

肾综合征出血热胸部并发症的 CT 表现

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摘要 目的:总结肾综合征出血热(EHF)胸部并发症的 CT 表现和探讨胸部 CT 表现对肾综合征出血热的诊断价值。方法:分析 60 例经 HFRS-IgM 阳性确诊的 HFRS 的胸部螺旋 CT 表现,其中轻型 5 例、中型 20 例、重型 28 例、危重型 7 例。结果:肺部感染 22 例,肺水肿 12 例,胸腔积液 41 例,心包积液 17 例,其中,心包积液合并肺水肿者 4 例,肺部感染并胸腔积液者 4 例,胸腔积液合并下肺局部膨胀不全 18 例,胸部 CT 检查正常 8 例。结论:肾综合征出血热,胸部并发症发生几率较高,以胸腔积液及胸腔积液并下肺膨胀不全发生几率最高,HFRS 的胸部 CT 表现对于临床有很好的治疗意义,早期 CT 检查可准确显示肾综合征出血热病人胸部改变的特征。

关键词 肾综合征出血热 胸部 X 线计算机 CT

中图分类号:Q95-3 R512.8 文献标识码:A 文章编号:1673-6273(2011)10-1950-03

CT Features of Chest Complications in Hemorrhagic Fever with Renal Syndrome

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ABSTRACT Objective: To investigate the CT features of chest complications of epidemic hemorrhagic fever (EHF) with Renal Syndrome and to study its clinical diagnostic application. **Methods:** We analyzed the CT features of chest of sixty patients confirmed by the HFRS-IgM positive. Among the patients, 5 cases is light; 20 cases, medium; 28 cases, severe; 7 cases, critical. **Results:** Lung pneumonia in 22 cases, pulmonary edema in 12 cases, pleural effusion in 41 cases, pericardiac effusion in 17 cases. In them, pericardiac effusion with pulmonary edema 4 cases, lung pneumonia and pleural effusion in 4 cases, pleural effusion with partial atelectasis 18 cases, the normal in 8 cases. **Conclusion:** There is a high probability of occurrence in Epidemic hemorrhagic fever with renal syndrome. The CT examination of chest have a very good treatment and clinical significance. Pleural effusion and pleural effusion with partial atelectasis occur the most often. Earlier CT examination of chest can show the early chest complications change of the EHF patients.

Key words: Epidemic hemorrhagic fever with renal syndrome; chest; X-ray computer; CT

Chinese Library Classification(CLC): Q95-3 R512.8 **Document code:** A

Article ID: 1673-6273(2011)10-1950-03

前言

肾综合征出血热,为流行性出血热病毒(EHFRV)引起的自然疫源性传染性疾病,发病地区较为广泛,世界几十个国家均有报道,在我国主要是啮齿类如黑线姬鼠、褐家鼠等为流行性出血热病毒(EHFRV)主要宿主和传染源。流行性出血热病毒(EHFRV),属布尼亚病毒科的汉坦病毒属。为负性单链 RNA 病毒,形态呈圆形或卵圆形,有双层包膜,外膜上有纤突。病毒侵入人体通过直接损伤和免疫作用致使全身广泛性小血管和毛细血管内皮损伤,进而引起机体多个脏器损害和功能障碍,HFRS 一年四季均有散发病例,但主要集中在 11 月至次年 1 月,5-7 月为发病数为小高峰。病例呈散发,男性明显多于女性,

青壮年为高发年龄,农民占多数,发病季节呈双峰型,但秋冬季高峰尤其明显(发病数占全年的 40%左右),临床上以发热、休克、充血出血和急性肾功能衰竭为主要表现。肾综合征出血热,胸部并发症发生几率较高,临床可达 60%以上,其并发症种类较多,容易混淆,胸部并发症主要表现为:肺部感染、肺水肿、胸腔积液、心包积液,胸腔积液合并下肺局部膨胀不全。CT 越来越多的应用于观察肾综合征出血热病人各个脏器并发症的诊断,可以为临床提供直接的影像学资料,帮助临床早期确定治疗方案,还可随访判断预后,在肾综合征出血热的诊断和治疗中发挥重要的作用。

