

· 临床病理讨论 ·

Clinicopathological Conference

A 96 year old woman with cough, dyspnea and vomiting

(The third case)

Case Presentation

The 304 Hospital of PLA

A 96 year old woman was admitted to the hospital because of cough with sputum, dyspnea, nausea and vomiting.

The patient had been limited in bed for one year as her advanced age and difficulty on walking, but her general condition had been relatively stable until one week earlier when she began to have cough with lack of strength to expectorate sputum, and have nausea, dyspnea, vomiting of gastric content, fecal and urinary incontinence, bowel movement 1-2 times/d with yellow and tarry stool appearing alternately.

Her relatives narrated that she had the history of hypertension, coronary heart disease, geriatric valvular heart disease and cholecystectomy. Her temperature was 36°C, the pulse rate was 80/min, and the respiration rate was 18/min. The blood pressure was 120/80 mm Hg.

On physical examination, the patient was in passive position, malnourished, and was too weak to answer any questions. Many big patches of bed sore with ulcer and pus were noticed on right lateral back, buttock, and medial and lateral sides of thigh. Harsh breath, dry and moist rales could be heard at both lung bases. The heart rhythm was normal, a grade-2 systolic murmur was heard at auscultation area of aortic and mitral valves. Abdominal examination found no abnormalities. Moderate edema was found at distal part of right limb.

A chest radiograph revealed a large patchy shadow at right upper lobe, increased markings of left lung, while the right edge of heart, bilateral costophrenic angles, and diaphragmatic surface were indistinct, and aorta was tortuous and calcific. An abdominal ultrasonographic examination showed normal size and shape of liver and spleen. The gall bladder had

been resected. Echocardiogram revealed aortic valve calcification and stenosis, calcification of posterior cusp of mitral valve, and left ventricular ejection fraction being 59 percent. An electrocardiogram showed normal rhythm with low voltage. Laboratory tests were performed on the admission, hematologic and blood chemical values are showed in Table 1. Stool examination revealed positive occult blood. Urinary examination showed: protein(+), 5-8 red cells and

Table 1 Hematologic and blood chemical values

Variable	On Admission	On seventh hospital day
White cells(G/L)	15.0	-
Neutrophils(%)	82	-
Haptoglobin(G/L)	158	-
Glucose(mmol/L)	7.8	6.1
Urea nitrogen(mmol/L)	32.09	4.45
Creatinine(mmol/L)	116	72
Uric acid	631	299
Protein(G/L)	57	57
Albumin	32	32
Globulin	25	25
Sodium(mmol/L)	128	131
Potassium(mmol/L)	6.0	5.2
Chloride(mmol/L)	97	101
Creatine kinase(U/L)	311	161
MB fraction	34	20
ALT(U/L)	52	17
AST(U/L)	79	51
LOH(U/L)	421	285
HBDBH(U/L)	307	224
ESR(mm/h)	74	
pH		7.319
PCO ₂ (mmHg)		47.8
PO ₂ (mmHg)		54.2
SO ₂ (%)		93
HCO ₃ (mmol/L)		24.7

0-2 white cells / high-power field. Preliminary diagnoses after admission were pneumonia, hemorrhage of digestive tract and bed sore. The anti-infective, hemostatic treatment, intravenous nutrition support, correction of electrolyte disorder and intensive nursing of bed sore were given. But the condition of the patient was not improved significantly. The patient appeared weak and listless. She could not take food, and had the edema worsened. On the 7th hospital day, the respiration rate was 27-40/min, with hypopnea and

tachypnea. The blood chemicals and gas values were examined (Table 1). Besides the continuous use of anti-infective and other supporting therapies, the respiratory stimulant (lobeline 3mg) was given to correct the respiratory failure. Then the respiration became stable. On the 10th hospital day, the patient was in deep coma, then began to breath as sighing at 22:00 with cyanosis of lips and terminals of limbs. Resuscitation measures failed and the patient died.

