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· 中山眼科中心病例挑战专栏 ·

高处坠落伤后颈动脉海绵窦瘘1例

许寅聪, 王超英

(白求恩国际和平医院眼科, 石家庄 050000)

[摘要] 患者青年女性, 工作时不慎从4 m高处跌落, 伤后1周眼科检查时发现左眼上睑下垂、眼球固定、眼球突出、结膜下出血, 复视, 伤后2周进展为右眼结膜下出血水肿, 并出现左侧搏动性血管杂音, 进行全脑血管造影证实为左侧颈动脉海绵窦瘘, 并予以介入海绵窦瘘栓塞术治疗, 治疗效果满意后出院。

[关键词] 坠落伤; 颈动脉海绵窦瘘; 上睑下垂; 海绵窦瘘栓塞术

A case report of carotid-cavernous fistulas after high falling injury

XU Yincong, WANG Chaoying

(Department of Ophthalmology, Bethune International Peace Hospital, Shijiazhuang 050000, China)

Abstract The patient, a young woman, was referred to ophthalmology department at 1 week after her falling from 4 meters high during her work. Her left eye was diagnosed with ptosis, eyeball fixation, exophthalmos, subconjunctival hemorrhage and diplopia. After 2 weeks, her conditions progressed to subconjunctival hemorrhage and edema of the right eye, with pulsatile vascular murmur on the left side. Left carotid-cavernous fistula was confirmed with digital subtraction angiography, and treated with interventional embolization. Satisfactory outcomes were obtained and the patient was discharged.

Keywords falling injury; carotid-cavernous fistula; ptosis; embolization treatment of cavernous fistula

外伤性颈动脉海绵窦瘘指外伤导致颈内动脉海绵窦段或其分支破裂, 与海绵窦之间形成的异常交通^[1]。动静脉瘘的出现会引起海绵窦内压力增高, 进而出现搏动性突眼、眼睑下垂、眼球运动障碍、血管杂音等表现^[2]。白求恩国际和平医院收治了1例外伤性颈动脉海绵窦瘘, 现报告如下。

1 临床资料

患者, 女, 因工作时不慎从4 m高处跌落, 当即感右腕部及头面部疼痛伴恶心、呕吐, 无意识丧失, 伤后自觉睁眼困难, 视物重影入住白求恩国际和平医院骨科。无既往史。入院诊断:

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通信作者 (Corresponding author): 王超英, Email: Wanghc191@sina.com

1)高处坠落伤; 2)右桡骨远端骨折; 3)下颌骨骨折; 4)脑震荡。伤后1周眼科第1次会诊, 主诉: 左眼睁眼困难, 视物重影6 d。因卧床(图1)粗查视力, 指数/1 m以上(双), 右眼前节未见明显异常。左眼睑轻度肿胀, 上睑缘遮盖2/3瞳孔区, 结膜下片状出血, 余(-)。眼球运动: 右眼球运动正常, 左眼各方向运动均受限。眼球突出度: 15~17/101 mm。头颅CT及MRI均未见明显异常(图2)。

常(图2)。

伤后2周眼科第2次会诊(图1), 主诉: 右眼红2 d, 左眼睁眼困难, 视物重影2周。视力: 右1.0, 左0.8。眼前节情况见图3~8。眼压: 右20.5 mmHg(1 mmHg=0.133 kPa), 左21.9 mmHg。眼球突出度: 15~18/101 mm。追问病史, 近1周左侧眼眶总有轰轰的声音, 左眼听诊可闻及搏动性血管杂音。怀疑左侧外伤性颈动脉海绵窦瘘。