1 材料与方法

1.1 临床资料

60 例肾综合征出血热病人为 2006 年 10 月~2010 年 5 月间我院住院病人行 CT 检查者,其中男 42 例,女性 18 例;年龄 23~61 岁,平均为 35 岁,经过临床表现和实验室检查确诊为肾综合征出血热;发病季节在 10 月至次年 2 月 52 例,3~6 月 8 例。

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(收稿日期 2011-02-23 接受日期 2011-03-18)

临床分型符合其中轻型 5 例、中型 20 例、重型 28 例、危重型 7 例。

1.2 方法

病例用通用螺旋 CT 机进行胸部 CT 检查,横轴位,层厚为 10 mm,螺距 1:1.5,重建层厚为 5 mm。扫描范围自双肺尖至双肺膈角。

2 结果

肺部感染 22 例,表现为单侧或双侧下弥漫性肺沿纹理分布的斑片状模糊影,少数为小斑片状密度增高影,双下肺透亮度可减低,分布尚均匀,局部可融合。双侧 18 例,单侧 4 例。肺水肿 12 例,早期表现为肺门血管影增粗,肺血管分支增粗、模糊,双肺门增大,随着病情的进展双肺纹理进一步增强模糊,两肺中下野内中带出现小片状,点状或云絮状密度较淡的增高

影,边缘模糊,双肺透明度普遍降低,典型肺水肿表现为两肺门周围呈蝶翼状磨玻璃状影,同时有少量心包积液者 4 例。胸腔积液 41 例,表现为肺外周与胸壁呈平行的弧形、新月形或半月形影,密度均匀,呈液性密度,大部分为中量及大量积液,其中合并单侧或双侧下肺局部膨胀不全者 18 例,表现为积液前方弧形的软组织密度影。心包积液 17 例,临床表现视病因不同而异,心包积液量少者可无症状或症状轻微,且易被 HFES 原发病的症状所掩盖。一般来说,CT 比超声的分辨率要高,尤其对小的病变敏感性要高一点。CT 表现为心脏包膜增厚及心包内液体密度影。

发生几率如表 1,其中,胸腔积液发病率较高,达 68%,其中合并下肺膨胀不全者约 51%,下肺膨胀不全均并发胸腔积液,说明下肺膨胀不全与胸腔积液有密切联系。

表 1 60 例 HFRS 胸部并发症发生率
Table 1 Probability of chest complications occurrence in HFRS

Cases	Lung pneumonia	Pulmonary edema	Pericardiac effusion	Pleural effusion	Partial atelectasis	Rate
18	(-)	(-)	(-)	(+)	(+)	30%
4	(-)	(+)	(+)	(-)	(-)	6%
5	(+)	(-)	(+)	(-)	(-)	8%
4	(+)	(-)	(-)	(+)	(-)	6%
5	(+)	(+)	(+)	(+)	(+)	8%
3	(+)	(+)	(-)	(+)	(+)	5%
5	(+)	(-)	(-)	(+)	(+)	8%
2	(-)	(-)	(+)	(-)	(-)	3%
6	(-)	(-)	(-)	(+)	(-)	10%
8	(-)	(-)	(-)	(-)	(-)	13%
Total	22	12	17	41	31	
Rate	36%	20%	28%	68%	51%	

