

## ·病例报告·

# 宫颈小细胞神经内分泌癌伴多发转移<sup>18</sup>F-FDG PET/CT显像一例

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**【摘要】** 笔者报道了一例以头痛 7 d 伴右颅顶部质硬包块为首发表现的宫颈小细胞癌病例。颅脑 CT 平扫示右顶叶高密度结节伴周围低密度水肿带、邻近颅骨骨质破坏, 考虑颅内肿瘤性病变。颅脑 MRI 示右顶叶稍长 T1、T2 信号结节伴水肿带, 增强扫描后病灶明显强化。<sup>18</sup>F-FDG PET/CT 全身显像示宫颈软组织团块伴高代谢、双侧盆腔淋巴结高代谢、全身多处骨骼包括右颅顶部病灶骨质破坏伴高代谢。宫颈活检病理结果确诊为小细胞癌。文献复习加深了对宫颈小细胞癌的认识, 其发病率极低, 临床表现缺乏特异性, 早期不易被发现, 该病侵袭性强, 易发生淋巴结和血行转移, 预后较差。<sup>18</sup>F-FDG PET/CT 对宫颈小细胞癌的原发灶、淋巴结转移、骨转移及其他较隐匿部位转移病灶的探测灵敏度较高, 在该病的临床管理中具有较好的应用价值。

**Small cell neuroendocrine carcinoma of the cervix with multiple metastases: <sup>18</sup>F-FDG PET/**

**CT findings** Li Chongjiao, Tian Yueli, Shen Meijuan, Xing Diankui, Wen Bing, He Yong

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**【Abstract】** The author reports a case of small cell carcinoma of the cervix. The patient had a 7-day history of headache and a hard mass in the parietal region of the cranium on the right side as the first manifestation. Cranial CT scan showed a high-density nodule on the right parietal lobe, with a surrounding low-density edema and adjacent skull bone destruction; thus, intracranial tumor was considered. MRI brain scan showed a slightly longer T1 and T2 signal nodule, with edema in the right parietal lobe. The lesion was significantly enhanced after the application of contrast. The <sup>18</sup>F-FDG PET/CT whole-body imaging showed a solid mass of cervix and slightly large bilateral pelvic lymph nodes and presented multiple bone destruction with high FDG uptake. The histopathological examination revealed small cell carcinoma of the cervix. Small cell carcinoma of the cervix has extremely low incidence, its clinical manifestation lacks specificity, and it is not easily detected at its early stage. Small cell carcinoma of the cervix is an aggressive tumor and commonly have early metastasis through lymph node and blood circulation, with a poor prognosis. The sensitivity of <sup>18</sup>F-FDG PET/CT in detecting primary lesions and metastases, including lymph node, bone, and other occult lesions, is high. Thus, this method is valuable in the clinical management of the small cell carcinoma of the cervix.

小细胞神经内分泌癌, 又称小细胞癌, 绝大部分发生在肺内。肺外小细胞癌几乎可发生于肺外的各个组织器官, 约占所有小细胞癌的 2%~9%, 常见于胃肠道、泌尿生殖系统、头颈部、乳腺等部位<sup>[1-3]</sup>。小细胞癌发生的部位不同, 其流行病学、生物学行为、临床影像特征具有明显差异<sup>[4]</sup>。女性生殖道小细胞癌最常见的发生部位为宫颈, 其次为卵巢、输卵管、子宫内膜、阴道和外阴<sup>[1]</sup>。宫颈小细胞癌的发病机制尚存在争议, 有研究结果显示, 其发生与高危型人乳头瘤病毒(16/18)感染相关<sup>[5]</sup>。与其他宫颈恶性肿瘤相比,

宫颈小细胞癌更易发生宫旁侵犯和淋巴结转移<sup>[1]</sup>。宫颈小细胞癌较为罕见, 缺乏特征性影像学表现, 文献报道其 <sup>18</sup>F-FDG PET/CT 显像多呈异常高代谢<sup>[6-9]</sup>。

## 1 患者资料

患者女性, 63岁, 因“头痛 7 d”入院。既往体健, 无传染病史和肿瘤病史。入院后行体格检查, 右颅顶部触及一质硬包块, 无发红、无瘙痒; 其余无明显异常。肿瘤标志物未检测。血尿常规及血生化均无明显异常。