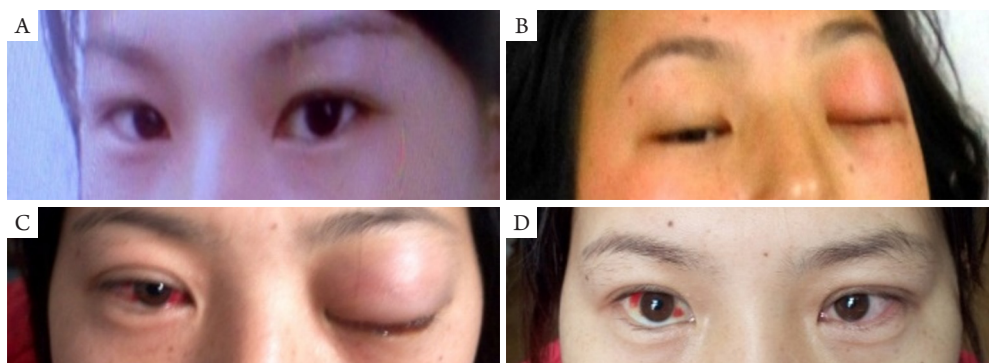


图1 受伤后患者转归外观照片

Figure 1 Images of appearance of the patient's outcome after the injury

(A)受伤前; (B)受伤后1周; (C)受伤后2周; (D)手术后3 d。

(A) Before the injury; (B) 1 week after the injury; (C) 2 weeks after the injury; (D) 3 days after the surgery.

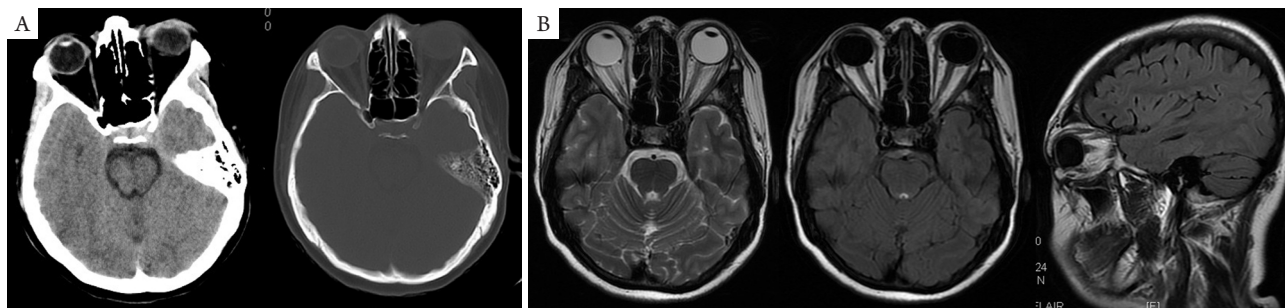


图2 伤后1周头颅、眼眶CT(A)及MRI(B)均未见明显异常

Figure 2 CT (A) and MRI (B) images of the skull and eye orbit at 1 week after the injury with no obvious abnormality



图3 左眼上睑下垂

Figure 3 Ptosis of the left eye

安排行全脑血管造影检查(图9)。确诊为左侧外伤性颈动脉海绵窦瘘。建议行左侧颈内动脉造影加海绵窦瘘栓塞术(图10)。

左侧颈内动脉造影加海绵窦瘘栓塞术治疗3 d后第3次眼科会诊(图1), 查体视力: 右1.0, 左1.0。眼前节及眼球运动情况见图11~12。眼压: 右16.5 mmHg, 左14.9 mmHg。眼球突出度: 15~16/101 mm, 左眼听诊: 搏动性血管杂音消失。患者治愈出院。