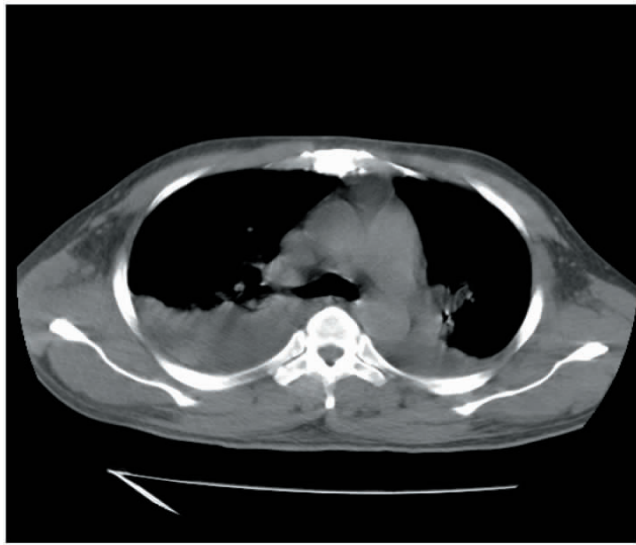


图 1 双侧胸腔积液
Fig.1 Bilateral pleural effusion

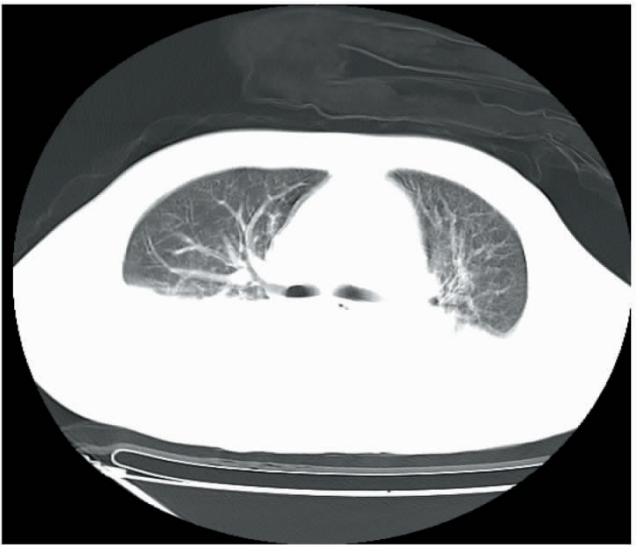


图 2 双侧胸腔积液
Fig.2 Bilateral leural effusion

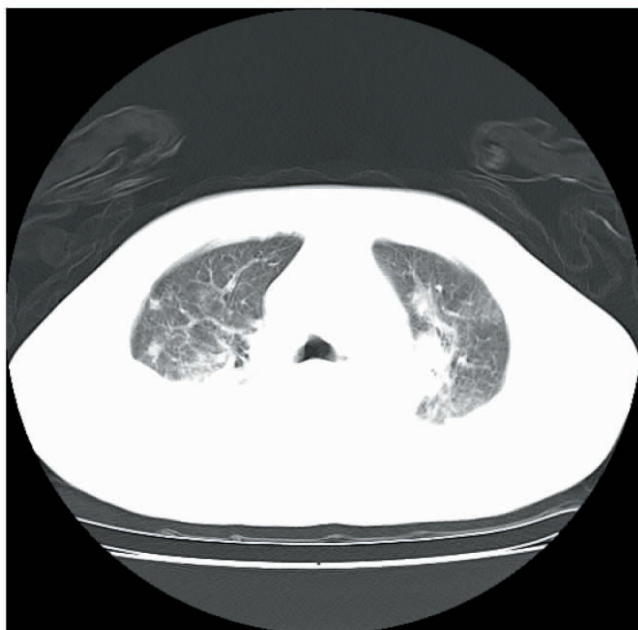


图3 胸腔积液,肺水肿,肺部炎症

Fig.3 Bilateral pleural effusion,pulmonary edema, lung pneumonia



图4 双侧胸腔积液并右下肺膨胀不全

Fig.4 Bilateral pleural effusion with right partial atelectasis

3 讨论

HFRS 病变广泛,全身各系统均可受累,腹部以肾脏和肝脏为主,胸部心脏及肺常受累,因其临床表现多样,易为疾病本身的临床症状所掩盖而延误诊断和治疗。

胸部并发症中,胸腔积液及胸腔积液合并下肺局部膨胀不全较为常见,除病毒病理致病之外,可能与肾综合征出血热患者早期确诊之后的卧床和体位有关,HFRS 主要为渗出性积液,肺泡型上皮细胞损伤使表面活性物质生成减少,加上水肿液的稀释和肺泡过度通气消耗表面活性物质,使肺泡张力增高,肺的顺应性降低,可以形成肺不张。

