

## 颅内上皮样血管内皮瘤二例报告并文献复习

方军超 苏少波 孙翠云 岳树源

**【摘要】** 研究背景 颅内上皮样血管内皮瘤是一种临床罕见的低度恶性肿瘤。本文回顾分析2例颅内上皮样血管内皮瘤患者临床资料,复习相关文献,对其临床病理学特征、诊断与鉴别诊断、治疗及预后进行总结。**方法与结果** 2例患者分别以脑出血和脑膜瘤术后复发就诊,影像学分别提示左侧额叶血肿和脑膜瘤复发,遂行颅内血肿清除术+去骨瓣减压术+肿瘤全切除术以及肿瘤次全切除术。术后病理证实为上皮样血管内皮瘤。免疫组织化学染色,肿瘤细胞表达内皮细胞标志物(CD34、凝血因子Ⅷ相关抗原,以及CD31、波形蛋白、Fli-1),不表达细胞角蛋白和上皮膜抗原。1例术后1年随访肿瘤无复发;1例术后辅助放射治疗,3个月后肿瘤转移。**结论** 颅内上皮样血管内皮瘤是一种临床罕见的生物学行为介于良恶性之间的血管性肿瘤,症状与体征多与占位效应相关,影像学表现无明显特征性,术前明确诊断困难,难以与其他颅内肿瘤相鉴别,明确诊断依靠组织病理学特征。手术全切除是首选治疗方法,若肿瘤全切除,可定期随访观察;若肿瘤未全切除,术后应辅助放射治疗或药物化疗。

**【关键词】** 血管内皮瘤,上皮样; 脑肿瘤; 神经外科手术

### Intracranial epithelioid hemangioendothelioma: two cases report and literature review

FANG Jun-chao<sup>1</sup>, SU Shao-bo<sup>1</sup>, SUN Cui-yun<sup>2</sup>, YUE Shu-yuan<sup>1</sup>

<sup>1</sup>Department of Neurosurgery, <sup>2</sup>Tianjin Neurological Institute, Tianjin Medical University General Hospital, Tianjin 300052, China

Corresponding author: YUE Shu-yuan (Email: yueshuyuan@163.com)

**【Abstract】** **Background** Epithelioid hemangioendothelioma is an uncommon low-grade malignant tumor with various biological behaviors. This paper retrospectively analyzed the clinical data of 2 cases with epithelioid hemangioendothelioma which were confirmed by histopathological features, and reviewed relevant literatures, so as to summarize clinical and radiological features, diagnosis and differential diagnosis, treatment and prognosis of this disease. **Methods and Results** The tumor in Case 1 was cystic accompanied with hemorrhage. Hematoma clearance, decompressive craniectomy and total removal of the tumor were performed. The tumor in Case 2 was misdiagnosed as meningioma firstly, and craniotomy was implemented to remove the tumor. But 8 months later, the tumor relapsed. The tumor was vascularized in operation and subtotaly removed with moderate blood loss. Postoperative pathological diagnosis revealed epithelioid hemangioendothelioma in both cases. Immunohistochemical staining showed the tumor cells were positive for CD34, FVIII RAg in Case 1, while CD31, vimentin (Vim) and Fli-1 in Case 2, and both negative for cytokeratin (CK) and epithelial membrane antigen (EMA). Case 1 was followed up for one year, and no recurrence was found. Case 2 received postoperative auxiliary radiotherapy, but tumor metastasis was found 3 months later. **Conclusions** Epithelioid hemangioendothelioma is a unique vascular tumor characterized by proliferation of epithelioid or histiocytoid endothelial cells. The histopathological features and biological behaviors are intermediate between hemangioma and angiosarcoma, and its intracranial occurrence is extremely rare. A preoperative diagnosis is usually difficult because of lacking characteristic clinical and radiological features. Diagnosis mainly depends on histopathology and immunohistochemistry. Gross resection is currently the firstline treatment for these tumors. Otherwise, adjuvant therapies are required. The prognosis of this disease has not yet been well defined.