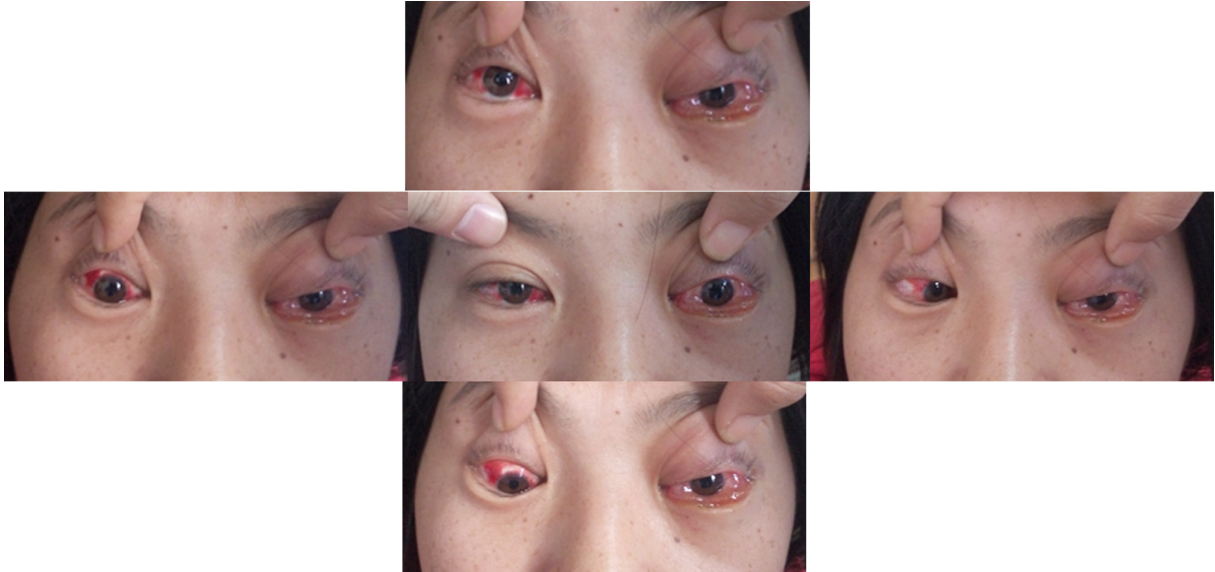


图4 左眼球固定
Figure 4 Fixation of the left eyeball

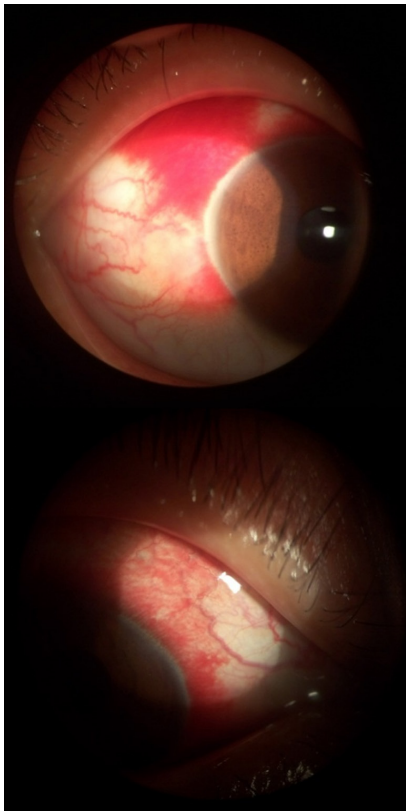


图5 右结膜下片状出血，结膜血管迂曲
Figure 5 Subconjunctival lamellar hemorrhage and tortuous conjunctival vessels were observed in the right eye

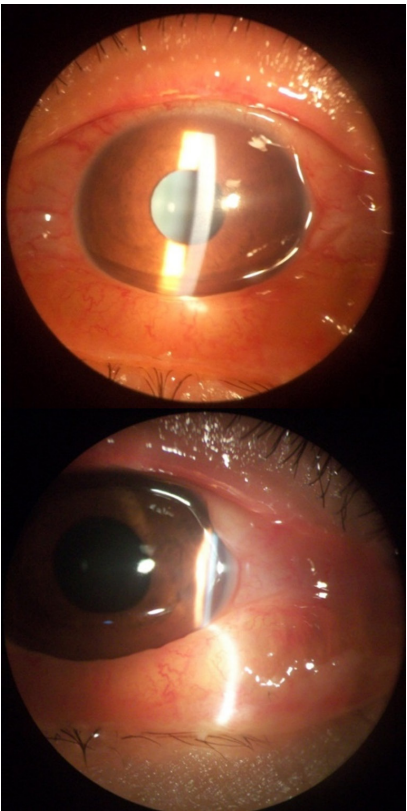


图6 左球结膜充血水肿突出于眼睑外，结膜血管迂曲扩张明显加重，结膜下片状出血
Figure 6 Conjunctival congestion, edema, exophthalmos, tortuous and dilated conjunctival vessels and subconjunctival lamellar hemorrhage were observed in the left eyeball



