

A 27-year-old African woman with acute febrile illness

Mulher africana de 27 anos com doença febril aguda

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Abstract

We report the case of a 27-year-old African woman who searched for medical attention because of high fever, headache, dizziness, arthralgia, nausea, abdominal pain and vomiting, followed by severe pulmonary disorder and arterial hypotension responsive to volume expansion. Initial laboratory determinations revealed leukopenia, high rate of band neutrophils, low platelets, anemia, high erythrocyte sedimentation rate and C-reactive protein, and elevated liver enzymes. Radiographic and tomographic studies showed bilateral pulmonary infiltrates and pleural effusion. The patient reported antecedent of travels to Africa as well as to Brazilian Amazon region, and the clinical manifestations began one week after she underwent an elective gynecologic surgery. Diverse schedules of antimicrobials had to be employed, and the infection was finally controlled. Our aim is to comment differential diagnosis of tropical zoonosis and postoperative infection.

Keywords: Female genital mutilation, Hantavirus pulmonary syndrome, infection

Resumo

Apresentamos o caso de uma mulher africana de 27 anos etários que procurou atendimento médico em virtude de febre alta, cefaleia, tonturas, artralgias, náuseas, dor abdominal e vômitos, seguidos de alteração pulmonar grave e hipotensão arterial com resposta à expansão de volume. Os exames iniciais de laboratório revelaram leucopenia, elevada taxa de neutrófilos em bastão, plaquetopenia, anemia, velocidade de sedimentação das hemácias e proteína C reativa elevadas, e elevação de enzimas hepáticas. Estudos radiográficos e tomográficos mostraram infiltrados pulmonares bilaterais e derrame pleural. A paciente relatou antecedente de viagens à África, além da região amazônica do Brasil; e as manifestações clínicas iniciaram uma semana depois de se submeter a uma cirurgia ginecológica eletiva. Diversos cursos de antimicrobianos foram utilizados e a infecção finalmente foi controlada. Nosso objetivo é comentar o diagnóstico diferencial de zoonoses tropicais com a infecção pós-operatória.

Palavras chave: Mutilação genital feminina, síndrome pulmonar por hantavírus, infecção.

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Introduction

Female genital mutilation (FGM) is a procedure involving partial or total removal of the external female genitalia, or injuries to the female genital organs for nonmedical reasons.¹⁻⁴ The prevalence of FMG in 29 African countries is up to 98%, despite decades of campaigning to eradicate;¹ as it is often performed without aseptic conditions, infections and sepsis occur.³

Typical features of Hantavirus pulmonary syndrome include abdominal complaints followed by severe lung disturbances and bilateral pleural effusion, and high rate of band neutrophils.⁵⁻⁸ Infections by Hantavirus have been found in young people living or travelling in South America, and the differential diagnosis with other febrile illnesses may be a clinical challenging task.⁵⁻⁸

Anicteric leptospirosis has been described in Brasilia-DF periphery, and can occur with predominant pulmonary disorders, mimicking classical features of Hantavirus infections.^{5,9,10} Malaria, Hantavirus infection, leptospirosis and dengue fever also occur in Amazon region.⁵⁻¹⁰

The authors present the case study of severe acute pulmonary infection, which affected an African young housewife with antecedent of travels to Sudan and to the Brazilian Amazon region. It is remarkable that she had undergone a gynecological

surgery one week before admission, but the purpose is to discuss the possibility of eventual diagnostic pitfall related to co-infections.

Case Report

A 27 year-old African woman was admitted on August 26th 2015 because of fever up to 39°C during four days, which started one week after she underwent a gynecological surgery. Two days later, she presented with headache, dizziness, arthralgia, nausea, abdominal pain, and dysuria. She denied chronic degenerative diseases, as well as contact with animals, warehouse, silos, coal or firewood. Of notice, she traveled to Sudan in November 2014, returning to Brazil in January; more recently she also visited the city of Manaus, Amazonas. Physical examination revealed good general condition without cardio-respiratory changes; abdominal pain elicited by superficial palpation of epigastrium, left iliac fossa and hypogastrium; and absence of the signals of Murphy, Blumberg, Kernig and Lasègue, and lack of neck stiffness. She underwent ciprofloxacin and intravenous hydration, but evolved with dry cough, tachypnea, low oxygen saturation (78%) and arterial hypotension (90 x 60 mmHg) responsive to volume. Although afebrile, she was in bad general condition, with discrete pulmonary basal crackles, respiratory rate of 40 rpm,