**【Key words】** Hemangioendothelioma, epithelioid; Brain neoplasms; Neurosurgical procedures

doi:10.3969/j.issn.1672-6731.2015.09.012

作者单位:300052 天津医科大学总医院神经外科(方军超、苏少波、岳树源),天津市神经病学研究所(孙翠云)

通讯作者:岳树源(Email:yueshuyuan@163.com)

上皮样血管内皮瘤(EHE)是一种临床罕见的介于良性血管瘤与恶性血管肉瘤之间的低度恶性血管性肿瘤<sup>[1]</sup>,好发于软组织,原发于中枢神经系统者极罕见<sup>[2]</sup>。天津医科大学总医院神经外科2013年6~8月诊断与治疗2例经病理证实的颅内上皮样血管内皮瘤患者,结合文献总结其临床病理学特点、诊断与鉴别诊断、治疗及预后情况。

### 临床资料

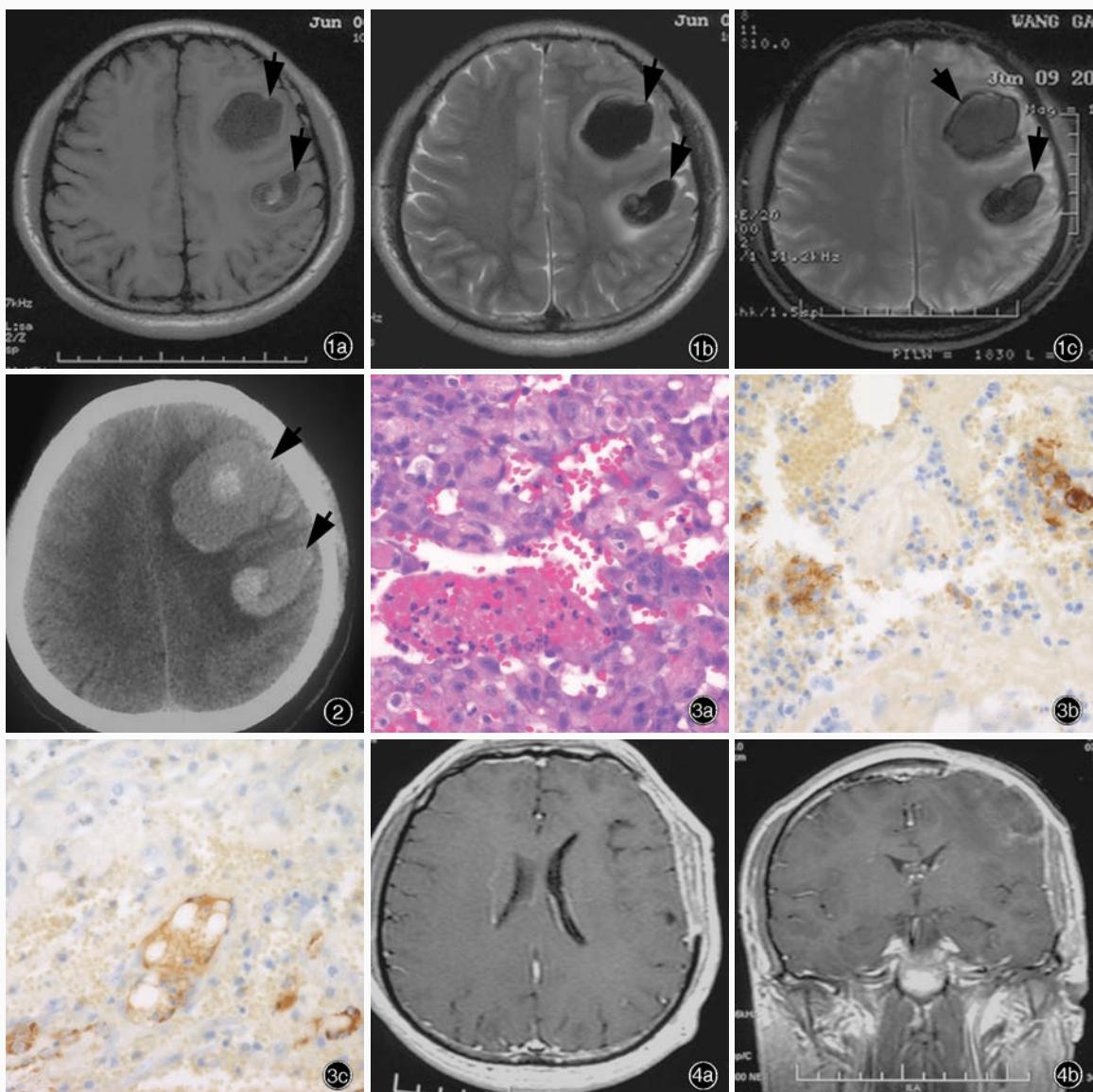
**例1** 男性患者,34岁,主因言语不清伴右侧肢体无力3 d、意识障碍6 h,于2013年6月12日入院。患者入院前3 d无明显诱因出现言语不清,同时伴右侧肢体无力,不伴恶心、呕吐、头痛等症状,当地医院行头部CT检查可见左侧额叶高密度影,考虑脑出血。为求进一步诊断与治疗,至我院神经内科就诊。入院时体格检查:神志清楚,言语模糊,右侧中枢性面瘫,右侧肢体肌力4级、左侧肢体5级,肌张力正常,生理反射存在,病理征未引出。