图7 双眼A/V 1:2, 静脉迂曲, 静脉迂曲程度左眼明显重于右眼, 未见明显出血, 渗出, 黄斑反光可见

Figure 7 Binocular A/V 1:2, the veins were tortuous, and the left eye had higher degree of tortuosity than the left one, with no obvious bleeding and exudation, and the macula was visible

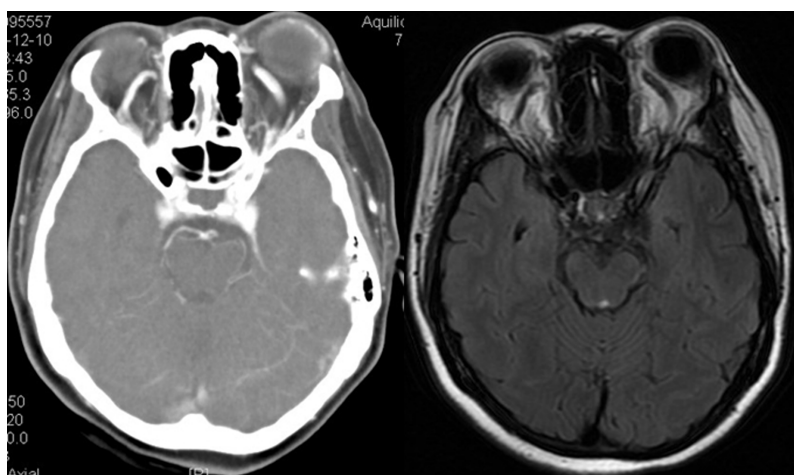


图8 增强眼眶CT可见双眼粗大的眶上静脉

Figure 8 Enhanced CT scan of the orbit showed enlarged suprabulbar veins of bilateral eyes

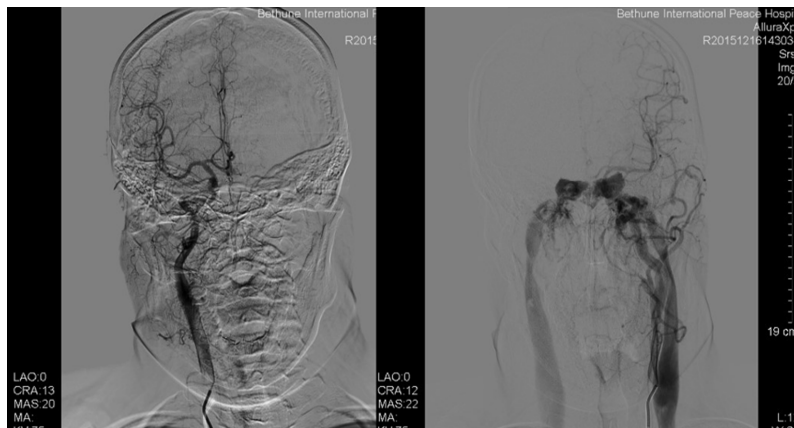


图9 造影显示右侧颈动脉、大脑中动脉及大脑前动脉显影未见异常, 左侧颈内动脉海绵窦段动脉期可见海绵窦早期显影, 左侧大脑中动脉及前动脉显影欠佳, 血流分别经过眼上静脉及岩下静脉汇入颈内静脉

Figure 9 Angiography demonstrated no abnormality in the development of right carotid artery, middle cerebral artery and anterior cerebral artery. Early development of cavernous sinus could be seen in the left internal carotid cavernous sinus of arterial phase; the development of left middle cerebral artery and anterior cerebral artery was poor, and blood flowed through superior ophthalmic vein and inferior petrosal vein to converge in jugular internal vein

