. They are rarely symptomatic in the neonatal or infant period, but most commonly discovered in late childhood, adolescence, or early adulthood. AVMs / AVFs manifest as warm, firm masses with thrills, bruits, and pulsatility.

Treatment of these high-flow vascular anomalies is complex and has a predictably high incidence of recurrence if not managed correctly. Intervention is indicated for complications such as pain, haemorrhage, pressure symptoms, ischaemic ulceration and even congestive cardiac failure.

CASE REPORT

A 1-year-old infant had suffered from a pulsatile lesion over right preauricular area for several months. There was an erythematous blush of the skin overlying the lesion. Physical examination revealed a remarkably palpable thrill with continuous murmur at right preauricular area. Digital subtraction angiography with selective right external carotid arteriography revealed arteriovenous fistula between right internal maxillary artery and right external jugular vein (Fig. 1). After the feeding arteries were identified, transarterial embolization with two 5mm spring coils was performed to embolize the fistula (Fig. 2). The thrill in preauricular region disappeared immediately. Post-embolization angiogram showed complete disappearance of the
fistula (Fig. 3). The patient recovered without complication. No recurrence of the lesion was seen on subsequent clinical examination.

**DISCUSSION**

AVFs occur most often in the carotid cavernous fistula and vertebral fistula, rarely in external carotid fistula. AVMs / AVFs of the face or neck are high-flow vascular malformations and have a rich arterial network fed by branches of the external carotid artery. There are two types of arteriovenous fistulas, congenital and acquired. A congenital arteriovenous fistula is uncommon and one that formed during fetal develop-
Congenital arteriovenous fistula of the internal maxillary artery in an infant is rare. Early recognition and proper treatment are essential for an acceptable long term outcome. The case we present here demonstrates a quick and successful method of closing an AVF by the transvascular embolization with coils.

REFERENCES

成功栓塞治療先天性臉部動靜脈瘻管

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臉部動靜脈畸型或瘻管因為內含大量血管網，導致很難處理。通常在兒童時期或青少年期
開始表現明顯，時常伴隨有出血或臉部美觀的問題。我們提出一個病例報告有關一個有先天性
臉部動靜脈瘻管的一歲嬰兒，成功用金屬線圈栓塞治療。治療後不論臨床症狀與血管攝影方面
都有顯著改善。

關鍵詞：動靜脈瘻管，栓塞；臉部