实验室检查:血常规红细胞计数 $3.78 \times 10^{12}/\text{L}$ [(4.30~5.80) $\times 10^{12}/\text{L}$ ]、白细胞计数为 $10.54 \times 10^9/\text{L}$ [(3.50~9.50) $\times 10^9/\text{L}$ ]、血小板计数为 $189 \times 10^9/\text{L}$ [(125~350) $\times 10^9/\text{L}$ ]、凝血功能试验凝血酶原时间(PT)10.10 s(9.50~15.00 s)、活化部分凝血活酶时间(APTT)27.30 s(20~40 s)、国际标准化比值(INR)0.94(0.80~1.50)、纤维蛋白原水平2.18 g/L(1.80~4.00 g/L),D-二聚体8 mg/L(0~0.50 mg/L)。头部MRI扫描左侧额叶可见2个类圆形等T<sub>1</sub>、短T<sub>2</sub>混杂信号影,考虑左侧额叶多发性急性期血肿(图1),予甘露醇250 ml(2次/d)、泮托拉唑40 mg(2次/d)和醒脑静注射液30 ml(1次/d)静脉滴注1 d。治疗期间,患者意识障碍和肢体无力加重,复查CT显示左侧额叶血肿较前增多(图2)。神经外科会诊,体格检查:呈昏迷状态,刺激能发声,右侧肢体肌力1级、左侧5级,肌张力均正常,右侧病理征阳性。临床诊断为左侧额叶多发性血肿,不排除瘤卒中。急诊于全身麻醉下行颅内血肿清除术+去骨瓣减压术,术中可见一囊性血肿,囊壁较规则,与周围脑组织粘连,清除血肿,切除囊壁,行组织病理学检查。术后病理学检查提示上皮样血管内皮瘤(图3a),免疫组织化学染色CD34呈强阳性(图3b)、凝血因子Ⅷ相关抗原(FⅧRAg)阳性(图3c),细胞角蛋白(CK)和上皮膜抗原(EMA)阴性。患者共住院20 d,出院时头部切口愈合良好,神志清楚,言语欠流利,对答准