本院颅脑 CT 平扫示右顶叶高密度结节影，周围伴低密度水肿带，邻近颅骨骨质破坏，考虑颅内肿瘤性病变。进一步行颅脑 MRI，平扫示右顶叶稍长 T1、T2 信号结节，大小约 3.0 cm×2.6 cm，以宽基底附于邻近脑膜，并穿过邻近颅骨内外板，邻近脑实质向内推移伴水肿带；增强 MRI 扫描示病灶明显强化，考虑侵袭性脑膜瘤累及颅顶骨可能性大。为进一步排除转移瘤的可能性，行 <sup>18</sup>F-FDG PET/CT(德国 Siemens mCT-s64)全身检查。该患者在检查前签署了知情同意书。患者空腹(血糖：5.4 mmol/L)，静脉注射显像剂 <sup>18</sup>F-FDG(南京江原安迪科武汉分公司，放射性活度：240.5 MBq)，平静休息 1 h 后行 PET/CT 全身断层显像，显像范围为颅顶至大腿根部，2 min/床位，共 6 个床位，图像行衰减校正及迭代法重建，以多层次、多幅显示。PET/CT 影像表现：①子宫颈明显增厚伴软组织团块，边界欠清晰，病灶大小约 4.3 cm×2.7 cm，代谢异常增高，SUV<sub>max</sub> 为 20.0(图 1 中 B~D)；②盆腔内双侧髂外血管旁见淋巴结，大小分别为 11 mm×9 mm(左，SUV<sub>max</sub> 为 10.4)和 7 mm×4 mm(右，SUV<sub>max</sub> 为 2.7)(图 1 中 E~G)；③全身多处骨骼(胸骨、双侧锁骨、双肩胛骨、肱骨、多发肋骨、颈胸腰椎多发椎体及附件、骨盆组成骨及股骨)见多发溶骨性骨质破坏，部分伴软组织团块形成，代谢异常增高，SUV<sub>max</sub> 为 5.2~20.6(图 1 中 H~J 为骨盆组成骨的骨转移图像)；④颅顶骨见骨质破坏，伴颅内团块及低密度水肿带，代谢异常增高，SUV<sub>max</sub> 为 16.4(图 2)。综合诊断为：子宫颈恶性肿瘤性病变伴盆腔淋巴结及多发骨骼转移，建议结合宫颈活检。宫颈活检病理结果(图 3)：子宫颈神经内分泌癌(小细胞癌)。免疫组化检测：

神经细胞黏连分子 CD56(+)、嗜铬颗粒蛋白 A(+)、细胞角蛋白 CK5/6 (-)、增殖细胞核抗原 Ki-67 阳性率约 90%、P16(+)、P63(+)、突触素(+)、甲状腺转录因子 1(+)。

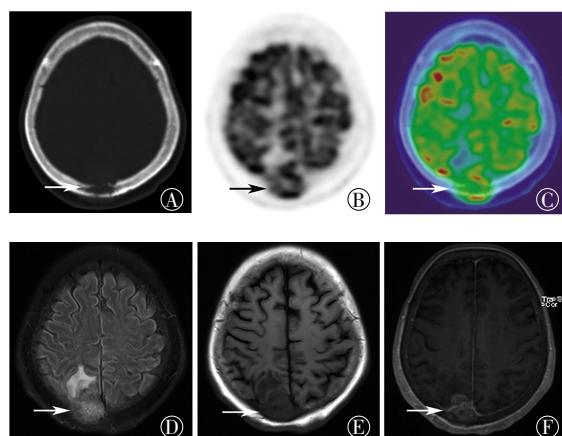


图 2 患者女性，63 岁，宫颈小细胞神经内分泌癌颅骨转移 <sup>18</sup>F-FDG PET/CT 及 MRI 图像 图中，A~C：右颅顶部病灶轴位 CT、PET 及 PET/CT 融合图像，CT 平扫骨窗示颅顶骨骨质破坏，PET 示代谢异常增高，SUV<sub>max</sub> 为 16.4(箭头示病灶)；D~F：右颅顶部病灶 MRI 图像，D 为 T2-Flair 序列，E 为 T1-Flair 序列，右顶叶见稍长 T2、T1 信号结节影，周围脑实质内见长 T2 信号水肿带，病灶侵及邻近颅骨，F 为 MRI 增强扫描，示病灶呈明显强化(箭头示病灶)。FDG：氟脱氧葡萄糖；PET：正电子发射断层显像术；CT：计算机体层摄影术；MRI：磁共振成像；SUV<sub>max</sub>：最大标准化摄取值；Flair 序列：液体衰减反转恢复序列。