Clinical Discussion

Dr. Peng Chaojin: The clinical characteristics of this case are suggestive of multiple organ failure in the elderly (MOFE) as the patient was very old, with general asthenia and malnutrition. But the clinical symptoms were not typical and characteristic. The X-ray feature showed: a patchy shadow at right upper lobe and bilateral indistinct costophrenic angles, which infer the lung diseases as follows: ① Severe pneumonia. But the patient did not have typical manifestation, such as fever, severe symptoms of respiratory tract, etc. ② Pulmonary tuberculosis. The lack of low fever, night sweat, and chronic cough with sputum and blood does not suggest the diagnosis. But we should take the case seriously that the clinical signs of pneumonia and pulmonary tuberculosis in elderly might be untypical, and make the diagnosis difficult and treatment not ideal. ③ Atelectasis. X-ray feature is suggestive of atelectasis, but the basic illness should be detected. In my opinion, besides pneumonia and pulmonary tuberculosis, lung tumor should be considered. Multiple organ failure in the elderly might be the final cause of the death. As pneumonia could exist on the bases of old age, long time in bed, malnutrition, especially combined with pulmonary tuberculosis and lung tumor, it is the primary cause of multiple organ failure in the elderly.

Dr. Hou Zhanjun: The patient was of advanced age, had a history of hypertension and coronary heart disease, and had been in bed for 1 year. Positive signs included moist rales at both lung bases

and bed sore. X-ray showed a patchy shadow at right upper lobe and bullae of lung at low lobe. Positive results of tests showed impairment of renal function, increase in myocardial enzyme, and positive occult blood. The features of clinical signs suggest such diagnoses as follows: pneumonia, malnutrition, electrolyte disorder, acid-base disturbance, infection of skin, myocardial infarction, and probable heart failure. Pulmonary infection acted as initiator and played major role in induction of MOFE. Pulmonary abscess and infarction could not be ruled out as the sign of X-ray, the history of long-time bedridden, and dyspnea. But these diagnoses need to be identified by nuclide scanning and bronchoscopy. I think that MOFE induced by pneumonia was the cause of the death.

Dr. Yin Jian: According to the clinical signs, I think the diagnoses were as follows: pulmonary infection, respiratory failure, hemorrhage of digestive tract, acute endogastitis, malnutrition, hypoproteinemias, acute renal failure, infection of urinary tract, heart failure. But lung tumor, digestive tract tumor, pneumoedema could not be ruled out. Myocardial infarction should not be included as the cause of the increase in myocardial enzyme might be heart failure and shock. The cause of the death, as I think, was multiple organ dysfunctions aggravated by pulmonary infection.

Dr. Shen Dong: The main features of the patient were old age and decreased general reaction to stress. Myocardial infarction did not supported by

electrocardiogram and clinical features. Increase in myocardial enzyme might be secondary to severe infection, shock, and other organ damage. Heart failure was definite, so the final diagnosis should be MOFE which developed on the basis of multiple organ aging and dysfunctions, aggravated by infection, injuries, arrhythmia, myocardial infarction, and py-

emia, etc. According to recent papers, the causes of MOFE in decreasing order are infection 94.55% (pulmonary infection 72.73%), tumor 14.55%, arrhythmias 7.28%, abuse of drug 5.45%, operation or injury 1.82%, acute myocardial infarction 1.82%.

Pathological Discussion

Dr. Lu Jiangyang: The pathological diagnoses were as follows: ① Peripheral poorly differentiated adenosquamous carcinoma, 5 by 4 by 3 cm, accompanied by suppurative and colliquative necrosis at apical and posterior segments of right lung. The lymph nodes at hilus of lung proliferated reactively in grade 0/7. Acute pulmonary abscess existed at right lung. There were acute fibrinous purulent pleurisy at right upper thoracic wall, and thoracic hydrops. Bilateral pulmonary alveoli were in the state of edema and had hyaline membrane formation. There were edema, severe stasis of blood, and local fibrosis at pulmonary interstitial tissue. Focal collapse, chronic bronchitis, and pulmonary emphysema coexisted. ② Fatty infiltration was observed at walls of two ventricles of the heart. Fibrous lipofuscin deposition and focal necrosis of myocardium were found. The ventricles enlarged with calcification of mitral and aorta valves. ③ The focal necrosis and fatty degeneration of liver were observed. ④ Epithelium cloudy swelling, granular and vacuolar degeneration of renal tubules, and renal interstitial edema with inflammatory cell infiltration existed. ⑤ Stasis of blood and hemorrhage of digestive tract, lysis and degeneration of villi were observed in

small intestine. ⑥ Cerebral edema with chronic multiple cerebromalacia existed.