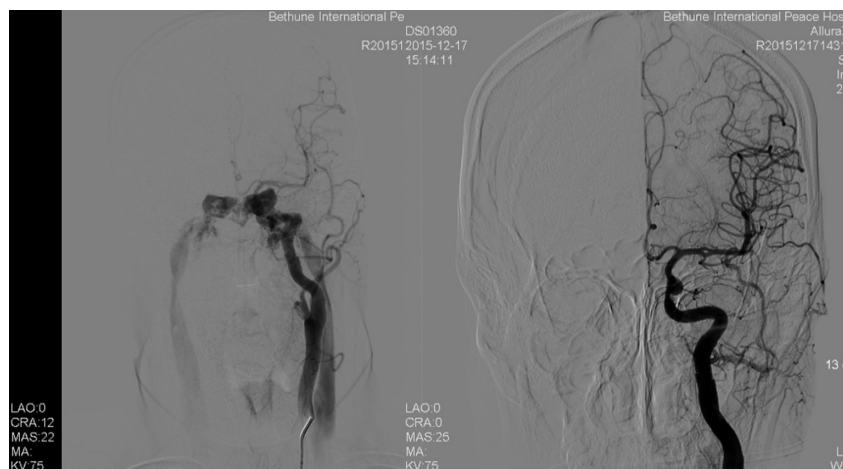


图10 造影显示左侧颈内动脉海绵窦段动脉期可见海绵窦早期显影, 左侧大脑中动脉及前动脉显影欠佳, 血流经过眼上静脉及岩下静脉汇入颈内静脉, 予以可脱卸金球囊通过颈内动脉瘘进入海绵窦, 充盈球囊, 重复造影显示瘘口消失, 远端血管血流通畅

Figure 10 Angiography demonstrated early development of cavernous sinus in the left internal carotid cavernous sinus of arterial phase. The development of left middle cerebral artery and anterior cerebral artery was poor, and blood flowed through superior ophthalmic vein and inferior petrosal vein to converge in jugular internal vein. Detachable gold balloon accessed into the cavernous sinus through internal carotid artery, filled the balloon, then repeated angiography. It showed that the fistula disappeared and blood flow in the distal vessels was unobstructed

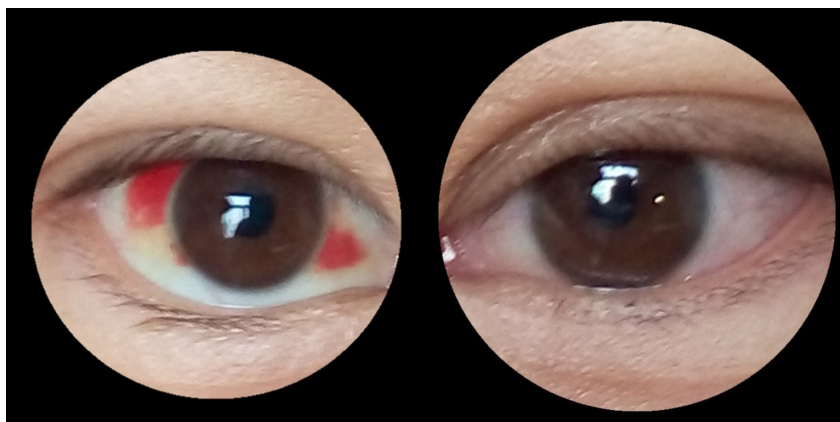


图11 右眼睑无红肿, 结膜血管迂曲消失, 结膜下片状出血, 左眼睑肿胀明显减轻, 球结膜充血, 结膜血管迂曲扩张明显减轻, 结膜下片状出血

Figure 11 No redness and swelling were noted in the right eyelid, the tortuous conjunctival vessels disappeared, with subconjunctival lamellar hemorrhage. The swelling of the left eyelid was significantly alleviated; hyperemia of bulbar conjunctiva could be seen. The tortuosity and expansion of conjunctival vessels were significantly alleviated, with subconjunctival lamellar hemorrhage