肺水肿是 HFRS 患者最严重的并发症之一,出血热发生的肺水肿有三种,一种是在低血容量休克期因血管严重损害,通过性增高,血浆渗出而引起的渗出性肺水肿,另一种是发生

在少尿期的高血容量性肺水肿,第三种是心力衰竭引起的心源性肺水肿。HFRS,病死率甚高,随着血液透析的治疗的广泛应用,病死率有所减低。胸腔积液、心包积液可发生在各期如发热期、休克期及少尿期,与发热期渗出,低蛋白血症,淋巴回流异常,膈肌缺损等有关。

肺部感染在 HFRS 各期均可发生,但多见于少尿期和多尿期阶段,此时因机体已遭受了严重毒血症,微循环障碍,肾功能衰竭,水电解质酸碱平衡失调等因素致使机体抵抗力降低,极易引起肺部感染。

单纯发生肺水肿、单纯发生肺部感染、单纯发生下肺局部膨胀不全的几率,在本组病例中均为 0,提示 HFRS 胸部并发症中,肺水肿、肺部感染、下肺局部膨胀不全往往合并其他肺部并发症发生。

60 例行 CT 检查经确诊的 HFRS 患者,胸部 CT 正常患者 8 例,约占 13%,异常例数约占 87%,阳性比例较高,可能与大部分经确诊的 HFRS 早期在下级医院的不能确诊,及延误治疗使病情加重有关。

HFRS 患者胸部 CT 所见有一定的特征性,尤其对合并肺部感染、肺水肿及心包积液、胸腔积液等危重型病例。病程早期行 CT 检查能快速准确了解相关胸部改变,判断病变程度及病情,对 HFRS 患者后遗症的预防和早期治疗将是非常有意义的。

参考文献(References)

- [1] 杨军妍,宗嵘,张鹏.肾综合征出血热多脏器损害的螺旋 CT 诊断[J].中国医学影像学杂志 2009,17(5):339-342
Yang Jun yan, ZONG Rong, ZhANG Peng. Spiral CT Diagnosis of Multiple Organ System Impairment with HFRS Chinese [J]. Med Imaging, September 2009, 17(5):339-342
- [2] 刘风光,鲍磊,彭存银.1998~2007 年胶州市肾综合征出血热监测分析[J].预防医学论坛 2009,15(5):466
Liu Feng-guang, Bao Lei, Peng Cun-yin. Monitoring and Analysis of HFRS in Jiaozhou City from 1998 to 2007 [J]. Prev Med Trib, 2009, 15(5):466
- [3] Nguyen AT, Penalba C, Bernadac P, et al. Respiratory manifestations of hemorrhagic fever with renal syndrome. Retrospective study of 129 cases in Champagne-Ardenne and Lorraine [J]. Presse Med, 2001, 20, 30(2):55-63
- [4] Acham-Roschitz B, Aberle SW, Pirker N, et al. Nephropathia epidemica (puumala virus infection) in Austrian children [J]. Pediatr Infect Dis J, 2010, 29(9):874-880
- [5] Zuo SQ, Fang LQ, Zhan L, et al. Geo-spatial hotspots of hemorrhagic fever with renal syndrome and genetic characterization of Seoul variants in Beijing, China [J]. PLoS Negl Trop Dis, 2011, 5(1):945
- [6] Gong Z, Weng J, Zhao Z, et al. The changes in serum antibody level after immunization with HFRS vaccine [J]. Zhonghua Yu Fang Yi Xue Za Zhi, 2000, 34(6):351-354
- [7] Han D, Liu Z, Han Q, et al. Acute Kidney Injury in Patients with Hemorrhagic Fever with Renal Syndrome Caused by Hantaan Virus: Comparative Evaluation by RIFLE and AKIN Criteria [J]. Vector Borne Zoonotic Dis, 2010, 13(13):161