The pathological cause of death should be MOFE that developed from acute pulmonary abscess and acute fibrinous purulent pleurisy which originally induced by carcinoma of right lung.

Dr. Li Pingsheng: MOFE is mainly induced by pulmonary infection, and other internal diseases on the basis of multiple organ aging and chronic dysfunctions. The manifestation of MOFE usually is that two or more organs failed in sequence within a short time. The differentiation of MOFE and MODS (multiple organ dysfunction syndrome) is that MODS often develops without multiple organ aging and chronic dysfunctions, but following shock and infection which induce severe stress reaction, SIRS (systemic inflammatory response syndrome), and hypimmunity. MODS could be reversal unless at its final stage. In contrast, the features of MOFE are the necrosis and proliferation of cells, and fibrosis and collapse of organs.

(Translator HOU Yuntian, Institute of Geriatric Cardiology, General Hospital of PLA)

1 例 96 岁女性多器官功能衰竭 (第 3 例)

1 病历摘要

患者,女性,96 岁。因咳嗽、咳痰、气憋、乏力、恶心、呕吐 1 周,于 2001 年 4 月 22 日急诊入院。患者于 1 年前因高龄不能行走而卧床。1 周前无明显诱因出现咯嗽、气憋、无力咯痰,恶心、呕吐,呕吐物为胃内容物,大小便失禁,大便 1~2 次/d,黄色、黑便交替。

家属代诉既往病史不祥,有高血压、冠心病、老年心脏瓣膜病、胆囊切除术病史。入院查体:体温 36℃,脉搏 80 次/min,呼吸 18 次/min,血压 120/80 mmHg(1 mmHg = 0.1333 kPa)。发育正常,营养较差,被动体位,不能回答问题。右侧背部外侧、臀部、大腿内外侧大片褥疮,有溃烂流脓。双肺呼吸音粗,双肺底可闻及干、湿性啰音,未闻及哮鸣音。心界无扩大,心率 80 次/min,律齐,心音有力,主动脉瓣、二尖瓣听诊区可闻及 II 级收缩期杂音。腹平软,无压痛和反跳痛,肝脾肋下未触及,未触及包块,右侧肢体远端中度浮肿。

辅助检查:X 线胸片可见右上肺大片状密度增高影,右心缘、膈面、肋膈角显示不清,左肺纹理增多、增粗、模糊,主动脉迂曲钙化。腹部 B 超:肝、胰、脾大小、形态正常,胆囊已切除。超声心动图:主动脉瓣膜钙化狭窄,二尖瓣后叶瓣环钙化,左心功能未见异常,射血分数 59%。心电图:窦性心律,肢体导联低电压。

4 月 23 日化验检查:WBC 15.0 G/L, N 0.82, HGB 158 G/L, 血糖 7.8 mmol/L, BUN 32.09 mmol/L, Cr 116 mmol/L, 尿酸 631, 总蛋白 57 G/L, 白蛋白 32 G/L, 球蛋白 25 G/L, ALT 52 U/L, AST 79 U/L, LDH 421 U/L, CK 311 U/L, HBDH 307 U/L, CK-MB 34 U/L。Na 128 mmol/L, Cl 97 mmol/L, K 6.0 mmol/L, 大便检查:未见异常,便潜血(+)。尿检查:蛋白(+), 红细胞 5~8/HP, 白细胞 0~2/HP。ESR 74 mm/h。入院后初步诊断:肺炎, 消化道出血, 褥疮。给予抗感染、止咳化痰、止血、静脉营养支持、纠正电解质紊乱、褥疮护理等治疗, 病情无明显好转。患者衰弱, 精神萎靡, 不能进食, 浮肿进行性加重。4 月 28 日呼吸浅快, 27~40 次/min。血常规无变化; 血糖 6.1 mmol/L, BUN 4.45 mmol/L, Cr 72 mmol/L, 尿酸 299, 总蛋白 57 G/L, 白蛋白 32