96% of blood saturation (FiO₂ 50%), and heart rate of 87 bpm. Chest radiography and computed tomography (CT) without contrast (Figure 1A and 1B) were unremarkable on admission. Nevertheless, after D5 both the radiographic controls (Figure 2) and images of CT (Figure 1C and 1D) revealed diffuse ground-glass opacities, predominantly on superior lobes associated with moderate pleural effusion, bilaterally. The echocardiogram of the same date showed LV 48 x 31mm, LVEF 65%, without valvar dysfunction. She was transferred to Intensive Care Unit and utilized fentanyl, midazolam and noradrenalin, and started with mechanical ventilation. The following exams were negative: urine and blood cultures; search for plasmodium; serology for Hantavirus, leptospirosis, respiratory virus, legionellosis, syphilis, viral hepatitis, HIV 1 and HIV 2, cytomegalovirus, toxoplasma, and dengue. Investigation for auto-immune conditions was also performed, including FAN, P-ANCA and C-ANCA, C3, C4, CH50 (CH100) and the respective results were all negative. The antibiotic schedule was further changed by cefepime, levofloxacin, oseltamivir,

fluconazole, and sulfamethoxazole/trimethoprim.

On D8, the antimicrobials were again changed by meropenem, vancomycin, mycafungin, and sulfamethoxazole/trimethoprim in double dosage. Levofloxacin and oseltamivir were maintained because of leucocyte rising and lung function worsening. Samples from pleural drainage were evaluated by biochemistry, cytology, and adenosine deaminase tests, which showed a transudate. Her blood laboratory determinations of routine, with respective controls, are showed (Table 1). The patient had respiratory support and was in use of noradrenalin until D13, but the chest radiography of control revealed significant improvement of the pulmonary changes. Then, she was transferred to Internal Medicine ward on D15, and had progressive improvement. Asymptomatic and hemodynamically stable after D18, her blood oxygen saturation was 97-99%. On D20, the CT images of thorax confirmed her successful clinical outcome (Figure 1E and 1F), and her hospital discharge to outpatient follow-up occurred with normal clinical parameters.

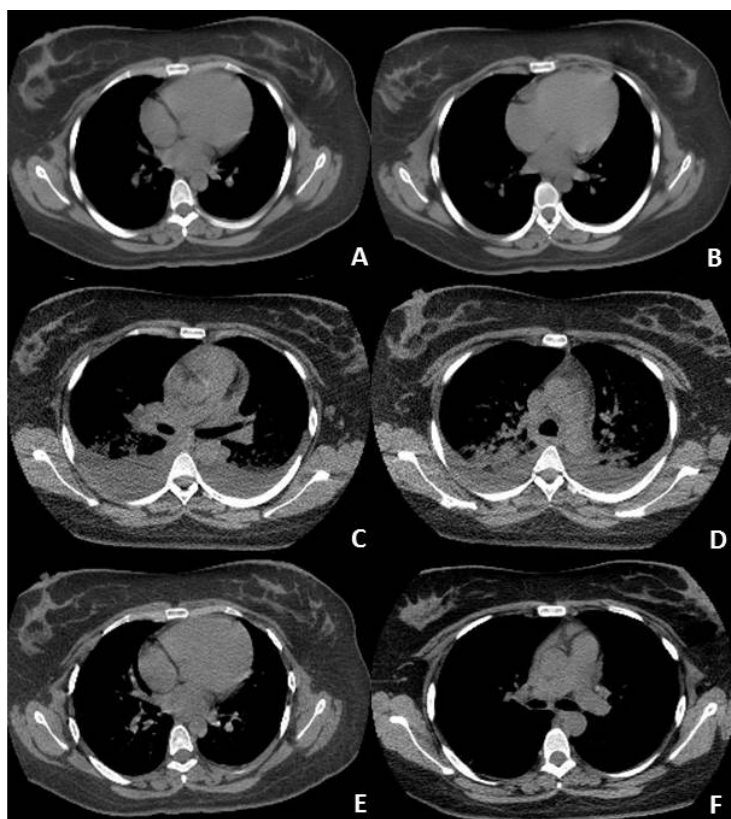


Figure 1 (Computed tomography). A and B: Normal aspect of the thorax on admission; C and D: Bilateral and diffuse areas of ground-glass opacity and consolidations, interlobular septal thickening, bilateral pleural effusions, normal vessels and absence of lymph node enlargement; E: Minimum left pleural effusion; and F: Discrete residual image of atelectasis on the right lung.

