

· 论著 ·

探讨多层螺旋CT多平面重建技术在诊断卵巢囊肿蒂扭转中的应用价值

马煜磊*

河南省南阳市医学高等专科学校第一附属医院 (河南 南阳 473000)

【摘要】目的 探讨卵巢囊肿蒂扭转采用多层螺旋CT(MSCT)多平面重建(MPR)技术诊断的价值。方法 选择2015年1月至2020年6月于医院检测的45例卵巢囊肿蒂扭转患者,对患者MSCT及MPR技术资料进行回顾分析,分析对比手术病理组织诊断结果。结果 MSCT检测均显示盆腔囊性肿块,33例患者囊壁增厚,15例患者囊壁密度不均匀,见分层,囊肿厚度不对称,存在条索状软组织相连,延伸至一侧子宫角部或附件,MPR可见蒂部一端连接子宫角部或附件,另一端连接囊肿,15例患者存在囊壁钙化,有27例患者存在盆、腹腔积液,积液位于子宫直肠陷窝、盆底、囊肿边缘、结肠旁沟、肝肾隐窝、肝肾窝;与手术病理组织诊断结果对比,手术病理诊断准确率高于MSCT(100.00% VS 84.44%)($P<0.05$),但MSCT与手术病理对于囊肿平均直径、囊肿加厚厚度检查结果相近($P>0.05$),无统计学意义。结论 卵巢囊肿蒂扭转在MSCT及MPR技术下有独特的特征表现,清晰显示卵巢囊肿蒂扭转及其积液情况,可了解到患者目前的情况,具有较高临床价值。

【关键词】多层螺旋CT;多平面重建技术;卵巢囊肿蒂扭转;诊断价值

【中图分类号】R+320.1140

【文献标识码】A

DOI:10.3969/j.issn.1009-3257.2023.04.027

To evaluate the value of multiplanar reconstruction of multi-slice spiral CT in the diagnosis of ovarian cyst pedicle torsion

MA Yi-lei*

The First Affiliated Hospital of Nanyang Medical College in Henan Province, Nanyang 473000, Henan Province, China

Abstract: Objective To evaluate the value of multiplanar reconstruction (MPR) of multi-slice spiral CT (MSCT) in the diagnosis of ovarian cyst pedicle torsion.

Methods 45 patients with ovarian cyst pedicle torsion detected in the hospital from January 2015 to June 2020 were selected. The technical data of MSCT and MPR were retrospectively analyzed, and the diagnostic results of surgical pathology were compared. **Results** MSCT showed pelvic and abdominal cystic masses. The cystic wall of 33 patients was thickened, and the density of cystic wall was uneven in 15 patients. The cyst thickness was asymmetric. There were strip like soft tissue connected and extended to one uterine corner or accessory. MPR showed that one end of the pedicle was connected to the uterine corner or accessory, and the other end was connected to the cyst. There was cystic wall calcification in 15 patients. There were 27 patients with pelvic and peritoneal effusions, which were located in hysteroectal lacunae, pelvic floor, cyst edge, paracolic sulcus, liver and kidney reclining and perihepatic. Compared with the results of surgical pathology, the diagnostic accuracy of surgical pathology was higher than that of MSCT (100.00% vs 84.44%) ($P<0.05$), but the results of MSCT and surgical pathology were similar to those of surgical pathology ($P>0.05$). **Conclusion** Ovarian cyst pedicle torsion has unique characteristics under MSCT and MPR technology. It can clearly show the torsion and effusion of ovarian cyst pedicle, understand the current situation of patients, and has high clinical value.

Keywords: Multi-slice Spiral CT; Multiplanar Reconstruction Technology; Torsion of Ovarian Cyst Pedicle; Diagnostic Value

卵巢囊肿是在卵巢内形成的一种肿瘤疾病,会使卵巢内充满固体或液体,死亡率高,在妇科恶性肿瘤中位居第一,一般在20~50岁女性当中多发^[1]。卵巢囊肿常并发蒂扭转,卵巢囊肿蒂扭转在卵巢囊肿中的发病率为10%,主要表现为急性下腹部疼痛,其起病急,病情进展迅速,对于扭转严重者,目前常采用手术治疗,以防止危及生命,故而需给予早期快速有效诊断,为临床治疗及预后制定计划,改善患者病情^[2-3]。以往临床常给予患者B超检查,但由于积液及肠道胀气等因素无法观察患者蒂扭转情况,无法给予临床指导^[4]。随着医疗水平的提升,CT技术逐渐走向成熟,多层螺旋CT(MSCT)多平面重建(MPR)技术在临床中已得到广泛运用,可清晰探测患者囊肿病理情况,故本次研究旨在探讨MSCT MPR技术在诊断卵巢囊肿蒂扭转中的应用价值,具体研究结果如下。

