·论 著·

桥脑小脑角区脂肪瘤的诊治分析

王浩然 曲彦明 张宏伟 谷春雨 张明山

【摘要】**目的** 探讨桥脑小脑角区脂肪瘤的临床特点、治疗方法及其疗效。**方法** 回顾性分析2009年1月至2022年1月收治的6例桥脑小脑角区脂肪瘤的临床资料。**结果** 6例均出现患侧听力减退，伴眩晕、面神经功能障碍及面部疼痛各1例；MRI呈特异性短T_1、长T_2信号，CT呈低密度。4例手术治疗，2例保守观察。术后除听力下降以外的症状均得到缓解。出院后随访10~151个月，未出现疾病进展。**结论** 桥脑小脑角区脂肪瘤是先天性良性病变，影像表现较为特异；如出现明显临床症状，则可手术治疗，但手术难以保留残存听力，术中实现减压即可，不宜追求肿瘤切除程度。

【关键词】颅脑肿瘤；桥脑小脑角区；脂肪瘤；显微手术

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Diagnosis and treatment of patients with cerebellopontine angle lipoma

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【**Abstract**】**Objective** To explore the clinical features, treatment methods, and outcomes of patients with cerebellopontine angle (CPA) lipoma. **Methods** The clinical data of 6 patients with CPA lipoma treated at our hospital from January 2009 to January 2022 were retrospectively analyzed. **Results** All 6 patients presented with unilateral hearing loss, with vertigo, facial nerve dysfunction, and facial pain in 1 patient, respectively. MRI showed characteristic short T_1 and long T_2 signals, and CT showed low density in all 6 patients. Four patients underwent surgery, and 2 were observed conservatively. After surgery, all symptoms improved except hearing loss. The patients were followed up for 10~151 months after discharge, without any progression of the disease. **Conclusions** CPA lipoma is a congenital benign lesion with characteristic imaging findings. If obvious clinical symptoms occur, surgery can be performed, but it is difficult to preserve residual hearing. Reducing intracranial pressure during surgery is sufficient, and it is not advisable to pursue tumor resection to a high degree.

【**Key words**】Intracranial tumor; Cerebellopontine angle; Lipoma; Microsurgery

颅内脂肪瘤主要发生于胼胝体、四叠体池及漏斗视交叉等中线结构周围，桥小脑角区(cerebellopontine angle，CPA)脂肪瘤极为少见，约占全部颅内肿瘤的0.08%[1]。本文回顾性分析6例CPA脂肪瘤的临床表现、影像特点、治疗及预后等，以加深对该病的认识。

1 资料与方法

1.1 病例选择标准 纳入标准：本后病理证实为脂肪瘤，或影像检查呈典型的脂肪瘤表现(CT示边界清晰的均匀低密度灶，CT值-50~-100 Hu；MRI表现为均匀T_1WI高信号和T_2WI高信号，脂肪抑制像可见肿瘤与眶脂肪信号同时被抑制，增强后无强化)。排除标准：合并其他肿瘤；病例资料不完整。

1.2 一般资料 回顾性分析2009年1月至2022年1月收治的6例CPA脂肪瘤的临床资料，其中4例经手术及病理证实，2例由临床及影像检查诊断。

1.3 影像学检查方法 CT和MRI平扫及增强扫描，并通过短时反转恢复序列扫描获得脂肪抑制像。

1.4 手术方法 采用枕下乙状窦后入路显露肿瘤，部分切除减压后常规关颅及缝合切口。

1.5 随访 采用电话及复诊等方式随访并收集影像资料，随访时间10~151个月。

2 结 果

2.1 临床表现 6例中，男性2例，女性4例；年龄15~49岁，平均27.3岁。6例均出现患侧听力减退，伴发作性眩晕及面神经功能障碍1例，面部疼痛1例，一过性听力下降1例，一过性晕厥1例。6例症状持续时间0.5~144个月，平均35个月。除去因晕厥就诊1例后，其余5例症状持续时间15~144个月，平均47.4个月。

2.2 影像学表现 6例病变均位于CPA，肿瘤最大径7~19 mm，平均14.3 mm，其中5例包裹面听神经、1

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例位于岩尖骨质并压迫面听神经。CT均呈极低密度，边界清楚；MRI平扫呈特征性短T_1、长T_2信号；脂肪抑脂像可见肿物信号与眶内脂肪同步明显降低，增强后T_1信号与平扫相同。见图1~3。