确,四肢活动自如,肢体肌力5级、肌张力正常。术后1年复查MRI未见明显异常(图4)。

**例2** 女性患者,63岁,因脑膜瘤切除术后8个月、抽搐发作2个月,于2013年8月20日入院。患者入院前8个月因右侧肢体无力伴言语不清至当地医院就诊,头部CT和MRI显示左侧额叶占位性病变(图5),诊断为脑膜瘤,行肿瘤次全切除术,同时切除受累硬脑膜和颅骨,并以钛板修补缺损颅骨。术后病理诊断为非典型性脑膜瘤(WHOⅡ级)。术后11 d因伤口感染再次手术取出钛板。2个月前出现右侧面部抽搐,持续约2 min后自行缓解,此后间断发作,发作时头偏向右侧、肢体强直,伴意识丧失,当地医院诊断为癫痫,予丙戊酸钠250 mg(2次/d)口服,发作频率减少。同时复查MRI显示肿瘤复发,为进一步手术治疗至我院就诊。入院时体格检查:神志清楚,记忆力差,失写,命名性失语,左侧额颞部颅骨缺损约6 cm×7 cm大小,双侧瞳孔对光反射灵敏,四肢肌力5级、肌张力正常,生理反射存在,病理征未引出。头部MRI提示肿瘤复发,侵及左侧蝶骨棘和硬脑膜(图6)。请病理科会诊原始组织切片,考虑间变性血管周细胞瘤。临床诊断考虑间变性脑膜瘤,遂行肿瘤次全切除术。扩大原手术切口,术中可见肿瘤侵及颅骨和硬脑膜,质地较韧,血运丰富,手术切除复发的肿瘤和受累的蝶骨和硬脑膜。术后病理学检查提示上皮样血管内皮瘤(图7a),免疫组织化学染色,CD31(图7b)和波形蛋白(Vim)呈强阳性,Fli-1呈阳性(图7c),CD34呈阴性;网织纤维染色可见细胞间网状纤维。术后辅助放射治疗,总剂量60 Gy(1.80 Gy/次×20次+2 Gy/次×12次)。患者共住院104 d,出院时头部切口愈合良好,神志清楚,混合性失语,双侧瞳孔等大、等圆,直径约3 mm,对光反射灵敏,右侧肢体肌力3级、左侧5级,肌张力均正常,生理反射存在,病理征未引出。术后2周复查MRI未见残留肿瘤(图8)。术后3个月行全身PET-CT扫描提示肿瘤转移至肺部、肝脏、肋骨、胸椎。

### 讨 论

上皮样血管内皮瘤是一种临床少见的血管性肿瘤,发病率不足颅内原发性肿瘤的0.02%<sup>[2]</sup>,其生物学行为和组织病理学介于血管瘤与血管肉瘤之间,属低度恶性肿瘤。Weiss和Enzinger<sup>[3]</sup>于1982年首次描述上皮样血管内皮瘤并命名。该肿瘤可发



**图1** 入院时头部MRI检查所见 1a 横断面T<sub>1</sub>WI显示,左侧额叶多发类圆形异常低信号影(箭头所示) 1b 横断面T<sub>2</sub>WI显示,病灶呈低信号,周围可见片状高信号水肿带(箭头所示) 1c 横断面GRE序列显示,病灶呈低信号(箭头所示) **图2** 保守治疗后复查头部CT显示,左侧额叶混杂高密度影,周围低密度水肿带(箭头所示) **图3** 光学显微镜观察所见 ×400 3a 血管内皮细胞肿胀,短梭形或上皮样肿瘤细胞密集分布,部分区域可见新生血管壁样结构,内衬短梭形肿瘤细胞增生,核分裂象少见 HE染色 3b 肿瘤细胞CD34呈强阳性 免疫组织化学染色(SP三步法) 3c 肿瘤细胞FVIII RAg呈阳性 免疫组织化学染色(SP三步法) **图4** 术后1年复查头部MRI未见残留肿瘤或肿瘤复发 4a 横断面增强T<sub>1</sub>WI 4b 冠状位增强T<sub>1</sub>WI