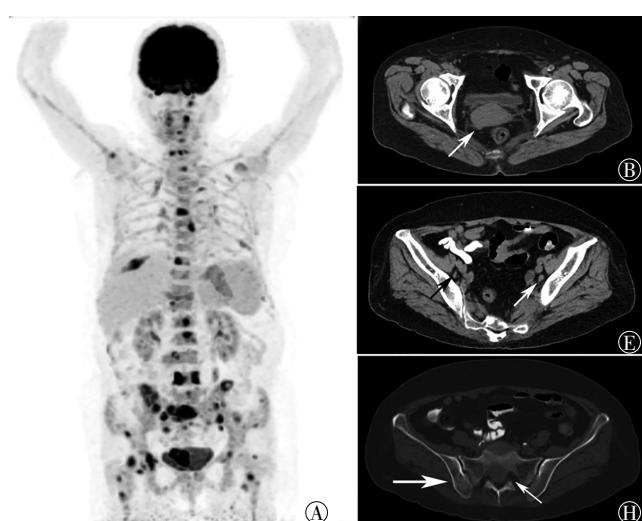
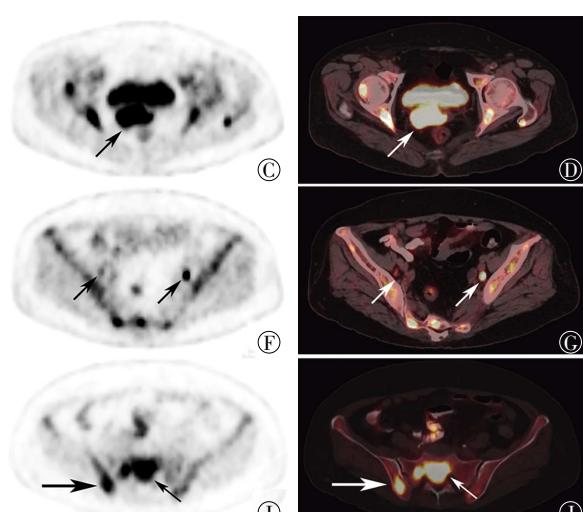
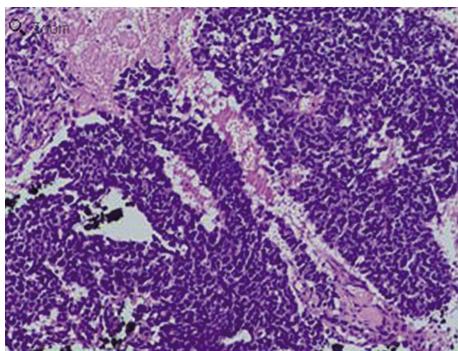


图 1 患者女性，63 岁，宫颈小细胞神经内分泌癌 <sup>18</sup>F-FDG PET/CT 显像图 图中，A：全身 MIP 图；B~D：宫颈病灶轴位 CT、PET 及 PET/CT 融合图像，CT 平扫示宫颈明显增厚伴软组织团块，PET 显像示病灶代谢异常增高，SUV<sub>max</sub> 为 20.0(箭头示病灶)；E~G：双侧盆腔淋巴结轴位 CT、PET 及 PET/CT 融合图像，CT 平扫示双侧髂外血管旁淋巴结，大小分别为 11 mm×9 mm(左)、7 mm×4 mm(右)，PET 显像示代谢异常增高，SUV<sub>max</sub> 为 10.4(左)和 2.7(右)(箭头示病灶)；H~J：骨盆组成骨的骨转移轴位 CT、PET 及 PET/CT 融合图像，CT 平扫骨窗示骶骨及右髂骨见骨质破坏，PET 示代谢异常增高，SUV<sub>max</sub> 为 16.4(箭头示病灶)。FDG：氟脱氧葡萄糖；PET：正电子发射断层显像术；CT：计算机体层摄影术；MIP：最大密度投影；SUV<sub>max</sub>：最大标准化摄取值。