2.3 治疗结果　4例采用手术治疗，术中见肿瘤呈黄色、油脂状、边界清，包绕并穿插于面听神经及周边血管，其间多量纤维组织连结，难以将肿瘤组织与神经血管分离，均予以部分切除。见图2、3。

2.4 随访结果　4例术后听力未好转，其中2例术前即听力丧失；另2例术前尚存部分听力，其中1例术后听力丧失，1例术后听力基本同术前。面部疼痛及眩晕症状术后全部缓解。1例术前即有轻微面瘫，术后面瘫加重至House-Brackmann分级2级，3个月后恢复正常。

2例保守观察，其中1例听力基本正常，1例患侧听力严重减退；随访46、64个月，听力无明显变化，未出现其他相关症状。

6例影像随访10~69个月，均未见肿瘤增大。

3 讨 论

颅内脂肪瘤占全部颅内肿瘤的0.06%~0.34%[1-3]，多数位于幕上中线区域，常累及胼胝体。CPA脂肪瘤约占颅内脂肪瘤的10%，占CPA肿瘤的0.14%~0.15%[4-6]，占全部颅内肿瘤的0.08%[1]。

颅内脂肪瘤的病因尚不明确。目前认同较广的理论认为，胚胎形成过程中，原始脑膜的残留和异常分化，使神经嵴向间质演化，最终导致颅内脂肪瘤。这也解释了颅内脂肪瘤通常位于中线结构、常合并其他中枢神经系统畸形的现象（如胼胝体发育不良、透明隔缺如以及血管结构异常）[7,8]。

CPA脂肪瘤可见于任何年龄，平均年龄为37.1岁[5]。性别差异、肿瘤侧别的比例尚无明确结论[8]。本文病例平均年龄27.3岁，男女比例为2:1，与文献报道较为接近。