1 资料与方法

1.1 一般资料 选择2015年1月至2020年6月于医院检测的45例卵巢囊肿蒂扭转患者,年龄20~45岁,平均年龄(35.81±3.32)岁,临床表现为腹部疼痛,平均疼痛(1.83±0.51)d,劳动后突发下腹疼痛或剧烈疼痛22例,诱发性下腹疼痛10例,持续性小腹痛13例,另有8例患者伴随恶心、呕吐,3例患者伴随发热症状。

纳入标准:B超检查盆腔有囊性包块;患者伴随不同程度疼痛;年龄在20~50岁之间。排除标准:合并其它类型恶性肿瘤

者;存在精神、认知异常或沟通障碍者;依从性差、无法配合本研究。

1.2 方法

1.2.1 螺旋CT机扫描方法 给予患者四层螺旋CT机(Toshiba Aquilion4)扫描检查,患者饮用800mL温水,取仰卧位,调整管电流为350mA,电压为120kV,层厚为2.0mm,扫描时间为0.5s,取2.0螺距,2mm间隔,512×512矩阵。患者一次屏气至扫描完成,以减少减少运动伪影的产生,扫描范围为耻骨联合下缘以上部位,包括全部病灶,扫描完成后,给予加强扫描,建立原始数据,取1mm层厚,1mm间隔,将数据录入Toshiba SG102工作站,给予MPR图像处理,再根据患者病情给予相应角度调整,以显示最佳效果,对囊肿大小、囊肿位置、囊壁、囊内密度、盆腔积液、囊肿与周围组织的关系、扭转蒂部等情况进行观察。

1.2.2 统计学方法 采用SPSS 21.0统计软件进行数据分析,计量资料以($\bar{x} \pm s$)描述,行t检验,计数资料以(%)描述,行 χ^2 检验, $P<0.05$ 表示差异有统计学意义。

2 结果

2.1 MSCT结果 患者MSCT检测均显示盆腔囊性肿块,囊肿平均直径为(5.25±1.01)cm,大小在3.5cm×4.2cm×3.9cm~14.9cm×14.5cm×15.3cm之间。有12例患者囊壁未增厚,33例

(下转第74页)