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意义。此外,高危型多重感染是否与宫颈癌病变相关还未有定论,本研究发发现常州地区高危型多重感染率为 24.31%,为后续相关研究提供一定的流行病学依据。

本课题研究了常州地区整体妇女人群 HPV 感染情况,为后续相关研究提供了可靠的流行病学依据。在此研究基础上,我们认为在妇女体检中,尽早大规模展开 HPV 检测,对宫颈癌及其癌前病变具有很大的预防与治疗意义。

参考文献(References)

- [1] Castellsague X, Diaz M, De Sanjose S, et al. Worldwide human papillomavirus etiology of cervical adenocarcinoma and its cofactors: implications for screening and prevention[J]. J Natl Cancer Inst, 2006, 98(5): 303-315
- [2] Giree M, Matovina M, Milutin GN, et al. Advances in cervical cancer control and future perspectives[J]. Coll Antropol, 2010, 34(2):731-736
- [3] Sigurdsson K. Cervical cancer: cytological cervical screening in Iceland and implications of HPV vaccines [J]. Cytopathology, 2010, 21(4): 213-222
- [4] Bosch FX, de Sanjosé S. Chapter 1: Human papillomavirus and cervical cancer-burden and assessment of causality [J]. J Natl Cancer Inst Monogr, 2003, (31):3-13
- [5] Manavi M, Hudelist G, Fink-Retter A, et al. Human papillomavirus DNA integration and messenger RNA transcription in cervical low- and high-risk squamous intraepithelial lesions in Austrian women[J]. Int J Gynecol Cancer, 2008, 18(2):285-294
- [6] Clifford GM, Rana RK, Franceschi S, et al. Human papillomavirus genotype distribution in low-grade cervical lesions: comparison by geographic region and with cervical cancer [J]. Cancer Epidemiol Biomarkers Prev, 2005, 14(5):1157-1164
- [7] 彦华, 于建宪, 王丽丽等. 导流杂交 HPV 基因分型在子宫颈 LCT 中应用[J]. 齐鲁医学杂志, 2008, 23(3) 249-251
YANG Yan-hua, YU Jian-xian, WANG Li-li et al. Application of HPV-genotyping by hybridization on cervical liquid based cytology samples [J]. Medical Journal of Qilu, 2008, 23(3) 249-251
- [8] 曲秀平, 夏蓓, 杨宁等. 260 例 TCT 正常的宫颈糜烂患者 HPV 感染状况分析[J]. 实用妇产科杂志, 2007, 23(10) 618-619
QU Xiuping, XIA Bei, YANG Ning, et al. Investigation of HPV Infection in 260 Cervical Erosion Patients with Normal TCT [J]. Journal of Practical Obstetrics and Gynecology, 2007, 23(10) 618-619
- [9] 赵健, 杨英捷, 廖泰平. 导流杂交基因芯片技术在人乳头状瘤病毒感染分型检测中的临床应用[J]. 中华检验医学杂志, 2006, 29(12): 1418-1151
ZHAO Jian, YANG Ying-jie, LIAO Qin-ping. Application of flow-thr-

ough hybridization and gene chip on human papillomavirus subtype detection in clinical [J]. Chinese Journal of Laboratory Medicine, 2006, 29(12):1418-1151