CPA脂肪瘤在神经血管结构内往往表现为浸润性生长模式。CPA脂肪瘤易累及颅神经束和静脉交

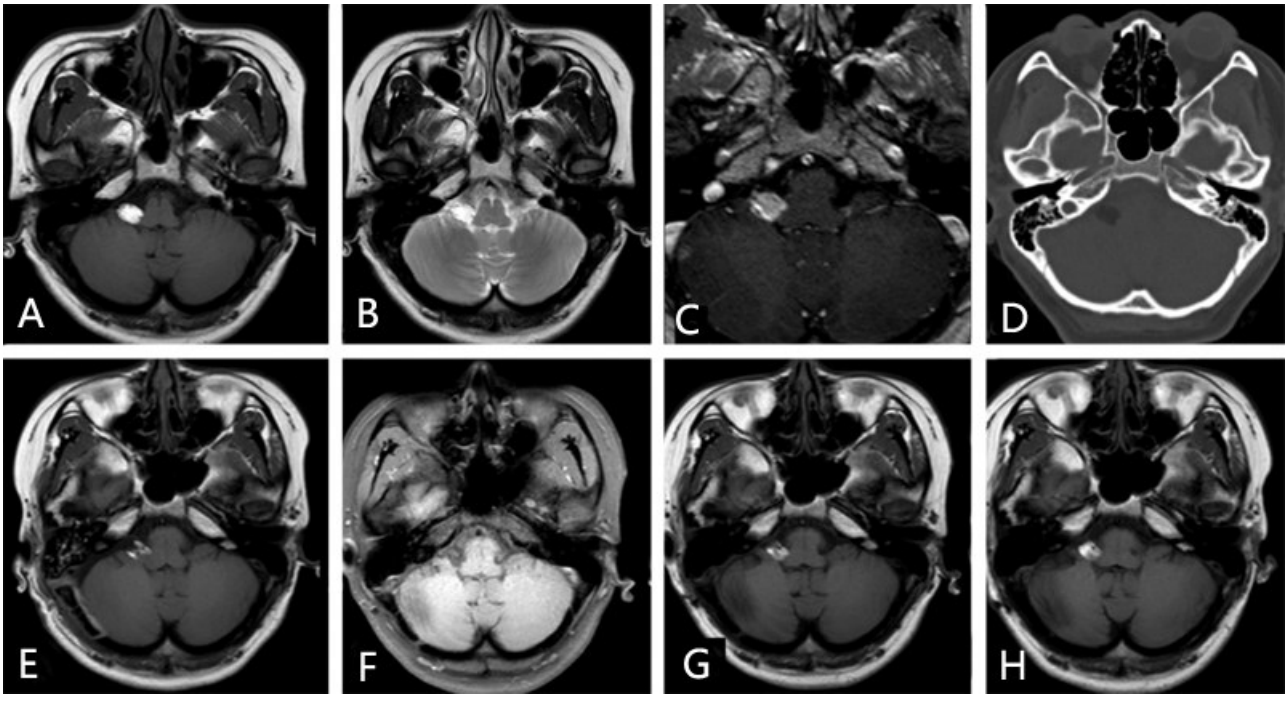

图1 右侧桥脑小脑角区脂肪瘤手术前后影像表现

A~C. 术前MRI平扫显示右侧桥脑小脑角区一短T_1、长T_2信号类圆形肿物，增强后无明显强化，但可见血管在其间穿行；D. 术前CT显示病灶密度低于脑组织；E. 术后1周MRI示肿瘤部分切除；F. MRI抑脂像可见其信号降低；G. 术后4个月MRI复查见肿瘤似有增大；H. 术后2年复查MRI示肿瘤无明显变化

Figure 1 Pre- and pospt-operative imaging findings of a patient with a lipoma in the right cerebellopontine angle

A-C: Preoperative images of MRI plain scan show a round mass with short T_1 and long T_2 signals in the right cerebellopontine angle, without obvious enhancement, but blood vessels can be seen passing through it. D: Preoperative CT shows that the lesion density is lower than brain tissues. E: Images of MRI 1 week after surgery show partial resection of the tumor. F: MRI lipostatic images show reduced signal. G: MRI examination 4 months after surgery shows that the tumor appeares to be enlarged. H: MRI reexamination 2 years after surgery shows no significant changes in the tumor.

界处的Virchow-Robin间隙，这些区域通常被脂肪细胞隔离。绝大多数颅内脂肪瘤是良性的，当其压迫CPA的神经、血管时，则出现相关症状。其病程可持续数月至数十年[2]。CPA脂肪瘤最常累及面听神经及小脑前下动脉[6]，表现为头晕、耳鸣及听力减退，其中听力减退最为常见。部分病例的听力减退可呈间歇性。少数病人仅表现为头晕。另有病人则仅以面神经刺激症状为主，表现为患侧面肌痉挛。当肿瘤累及三叉神经时，则表现为三叉神经痛。肿瘤体积较大时，可出现眼球震颤及共济失调[1,2,8]。本文6例病人均出现患侧听力减退，伴眩晕、面神经功能障碍及面部疼痛各1例，1例为一过性听力下降后自行缓解，1例因一过性晕厥发现CPA占位及同侧听力减退（其晕厥症状与本病关系不能明确）；本文病例症状持续时间15~144个月；这与文献报道相符。

CPA脂肪瘤的影像学表现较为独特。CT表现为边界清晰的均匀低密度灶，CT值-50~-100 Hu，增强后无强化。MRI表现为T_1WI高信号和T_2WI高信号，这是一特异性的脂肪信号，典型病例可显示出第7、8颅神经由肿瘤中心穿出。脂肪抑制像可确定诊断，可见肿瘤与眶脂肪信号同时被抑制[8]。病理表现：肿瘤以成熟的脂肪细胞为主，常侵润至颅神经束间隙生长，肿瘤组织内含有多量的神经纤维及血管[9]。本文病例影像特点均较为典型，临床诊断明确。

本病需与其它含有脂肪组织的先天性病变相鉴别，如皮样囊肿、表皮样囊肿、畸胎瘤等。表皮样囊肿、皮样囊肿由于含有脱屑的上皮组织以及其他成分，CT密度或MRI信号不均匀，且CT值高于脂肪组织；畸胎瘤为非均一病灶，增强后可强化。另外，囊性听神经瘤、囊性脑膜瘤、蛛网膜囊肿、亚急性出血等囊性病变也与本病有部分相同之处[8-10]。

由于肿瘤与颅神经及脑干粘连紧密，手术全切除肿瘤很困难，强行从颅神经上剥离肿瘤，必然加重颅神经损伤。早期追求较大程度切除肿瘤的方案，术后多严重影响临近神经功能[12,13]。Totten等[1]总结既往文献报道的219例CPA及内听道脂肪瘤，其中46%的病例进行手术治疗，发现手术治疗与较差的神经功能预后相关。考虑该病为良性病变，且进展