【第一作者】马煜磊,女,主治医师,主要研究方向:妇科。E-mail: zhishi1027@163.com

【通讯作者】马煜磊

- [5] Wang C H, Ma J Z, Zhang C C, et al. Comparison of high-viscosity cement vertebroplasty and balloon kyphoplasty for the treatment of osteoporotic vertebral compression fractures [J]. Pain Physician, 2015, 18 (2): 187-194.
- [6] Sun Z Y, Li X F, Zhao H, et al. Percutaneous balloon kyphoplasty in treatment of painful osteoporotic occult vertebral fracture: A retrospective study of 89 cases [J]. Med Sci Monit, 2017, 23: 1682-1690.
- [7] Bornemann R, Jansen T R, Kabir K, et al. Comparison of radio frequency-targeted vertebral augmentation with balloon kyphoplasty for the treatment of vertebral compression fractures: 2-year results [J]. Clin Spine Surg, 2017, 30 (3): 247-251.
- [8] Edidin A A, Ong K L, Lau E, et al. Morbidity and mortality after vertebral fractures: comparison of vertebral augmentation and nonoperative management in the medicare population [J]. Spine, 2015, 40: 1228-1241.
- [9] Xu Z, Hao D, He L, et al. An assessment system for evaluating the severity of thoracolumbar osteoporotic fracture and its clinical application: A retrospective study of 381 cases [J]. Clin Neurol Neurosurg, 2015, 139: 70-75.
- [10] Xu Z, He B, Liu T, et al. Evaluation of reliability of thoracolumbar osteoporotic vertebral compression fracture severity score system [J]. Chin J Trauma, 2016, 32: 772-776.
- [11] Zhai W, Jia Y, Wang J, et al. The clinical effect of percutaneous kyphoplasty for the treatment of multiple osteoporotic vertebral compression fractures and the prevention of new vertebral fractures [J]. Int J Clin Exp Med, 2015, 8: 13473-13481.
- [12] Yan L, Jiang R, He B, et al. A comparison between unilateral transverse process-pedicle and bilateral puncture techniques in percutaneous kyphoplasty [J]. Spine, 2014, 39: B19-B26.
- [13] Cheng X, Long H Q, Xu J H, et al. Comparison of unilateral versus bilateral percutaneous kyphoplasty for the treatment of patients with osteoporosis vertebral compression fracture (OVCF): A systematic review and meta-analysis [J]. Eur Spine J, 2016, 25: 3439-3449.
- [14] Wasfie T, Jackson A, Brock C, et al. Does a fracture liaison service program minimize recurrent fragility fractures in the elderly with osteoporotic vertebral compression fractures? [J]. Am J Surg, 2018, 217: 557-560.
- [15] Lee B G, Choi J H, Kim D Y, et al. Risk factors for newly developed osteoporotic vertebral compression fractures following treatment for osteoporotic vertebral compression fractures [J]. Spine J, 2018, 19: 301-305.
- [16] Yu W B, Jiang X B, Liang D, et al. Risk factors and score for recollapse of the augmented vertebrae after percutaneous vertebroplasty in osteoporotic vertebral compression fractures [J]. Osteoporos Int, 2018, 30: 423-430.
- [17] Blatter T R, Schnake K J, Gonschorek O, et al. Nonsurgical and surgical management of osteoporotic vertebral body fractures: Recommendations of the spine section of the German Society for Orthopaedics and Trauma (DGOU) [J]. Global Spine J, 2018; 48: 50S-55S.
- [18] Singh M, Arora S, Kaur A, Ghildiyal S, Kumar R. Patterns of age and sex-related variations in bone mineral density of lumbar spine and total femur: A retrospective diagnostic laboratory-based study [J]. J Midlife Health, 2018, 9: 155-161.
- [19] Adogwa O, Martin J R, Huang K, et al. Preoperative serum albumin level as a predictor of postoperative complication after spine fusion [J]. Spine (Phila Pa 1976) 2014; 39: 1513-1519.
- [20] Yoon-Chung Kim, Young-Hoon Kim, Kee-Yong Ha. Pathomechanism of intravertebral clefts in osteoporotic compression fractures of the spine [J]. The Spine Journal, 2014, 14 (4): 659-666.
- [21] 张雪琴, 程晓光, 甘利伟, 等. 椎体脆性骨折多模态影像的诊断价值比较 [J]. 中国CT和MRI杂志, 2018, 16 (5): 147-150.
- [22] 张桂川, 尤连波, 葛海, 等. 基于DR、CT及MRI多征象探讨经皮胸腰椎体成形术后骨水泥渗漏危险因素 [J]. 中国CT和MRI杂志, 2023, 21 (2): 151-154.
- [23] 蒋新新, 钱伟军, 李立. 中老年人群中不同胸腰椎骨密度的定量CT分析 [J]. 中国CT和MRI杂志, 2022, 20 (5): 179-182.
- [24] 赵少莉, 李兵, 李程, 等. 骨质疏松性椎体压缩性骨折MRI信号与PVP手术效果的相关性 [J]. 中国CT和MRI杂志, 2021, 19 (9): 161-163.

(收稿日期: 2022-10-04)

(校对编辑: 姚丽娜)

(上接第 62 页)

患者囊壁增厚, 平均厚度为 (8.31 ± 2.12) mm; 15例患者囊壁密度不均匀, 见分层, CT值为35~65HU; 30例患者囊壁均匀, 两侧囊肿厚度不对称, 观察患者囊壁最厚处, 存在条索状软组织相连, 延伸至一侧子宫角部或附件, MPR可见蒂部一端连子宫角部或附件, 另一端连结囊肿; 囊壁较为光滑, 未见壁结节, 但有15例患者存在囊壁钙化; 囊内密度较为均匀, CT值范围为0~20HU; 囊肿壁光滑、清晰, 囊壁无强化; 有27例患者存在盆、腹腔积液, 积液位于子宫直肠陷窝、肝肾隐窝、盆底、结肠旁沟、囊肿边缘、肝周, CT值范围为3~20HU。

2.2 手术病理表现 45例患者中, 有12例患者左侧蒂扭转, 33例患者右侧蒂扭转, 23例患者伴同侧输卵管扭转, 囊肿扭转180~900度, 平均扭转角度为 (568.45 ± 152.57) 度, 32例存在不同程度输卵管、囊壁出血型坏死, 输卵管腔内有凝血块的患者有15例, 30例存在输卵管间质、囊壁充血水肿, 9例患者囊肿与周围组织产生粘连; 12例患者为单纯性卵巢囊肿, 9例患者为卵巢冠囊肿; 15例患者为黄体囊肿, 9例患者为卵巢巧克力囊肿。

2.3 手术病理结果与MSCT结果比较 手术病理诊断准确率高于MSCT(100.00% VS 84.44%)($P < 0.05$), MSCT与手术病理对于囊肿平均直径、囊肿加厚厚度检查结果相近($P > 0.05$), 无统计学意义, 见表1。