- [10] Herrero R, Hildesheim A, Bratti C, et al. A population-based study of human papillomavirus infection and cervical neoplasia in rural Costa Rica[J]. J Natl Cancer Inst, 2000, 92:464-474
- [11] Appleby P, Beral V, Berrington de Gonzalez A, et al. Cervical cancer and hormonal contraceptives: collaborative reanalysis of individual data on 16,573 women with cervical cancer and 35,509 women without cervical cancer from 24 epidemiological studies [J]. Lancet, 2007, 370:1609-1621
- [12] Smith JS, Bosetti C, Munoz N, et al. IARC Multi-centric Cervical Cancer Study Group. Chlamydia trachomatis and invasive cervical cancer: A pooled analysis of the IARC multicentric case-control study[J]. Int J Cancer, 2004, 111:431-439
- [13] Lai CH, Chao A, Chang CJ, et al. Host and viral factors in relation to clearance of human papillomavirus infection: a cohort study in Taiwan[J]. Int J Cancer, 2008, 123:1685-1692
- [14] 王佐, 张敏鸣, 胡艳君等. 妊娠各期人乳头瘤病毒的感染率及其基因分型[J]. 中国卫生检验杂志, 2008, 18(4) 657-659
WANG Zuo, ZHANG Min-ming, HU Yan-jun, et al. Infection rate and genotyping methods of carrying out human papilloma virus in different period of pregnancy[J]. Chinese Journal of Health Laboratory Technology, 2008, 18(4): 657-659
- [15] 蒋汉梁, 张颀, 周林福等. 湖州地区妇女宫颈病变人乳头瘤病毒亚型感染情况分析 [J]. 浙江大学学报 (医学版), 2007, 36(6): 549-551
WANG Zuo, ZHANG Min-ming, HU Yan-jun, et al. Infection rate and genotyping methods of carrying out human papilloma virus in different period of pregnancy[J]. Chinese Journal of Health Laboratory Technology, 2008, 18(4):657-659
- [16] Haffari SR, Sabokbar T, Mollahajian H, et al. Prevalence of human Papillomavirus genotypes in women with normal and abnormal cervical cytology in Iran[J]. Asian Pac J Cancer Prev, 2006, 7:529-532
- [17] Brisman WS, Froberg M, Hjerpe A, et al. Age-specific prevalence of HPV genotypes in cervical cytology samples with equivocal or lowgrade lesions[J]. Br J Cancer, 2009, 101:511-517
- [18] 贺国丽, 郑碧娟, 杨舒盈等. 200 例子宫颈癌患者的 HPV 感染研究 [J]. 中国妇幼保健, 2008, 23(30): 4299-4300
HE Guo-Li, ZHENG Bi-Juan, YANG Shu-Ying, et al. The study of HPV infection in cervical cancer of 200 cases[J]. Maternal and Child Health Care of China, 2008, 23(30): 4299-4300

(上接第 1952 页)

- [8] Laine O, Mäkelä S, Mustonen J, Huhtala H, et al. Enhanced thrombin formation and fibrinolysis during acute Puumala hantavirus infection [J]. Joutsu-Korhonen L. Thromb Res, 2010, 126(2):154-162
- [9] Khasanova GM, Iskhakov ER. Influence of occupational activity on serum vitamin antioxidants content in patients after hemorrhagic fever with renal syndrome[J]. Med Tr Prom Ekol, 2010, (3):40-43
- [10] Ma Y, Li Q, Wang J, et al. Cystatin C, a novel urinary biomarker for sensitive detection of acute kidney injury during hemorrhagic fever with renal syndrome[J]. Biomarkers, 2010, 15(5):410-417
- [11] Klingström J, Ahlm C. Hantavirus protein interactions regulate cellular functions and signaling responses [J]. Expert Rev Anti Infect Ther, 2011, 9(1):33-47

- [12] Kim YK, Lee SC, Kim C, et al. Clinical and laboratory predictors of oliguric renal failure in hemorrhagic fever with renal syndrome caused by Hantaan virus[J]. J Infect, 2007, 54(4):381-387
- [13] Pimenov LT, Dudarev MV, Eshmakov SV. Clinicofunctional characteristics of the heart in hemorrhagic fever with renal syndrome [J]. Klin Med (Mosk), 2002, 80(10):28-31
- [14] Baty V, Schuhmacher H, Bourgoin C, et al. Hemophagocytic syndrome and hemorrhagic fever with renal syndrome[J]. Presse Med, 1998, 27(31):1577
- [15] Pejcoch M, Unar J, Kríž B, et al. Characterization of a natural focus of Puumala hantavirus infection in the Czech Republic [J]. Cent Eur J Public Health, 2010, 18(2):116-124