G/L, 球蛋白 25 G/L, ALT 17U/L, AST 51 U/L, LDH 285 U/L, CK 161 U/L, HBDH 224U/L, CK-MB 20U/L。Na 131 mmol/L, Cl 101 mmol/L, K 5.2 mmol/L; 动脉血气分析: pH 7.319, PCO₂ 47.8 mm-Hg, PO₂ 54.2 mmHg, SO₂ 93%, HCO₃⁻ 24.7 mmol/L。继续抗感染、给予呼吸兴奋剂(洛贝林 3mg)、纠正呼吸、纠正电解质紊乱、静脉营养支持等。呼吸较平稳; 继续维持治疗。2001 年 5 月 1 日, 出现深昏迷, 呼之不应, 晚 22:00 呈现叹息样呼吸, 口唇及四肢末端紫绀, 四肢末端发凉, 经抢救无效死亡。住院 10d。

死亡诊断:肺炎, 呼吸衰竭; 消化道出血; 冠心病心力衰竭; 褥疮。死亡原因:全身衰竭。病例特点:超高龄, 病史叙述不清, 多脏器功能进行性衰退, 对治疗反应差。

2 临床与病理讨论

彭朝津医师:本病例特点:96 岁高龄, 年老体弱, 老年多脏器功能衰退, 营养差, 全身反应差, 临床症状缺乏典型性、特征性。X 胸片:右上肺密度增高, 体积缩小, 肋膈角显示不清, 肺部改变临床诊断不十分清楚。重症肺炎:缺乏临床典型表现, 无发热, 呼吸道症状不严重。肺结核:无明确病史和低热、盗汗、慢性咳嗽、咯痰、咯血等症状; 老年重症肺炎、肺结核, 由于患者高龄, 反应差, 往往缺乏特征性, 临床并不少见, 诊断有一定困难, 治疗效果差。肺不张: X 胸片提示肺不张, 但临床基础病变不清楚, 肺肿瘤? 肺结核? 肺炎? 老年患者, 超高龄, 不排除肿瘤引起的肺不张。肺炎诊断明确, 患者高龄、长期卧床, 具有发生肺炎的危险因素, 而且发生在肿瘤、结核等病理基础之上并不少见。肺炎常常是多脏器功能衰竭的启动因素, 患者 96 岁高龄, 长期卧床, 营养差, 多脏器功能衰退, 在此基础上, 合并肺炎, 导致全身多脏器衰竭死亡。

侯占军医师:病史特点:① 高龄, 有冠心病、高血压病史, 卧床 1 年。② 双肺湿啰音, X 胸片:右上肺大片状密度增高影, 右下肺有肺大泡影。③ 褥疮。化验检查提示:肾功能异常, 大便潜血阳性, 心肌酶增高。考虑诊断:肺炎, 营养不良, 电解质紊乱, 酸碱失衡, 皮肤感染, 心肌梗死、心力衰竭不排除。

肺部感染是主要病变,为启动因素,诱发老年多脏器衰竭;根据 X 胸片:右上肺大片状密度增高影,不排除肺脓肿;患者有呼吸困难,长期卧床,不排除肺梗死;临床上行肺核素扫描,纤维支气管镜辅助检查。死亡原因:肺炎引起老年多脏器衰竭。

殷建医师:诊断:① 肺部感染,不排除肺肿瘤。② 呼吸衰竭,不排除肺水肿。③ 消化道出血、急性胃粘膜病变,肿瘤不排除。④ 营养不良,低蛋白血症。⑤ 急性肾功能不全,尿路感染。⑥ 心脏功能不全。心肌酶增高,考虑为心功能不全、全身衰竭、休克状态所致,不支持心肌梗死。死亡原因:肺部感染。患者超高龄,全身状况差,营养状况差,老年多脏器功能减退,在此基础上合并肺部感染,导致死亡。