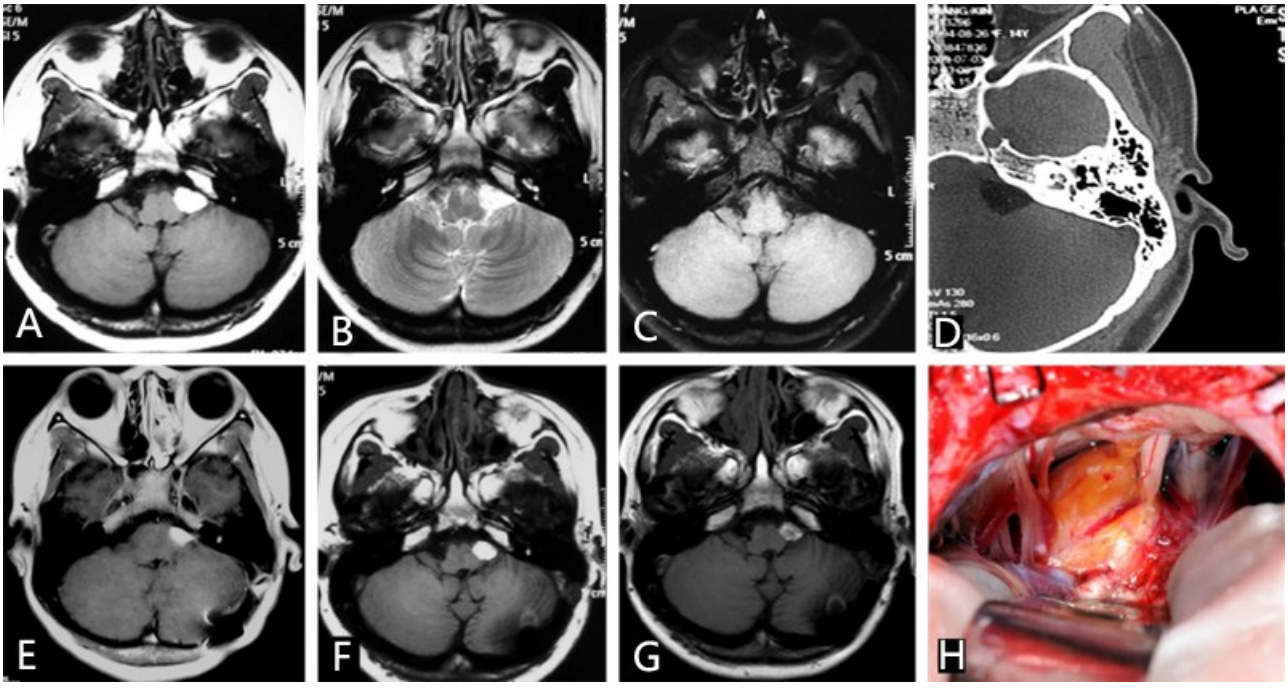

图2 左侧桥脑小脑角区脂肪瘤手术前后影像表现及术中显微镜下观察

A~C. 术前MRI显示左侧桥脑小脑角区一短T_1、长T_2信号类圆形肿物，脂肪抑制像为低信号；D. 术前头部CT显示病灶密度低于脑组织；E~G. 术后4、27、69个月复查MRI未见肿瘤明显增大；H. 术中显微镜下观察，肿物为黄色脂肪组织，面听神经及小脑前下动脉穿插其间，关系十分密切

Figure 2 pre- and post-operative imaging findings and intraoperative microscope observation of a patient with a lipoma in the left cerebellopontine angle

A-C: Pre-operative MRI shows a round short T_1 and long T_2 signal mass in the left cerebellopontine angle , with fat suppression showing a low signal. D: Pre-operative head CT shows that the lesion has a lower density than brain tissues. E-G. Postoperative MRI follow-up at 4, 27, and 69 months shows no significant increase in tumor size. H: Intraoperative microscope observation shows the tumor to be yellow fat tissues, with a very close relationship with the facial nerve and the anterior inferior cerebellar artery which are passing through it.