**Figure 1** Cranial MRI finding of Case 1 on admission. Axial T<sub>1</sub>WI revealed multiple hypointense round masses in the white matter of left frontal cortex (arrows indicate, Panel 1a). Axial T<sub>2</sub>WI showed low-intensity signals of the masses and patchy high-intensity signals of surrounding edema (arrows indicate, Panel 1b). Axial GRE sequence revealed low-intensity signals of the masses (arrows indicate, Panel 1c). **Figure 2** Preoperative CT disclosed 2 mixed-density space-occupying lesions in the left frontal lobe with low-density perifocal edema (arrows indicate). **Figure 3** Optical microscopy findings. ×400. The tumor cells were epithelioid or slightly spindle-shaped, with dense distribution. In some areas, structures as new vessel wall could be seen with proliferation of spindle-shaped tumor cells and rare mitosis (Panel 3a). HE staining. Tumor cells were strongly positive for CD34 (Panel 3b) and positively expressed for FVIII RAg (Panel 3c). Immunohistochemical staining (SP) **Figure 4** MRI one year after operation showed no residual tumor or recurrent tumor. Axial enhanced T<sub>1</sub>WI (Panel 4a). Coronal enhanced T<sub>1</sub>WI (Panel 4b).

生于全身各部位,以软组织多见,亦可见于肝脏、肺部、骨骼和皮肤等<sup>[1,3]</sup>。Enzinger和Weiss<sup>[1]</sup>根据肿

瘤细胞形态,将血管内皮瘤分为4种类型,即上皮样型,梭形细胞型,乳头状型和Kaposi型,目前仅见上

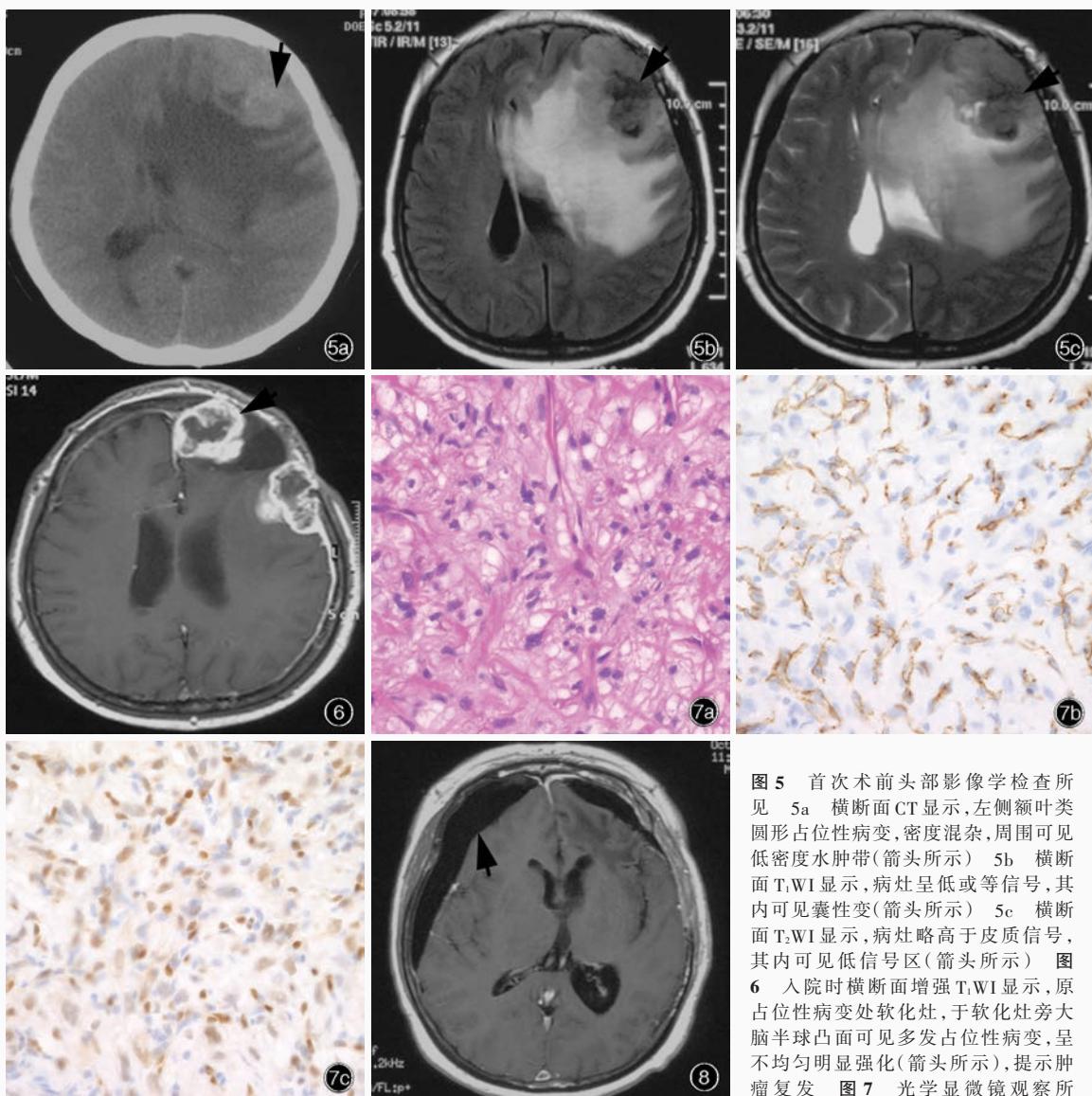


图5 首次术前头部影像学检查所见 5a 横断面CT显示,左侧额叶类圆形占位性病变,密度混杂,周围可见低密度水肿带(箭头所示) 5b 横断面T<sub>1</sub>WI显示,病灶呈低或等信号,其内可见囊性变(箭头所示) 5c 横断面T<sub>2</sub>WI显示,病灶略高于皮质信号,其内可见低信号区(箭头所示) 图6 入院时横断面增强T<sub>1</sub>WI显示,原占位性病变处软化灶,于软化灶旁大脑半球凸面可见多发占位性病变,呈不均匀明显强化(箭头所示),提示肿瘤复发 图7 光学显微镜观察所见 ×400 7a 肿瘤细胞具有上皮样特征,排列成小巢状或短索状,分布于黏液样基质中;部分肿瘤细胞形成小的血管腔,内含红细胞 HE染色 7b 肿瘤细胞CD31呈强阳性 免疫组织化学染色(SP三步法) 7c 肿瘤细胞Fli-1呈阳性 免疫组织化学染色(SP三步法)