沈东医师:高龄为主要特点,机体反应能力极差。诊断心肌梗死从心电图、临床特征不支持;心肌酶升高,可能继发于重症感染、休克状态、其他脏器的损伤;心力衰竭诊断明确。心内科讨论意见,诊断:老年多脏器功能不全综合征。表现为在老年多脏器功能减退的基础上,感染、创伤等诱发因素导致多脏器功能衰竭死亡。96 岁高龄,临床治疗难于奏效。老年人多系统器官功能衰竭(multiple system organ failure in the elderly, MSOFE):老年人在器官老化和患有多种慢性疾患的基础上,由严重感染、脓毒症、创伤、心律失常、心肌梗死及药物毒性作用等诱因激发,在发病 24h 后出现 ≥ 2 个器官或系统同时或序贯衰竭的临床综合征。老年多器官衰竭的诱因:感染 94.55%,肺部感染 72.73%,晚期肿瘤转移 14.55%,心律失常 7.28%,药物使用不当 5.45%,手术或创伤 1.82%,急性心肌梗死 1.82%。诊断 MSOFE 的依据:全身性脏器结构功能老化衰退,患有多种长期慢性疾病,肺、心、消化道等脏器功能衰竭。

陆江阳主任报告病理诊断:肺:右肺上叶尖、后段周围型低分化腺鳞癌,伴化脓性液化坏死,肿瘤及脓肿坏死病灶大小为 $5\text{cm} \times 4\text{cm} \times 3\text{cm}$,肺门淋巴结反应性增生(0/7)。右肺急性肺脓肿。右上胸壁急

性纤维素性化脓性胸膜炎,胸腔积液。双侧肺泡水肿伴透明膜形成。肺间质水肿,重度淤血。局部肺间质与肺泡隔纤维化,局灶性肺萎陷。慢性支气管炎。肺间质纤维化。老年性肺气肿。心脏:左右心室壁脂肪浸润,心肌纤维脂褐素沉积;二尖瓣与主动脉瓣瓣叶增厚变硬、钙化。心室腔扩张,心肌纤维点灶状变性坏死。肝脏:肝细胞脂肪变性及点灶状坏死。肾脏:肾小管上皮水肿、颗粒变性及空泡变性,肾间质水肿伴慢性炎细胞浸润。胃肠道:胃肠道淤血、出血,小肠绒毛大部变性溶解。脑:脑水肿,多发性陈旧性腔隙性脑软化。

死亡原因:肺部恶性肿瘤病灶引发急性肺脓肿和纤维素性化脓性胸膜炎。炎性病灶迁延不愈,大量炎性介质持续释放并扩散至全身,导致肺、心、肾、肝、脑、免疫器官及胃肠道等主要脏器系统严重损伤。在老龄老人器官结构和功能严重衰退的生理基础与多种慢性疾患及恶性肿瘤的病理基础上,患者各脏器、系统最终失去代偿能力,发展成为老年 MSOFE 死亡。

李平生医师:MSOFE 是老年人在器官老化和患有多种慢性疾病基础上,由某种诱因激发,尤其是肺部感染、心、肾、脑等内科疾病,在短时间内出现 ≥ 2 器官序贯或同时衰竭。MSOFE 与 MODS(多器官功能不全综合征, multiple organ dysfunction syndrome)不同。后者发病前大多器官功能良好,休克和感染是其主要病因,大都经历了严重的应激反应或伴有全身炎症反应综合征(SIRS)或免疫功能低下,衰竭的器官往往不是原发因素直接损伤的器官;MODS 的功能障碍与病理损害在程度上往往不一致,病理变化也缺乏特异性,主要发现为广泛的炎症反应,如炎细胞浸润、组织水肿等,而老年慢性器官衰竭时,以组织细胞的坏死、增生为主,伴器官的萎缩和纤维化;MODS 除非到终末期,器官功能障碍和病理改变一般是可以逆转的。

(304 医院彭朝津,李平生整理)

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