**图3** 患者女性, 63岁, 宫颈小细胞神经内分泌癌病理图(苏木精-伊红染色, 放大倍数为 $20\times10$ )。图中, 宫颈组织中见瘤细胞呈圆形或短梭形非典型细胞, 部分成巢状或片状排列, 细胞体积较小, 胞质少而不明显, 细胞核呈椒盐状蓝染, 核仁染色不明显, 内可见局灶坏死。

## 2 讨论

宫颈小细胞癌是宫颈恶性肿瘤中罕见的病理类型, 约占所有宫颈恶性肿瘤的1%, 其年平均发病率为0.06/10万<sup>[10]</sup>。宫颈小细胞癌临床表现缺乏特异性, 常见症状包括异常阴道流血、流液、盆腔疼痛或压迫症状。但因病变一般不侵犯宫颈表面上皮而是以间质浸润性生长为主, 常规巴氏涂片或液基薄层细胞学检查的灵敏度和特异度较低, 所以该病早期不易被发现。宫颈小细胞癌的侵袭性较强, 具有早期转移且进展较快的特点, 其复发率高、预后较差<sup>[11-12]</sup>。

宫颈小细胞癌的影像学表现缺乏特异性, CT平扫可表现为等密度或稍低密度肿块, <sup>18</sup>F-FDG PET/CT显像多呈异常高摄取。Chen等<sup>[6]</sup>报道了25例宫颈小细胞癌患者, 原发灶中位SUV<sub>max</sub>为10.2(0~33.0)。Lin等<sup>[7]</sup>报道了5例宫颈-阴道神经内分泌肿瘤, 其中1例为宫颈小细胞癌, 其SUV<sub>max</sub>为5.62。本例患者宫颈病灶CT表现为边界不清的等密度团块, <sup>18</sup>F-FDG摄取水平异常增高, SUV<sub>max</sub>为20.0; 病灶虽未侵犯邻近的膀胱及直肠组织, 但已有淋巴结及多发骨转移; 盆腔内转移淋巴结较小, 但其<sup>18</sup>F-FDG摄取异常增高。本例患者以颅内病变为首发表现, 通过行<sup>18</sup>F-FDG PET/CT全身检查发现原发肿瘤位于宫颈, 同时发现盆腔淋巴结转移及多处骨质破坏, 综合考虑诊断为宫颈恶性肿瘤伴多发转移, 通过病理学检查证实为小细胞癌, 提示该患者分期较晚, 预后不良。

宫颈小细胞癌在临床中较为少见, 目前, 关于<sup>18</sup>F-FDG PET/CT在该病中应用价值的研究较少, 仅1篇前瞻性研究<sup>[6]</sup>, 其余3篇均为病例报道<sup>[7-9]</sup>。Chen等<sup>[6]</sup>的研究表明, <sup>18</sup>F-FDG PET/CT可使部分宫颈小细胞癌患者的分期下调或上调, 分期下调可避免患者接受过度治疗; 他们发现接受规范治疗的肿瘤早期患者(I/II B)生存期较长; 他们还发现, 尽管PET/CT可以探测更多的远处淋巴结转移或骨转移, 但晚期患者的长期生存率并未因此得到改善; 研究结果显示, 所

有患者的中位无失败生存期为17.4个月, 中位肿瘤特异性生存期为32.5个月。由于该病的特殊性以及患者数量较少的原因, <sup>18</sup>F-FDG PET/CT在预测该病预后方面的价值仍需进一步的大样本研究。

总之, <sup>18</sup>F-FDG PET/CT对宫颈小细胞癌的原发灶、淋巴结转移、骨转移及其他较隐匿部位转移病灶的探测灵敏度较高, 在该病的临床管理中具有较好的应用价值。

**利益冲突** 本研究由署名作者按以下贡献声明独立开展, 不涉及任何利益冲突。

**作者贡献声明** 李崇佼负责病史收集、数据分析、论文撰写、修改及校正; 田月丽、沈美娟负责病史收集、数据获取及分析; 幸奠奎负责数据及图片处理; 文兵、何勇负责研究命题的提出、设计、论文修改及最终版本修订。

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