图8 第2次术后横断面增强T<sub>1</sub>WI未见残留肿瘤,右侧硬膜下可见积液(箭头所示)

**Figure 5** Head imaging findings before the first surgery. Axial CT showed a round mixed-density mass in left frontal lobe with low-density perifocal edema (arrow indicates, Panel 5a). Axial T<sub>1</sub>WI showed the mass was predominantly hypointensity and isointensity, partially cystic within the lesion (arrow indicates, Panel 5b). Axial T<sub>2</sub>WI revealed a slightly hyperintense mass and hypointense within the lesion (arrow indicates, Panel 5c). **Figure 6** Axial enhanced T<sub>1</sub>WI on admission revealed softening focus located in the primary lesion. Multiple masses were found in cerebral hemisphere convex near the softening focus with strong heterogeneous enhancement (arrow indicates), suggesting the recurrent lesion. **Figure 7** Optical microscopy findings. ×400 The tumor cells were epithelioid and arranged in nests or short cords, which were distributed in myxoid matrix. Some cells formed small intracellular lumina with red cells occasionally included (Panel 7a). HE staining The tumor cells were strongly positive for CD31 (Panel 7b) and positively expressed for Fli - 1 (Panel 7c). Immunohistochemical staining (SP) **Figure 8** Axial enhanced T<sub>1</sub>WI 2 weeks after the second operation showed no residual tumor in the frontal lobe with right subdural effusion (arrow indicates).