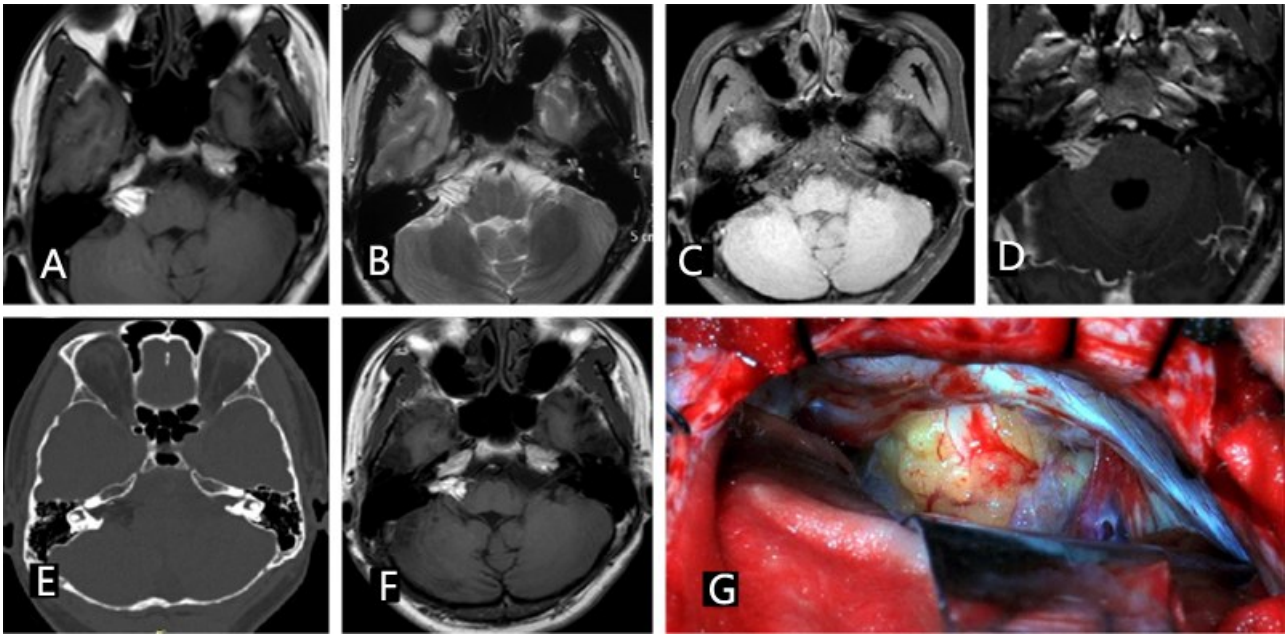

图3 右侧桥脑小脑角区脂肪瘤手术前后影像表现及术中显微镜下观察

A~D. 术前MRI显示右侧桥脑小脑角区一短T_1、长T_2信号类圆形肿物，其间可见神经血管穿行，脂肪抑制像为低信号，无明显强化；E. 术前头部CT显示病灶密度低于脑组织；F. 术后10个月复查MRI示肿瘤部分切除；G. 术中显微镜下观察，肿物为黄色脂肪组织，包裹面听神经及周围结构

Figure 2 pre- and post-operative imaging findings and intraoperative microscope observation of a patient with a lipoma in the right cerebellopontine angle

A-D: Pre-operative MRI shows a round short T_1 and long T_2 signal mass in the left cerebellopontine angle, with vascular structures traversing within the lesion, and fat suppression image shows a low signal, with no obvious enhancement. E: Pre-operative head CT shows a lesion with a lower density than brain tissues. F: Post-operative follow-up MRI 10 months after surgery shows partial resection of the tumor. G: Microscopic observation during operation reveals yellow fat tissues containing the facial nerve and surrounding structures.

异常缓慢，多数学者认为，对于无症状的病人，不宜手术切除，可密切随访；对于临床症状明显者，可采取手术治疗。目前，多主张部分切除肿瘤，实现症状缓解即可；术中应充分显露病变，探明肿瘤与周围神经结构的毗邻关系，于瘤内分块切除，实现受压神经充分减压即可[1,4,5,13,14]。本文4例采取手术治疗，术中仅行部分切除以缓解局部张力，术后眩晕、面部疼痛及面瘫症状均得到缓解，即使短期内出现轻度神经功能障碍，3~4个月内可缓解；但手术并不能使病人听力损害获益。本文2例采取保守观察，随访46、64个月，无明显症状，颅内肿瘤也无明显增大。

一般认为，本病为先天性良性病变，预后良好，绝大多数不会持续生长及复发[1]。本文病例最长69个月影像随访未见肿瘤生长，并且至151个月时，未出现不适症状。但也有文献报道生长迅速的颅内脂肪瘤[15]。这提示临床本病的认识有待提高。

总之，CPA脂肪瘤是先天性良性病变，其影像表现较为特异，预后良好，可随访观察；如出现明显临床症状，则可手术治疗，但手术难以保留残存听力，术中实现减压即可，不宜追求更多的切除肿瘤。

【伦理学声明】：本研究遵循《赫尔辛基宣言》，所有病人和/或家属均签署知情同意书。本研究方案于2022年1月20日经首都医科大学三博脑科医院伦理委员会审批，批号为SBNK-YJYS-2022-21-05。

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