表1 手术病理结果与MSCT结果比较

诊断方法	例数	囊肿平均直径(cm)	囊壁加厚厚度(mm)	诊断准确率
MSCT	45	5.25 ± 1.01	8.31 ± 2.12	38(84.44%)
手术病理	45	5.30 ± 1.07	7.95 ± 1.93	45(100.00%)
t/χ^2		0.230	0.852	5.577
P		0.818	0.397	0.018

3 讨论

卵巢囊肿蒂扭转在妇科疾病中发生率较高, 主要发生在生育期妇女, 当患者突发下腹疼痛, 或腹痛逐渐加重, 超声或查体发现附件肿块, 考虑具有囊肿蒂扭转^[5]。卵巢囊肿蒂扭转程度与囊肿机械障碍程度存在密切关系, 病情进展迅速, 扭转时间越长、周数越多, 会导致病情越为危急, 患者发病后常伴随呕吐、恶心等症状, 严重者可导致患者休克, 需要早诊断、早治疗^[6]。既临床主要采用

B超诊断, 但其手肠气影响, 诊断效果会因操作者技术水平存在差异, 且特征性图像显示率较低, 需调整诊断措施^[7]。

对卵巢囊肿蒂扭转进行诊断, 需对扭转蒂部部位进行清晰显示, MSCT检测具有较高分辨率, 经薄层重建、MPR等处理后, 可重建多角度、多方位图像, 观察患者扭转的蒂部^[8]。由于患者卵巢囊肿壁较薄, 常规影像检查难以观察其囊肿壁变化, 而当患者产生蒂扭转, 静脉回流受到阻塞, 囊壁会产生淤血及水肿, 导致囊肿壁加厚, 接近囊壁蒂部部位受力越大, 其囊壁肿胀增厚越明显^[9]。研究指出, MSCT可清晰显示囊肿蒂扭转征, MSCT结合MPR技术可观察患者子宫直肠窝及盆腔囊肿表面的积液情况, 为临床诊断提供参考^[10]。

本次研究给予卵巢囊肿蒂扭转患者MSCT结合检查, 可清晰观察患者腹腔囊性肿块, 显示患者囊壁增厚、囊肿厚度、囊壁钙化、盆腹腔积液、积液位置等情况; 与手术病理组织对比, 其诊断准确率偏低, 但MSCT与手术病理对于囊肿平均直径、囊肿加厚厚度检查结果相近, 故卵巢囊肿蒂扭转在MSCT及MPR技术下有独特的特征表现, 可了解到患者目前的情况, 具有较高临床价值。

参考文献

- [1] 张留英. 经阴道彩超与经腹部彩超在卵巢囊肿蒂扭转诊断中的效能比较 [J]. 中国民康医学, 2021, 33 (9): 99-100.
- [2] 李惠. 妊娠合并卵巢囊肿蒂扭转手术治疗16例临床分析 [J]. 医药前沿, 2014 (19): 180-181.
- [3] 郭仁巧, 殷为民, 花村. CT引导下卵巢囊肿硬化治疗的临床研究 [J]. 罕少疾病杂志, 2006, 13 (5): 27-28.
- [4] 刘永建. 螺旋CT结合多平面重建技术诊断卵巢囊肿蒂扭转的临床价值探讨 [J]. 现代医学影像学, 2018, 27 (8): 113-114.
- [5] 杨荣泉, 杨彬, 谢洪群, 等. 经阴道与经腹超声诊断对卵巢囊肿蒂扭转的价值 [J]. 中国妇幼保健, 2017, 32 (16): 3990-3992.
- [6] 赵志清, 罗帝林, 杨茂洪, 等. 多层螺旋CT多层重建在诊断卵巢囊肿蒂扭转中的应用 [J]. 中华实用诊断与治疗杂志, 2010, 24 (10): 955-957.
- [7] 张桂芬, 李荣香, 李素红. 保留卵巢手术治疗卵巢囊肿蒂扭转14例分析 [J]. 中华实用诊断与治疗杂志, 2009, 23 (3): 301-302.
- [8] 段文飞, 白景阳. 多层螺旋CT多平面及曲面重建在急性阑尾炎诊断中价值 [J]. 中华实用诊断与治疗杂志, 2016, 30 (03): 296-298.
- [9] 杨蓓, 张树桐, 王翔, 等. 女性盆腔囊性病变的螺旋CT鉴别诊断价值 [J]. 中国妇幼保健, 2015, 30 (08): 1270-1272.
- [10] 陈平. 螺旋CT联合多平面重建技术在卵巢囊肿蒂扭转的临床诊断价值 [J]. 世界最新医学信息文摘 (连续型电子期刊), 2019, 19 (40): 169, 171.

(收稿日期: 2021-11-07)

(校对编辑: 姚丽娜)