皮样型血管内皮瘤发生于中枢神经系统的报道<sup>[4]</sup>。2007年世界卫生组织(WHO)中枢神经系统肿瘤分类将上皮样血管内皮瘤归于边缘性肿瘤<sup>[5]</sup>;而在2002年WHO软组织肿瘤分类中,上皮样血管内皮

瘤属恶性脉管肿瘤<sup>[6]</sup>。经检索美国国立医学图书馆生物医学信息检索系统(PubMed)和Ovid等数据库,目前有36篇英文文献报道42例颅内上皮样血管内皮瘤患者,其中5篇文献6例患者是来自中国的报

道<sup>[7-11]</sup>;国内可见丁敏等<sup>[12]</sup>、常川等<sup>[13]</sup>和丁勇等<sup>[14]</sup>的个案报告。该肿瘤可发生于任何年龄阶段,无明显性别差异<sup>[15]</sup>,我们复习相关文献后发现,男女比例约为1.40:1,发病高峰年龄分别为20和50岁。在儿童患者中,1岁以下婴儿发病率较高<sup>[16]</sup>。基因检测显示染色体11q23t(11;11)(q21;q23)易位<sup>[17]</sup>,可用于临床诊断。

上皮样血管内皮瘤的临床表现主要与肿瘤部位相关,额叶、颞叶和顶叶是最常见的原发部位,大多数因占位效应表现为颅内高压症状与体征,无明显特异性。儿童患者多为髓内病变、成年患者多为髓外病变<sup>[7]</sup>,易误诊为脑膜瘤。本文例2患者术前误诊为脑膜瘤,首次术后病理学检查提示非典型性脑膜瘤;根据术后病情发展和影像学改变,经我院病理科会诊,考虑间变性血管周细胞瘤,最终病理诊断为上皮样血管内皮瘤。MRI是主要诊断手段,多数情况下,T<sub>1</sub>WI呈等或低信号,T<sub>2</sub>WI呈高信号,增强扫描呈不均匀明显强化<sup>[7,18]</sup>。CT常表现为等或稍高密度影,瘤卒中时可见中心高密度影<sup>[10]</sup>;骨窗像可提示肿瘤对骨质的侵蚀情况。明确诊断主要依靠病理学检查,组织学形态特征为:(1)嗜酸性胞质的上皮样细胞,呈类圆形或多角形,胞质内可见明显空泡形成。(2)肿瘤细胞排列成小巢状、短索状或单个细胞,分布于黏液样基质中。(3)部分肿瘤细胞胞质内可见大小不等的空泡形成,其内含红细胞,提示由单个细胞构成的原始血管,最具诊断特征。超微结构观察可见吞饮小泡(pinocytotic vesicle)和内皮细胞基板,以及特征性Weibel-Palade小体<sup>[12,19]</sup>。免疫组织化学染色,肿瘤细胞Vim呈阳性,内皮细胞标志物如CD31、CD34、FⅧRAG、荆豆凝集素1(UEA-1)中至少1种呈阳性,其中CD31和CD34阳性率最高<sup>[4,20]</sup>,而巢蛋白(Nes)和S-100蛋白(S-100)阴性。

上皮样血管内皮瘤应注意与其他颅内肿瘤相鉴别,如黏液样软骨肉瘤、脊索样脑膜瘤、心房黏液瘤颅内转移<sup>[21]</sup>及其他颅内血管性肿瘤(上皮样血管瘤、血管周细胞瘤、血管母细胞瘤),上述肿瘤均不表达内皮细胞标志物,可资鉴别。(1)血管周细胞瘤:组织学形态表现以血管为中心的血管外膜细胞增生,肿瘤内血管极其丰富,常扩张呈血窦样;免疫组织化学染色表达间叶组织标志物Vim,不表达上皮组织标志物CK和EMA。(2)脑膜瘤:影像学表现易混淆,术前鉴别诊断较为困难,脑膜瘤呈圆形或