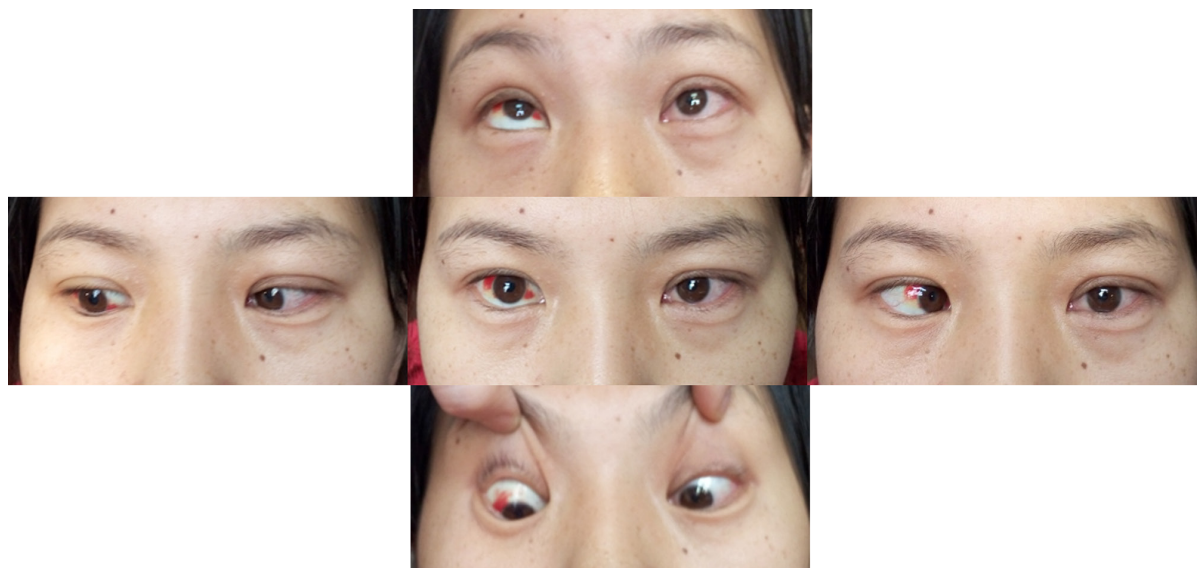


图12 左眼上睑下垂缓解, 眼球运动各方向均有所恢复, 外转轻度受限

Figure 12 Ptosis in the left eye was relieved, and eyeball movements in each direction were restored, with slightly restricted external rotation

2 讨论

颈内动脉海绵窦瘘按照病因分为外伤性颈动脉海绵窦瘘与自发性颈动脉海绵窦瘘, 前者约占80%, 自发者不到20%^[3]。按照临床症状严重程度分为高流量型和低流量型^[4]。本例患者外伤导致的颈内动脉直接破裂为高流量型。

临床上眼部症状常为颈动脉海绵窦瘘的首发症状, 多因外伤后颈内动脉海绵窦瘘段及分支破裂或横断, 大量动脉血通过瘘口涌入海绵窦, 导致海绵窦区静脉回流受阻及神经受压麻痹。除眼部的搏动性突眼、眼球运动障碍、球结膜充血水肿、视力障碍外, 还常表现为颅内血管杂音、头痛、鼻出血、颅内出血、脑缺血等损害症状^[5]。

头部数字减影血管造影(digital subtraction angiography, DSA)是诊断颈动脉海绵窦瘘的金标准^[6], 既可显示供血血管、瘘口位置、大小及静脉情况, 还可为制定栓塞方案提供依据。其治疗的主要目的是封闭瘘口, 恢复正常血流, 目前多采用血管介入栓塞治疗的方法。其中最为常用的为可脱性球囊栓塞术^[7-8], 具有方法简单、并发症少、效果肯定、费用相对低的优点, 但不适用于瘘口过大、多瘘口或海绵窦内有骨折的患者, 该类患者可选用微弹簧圈栓塞、液态栓塞材料Onyx胶、覆膜支架等^[9]。

本病例从外伤发病到确诊记录较为完善, 最终采用DSA造影确诊后, 选用可脱性球囊栓塞术治疗, 效果良好。

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