椭圆形,可见“脑膜尾征”,增强扫描呈均匀强化,钙化多见,少见血管流空影和囊性变;上皮样血管内皮瘤CT表现为等或稍高密度,钙化少见。免疫组织化学染色,脑膜瘤表达CK和EMA、不表达CD34,可资鉴别。

目前,手术切除仍是颅内上皮样血管内皮瘤的首选治疗方法。由于该肿瘤具有侵袭性生长和术后易复发的特点,应尽可能全切除肿瘤。对于术后残留肿瘤或无法切除的肿瘤可辅助放射治疗和药物化疗<sup>[22]</sup>,其中放射治疗在儿童患者中应慎重。2010年,Sumrall等<sup>[23]</sup>应用肿瘤坏死因子-α(TNF-α)抑制剂Lenalidomide成功治疗1例多病灶合并颅内上皮样血管内皮瘤患者,病情稳定约6年。

综上所述,上皮样血管内皮瘤是临床少见的血管性肿瘤,发生于颅内者罕见。明确诊断主要依靠组织病理学检查。由于肿瘤性质和细胞特异性,常规放射治疗不敏感,药物化疗作用尚未证实,因此,早期诊断和显微外科手术仍是最佳治疗方法,预后尚不确定。

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(收稿日期:2015-08-04)

**【点评】** 上皮样血管内皮瘤是一种血管内皮细胞起源的低度恶性肿瘤,发病年龄范围广泛(新生儿至老年人均可),好发于软组织。该肿瘤偶见于颅底、硬脑膜或脑实质内,可为单发性或多发性病变。影像学表现为界限清晰、强化明显及伴突出瘤周水肿的肿块。光学显微镜观察,肿瘤组织由排列成短条索状和巢状结构的上皮样血管内皮细胞构成,部分肿瘤细胞胞质内可见含单个红细胞的空泡。肿瘤细胞表达多种血管内皮细胞标志物(如CD31、CD34)、Fli-1和细胞角蛋白。上皮样血管内皮瘤呈交界性或低度恶性,部分患者预后较差。因其影像学表现特异性不强,易误诊为转移性肿瘤或恶性胶质瘤,术前诊断困难,明确诊断依靠组织病理学检查。因此,在实际工作中应考虑到这种少见肿瘤的可能性,并在诊断与治疗中给予足够重视。

(天津医科大学总医院 天津市神经病学研究所 于士柱教授)

## 第八届亚洲神经眼科大会暨第四届全国神经眼科学术会议征文通知

第八届亚洲神经眼科大会暨第四届全国神经眼科学术会议拟定于2015年10月23-25日在北京召开。届时将邀请国内外著名神经眼科、神经内科和眼科专家就神经眼科疾病在诊断学、遗传学、影像学、流行病学、低视力康复等领域的研究进展作专题报告和神经眼科病例讨论。欢迎全国同道及相关专业医师积极参会,踊跃投稿。

亚洲神经眼科协会(ASNOS)于2002年在日本东京成立。由亚洲神经眼科协会每两年主办一次的亚洲神经眼科大会是大型国际神经眼科会议,代表亚洲神经眼科基础与临床研究最高水平。大会提供了一个国际化平台,让世界各地参会者可以针对神经眼科前沿研究课题交流想法,了解最新进展和探讨促进未来合作。在亚洲神经眼科大会尤以病例讨论版块“Walsh in Asia”最为著名,该版块选取各国典型病例进行深入剖析,极具挑战性。

1. 征文内容 神经眼科相关基础与临床研究。
2. 征文要求 尚未在国内外学术会议和公开刊物上发表的论文摘要1份,字数不超过600字。请按照目的、方法、结果、结论四部分格式书写,并于文题下注明作者姓名(第一作者和通讯作者)、工作单位、邮政编码、联系方式和Email地址。
3. 投稿方式 会议仅接受Email投稿,请发送至:neuroophthalmology@163.com,并于主题中注明“第八届亚洲神经眼科大会暨第四届全国神经眼科学术会议征文”字样,正文中注明作者姓名、职称、工作单位、邮政编码、联系方式和Email地址。