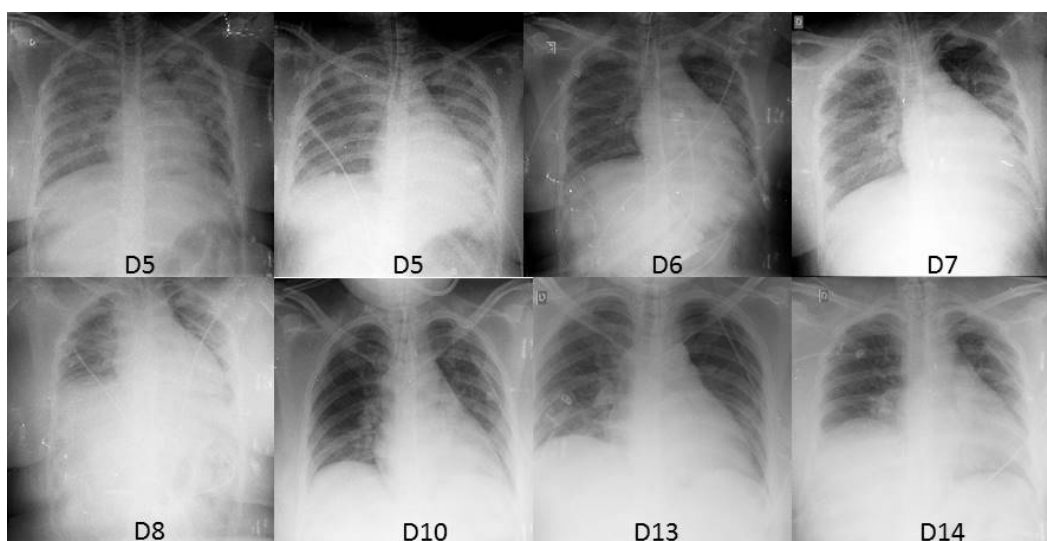


Figure 2 (Chest radiography). Evolution of pulmonary changes between D5 and D14, showing gradually progressive improvement with Intensive Care and clinical managements.

Table 1. Laboratory data of a 27-year-old woman with severe acute pulmonary disorder

Parameters (normal ranges)	D1	D3	D5	D9	D13	D18	D20
Hemoglobin (13.5-18.0 g/dL)	14.5	12.7	12.9	10.0	9.9	11.3	11.6
Hematocrit (42-52%)	43.7	38.8	39.0	30.8	30.3	35.2	35.0
Leukocytes (4-11 x 10 ⁹ /L)	2.3	2.7	5.6	13.2	10.0	5.1	6.7
Neutrophils (40-70%)	63	57	52	70	75	51	69
Bands (0-3%)	10	25	15	3	2	3	4
Platelets (140-450 x 10 ⁹ /L)	141	93	126	281	294	271	247
ESR (< 15 mm/h)	50	10	34	-	-	62	58
C-RP (0.5-0.9 mg/dL)	11.8	14.8	19.1	-	0.5	0.7	1.1
Sodium (135-145 mmol/L)	135	138	141	142	136	134	137
Potassium (3.5-5.2 mmol/L)	3.7	3.1	3.1	3.4	4.1	4.2	4.2
AST (< 32 IU/dL)	44.7	142.3	65.6	16.5	23.1	21	-
ALT (< 33 IU/dL)	49.6	125.7	102	40.5	41	44.5	-
DHL (240-480 IU/L)	280	548	491	352.7	-	-	-
GGT (5-36 IU/L)	52	339	279	187	71	-	-
Urea (10-50 mg/dL)	14.5	12.1	10.6	20.9	28.6	16.3	40.5
Creatinine (0.6-1.3 mg/dL)	0.9	0.6	0.6	0.6	0.6	0.7	0.6
Procalcitonin (< 0.5 ng/mL)	-	0.11	0.11	0.06	0.05	0.07	0.06

D1: August 26th 2015; D20: Discharge; ESR: Erythrocyte sedimentation rate; C-RP: C-reactive protein. AST: Aspartate transaminase; ALT: Alanine transaminase; LDH: Lactate dehydrogenase; GGT: Gamma glutamyl transferase; Abnormal data in bold.

Discussion

The African woman herein described initiated an acute febrile illness in the postoperative period of FGM. In addition, she had travelled to her homeland and visited the Brazilian Amazon. Her main symptoms were high fever, headache, dizziness, arthralgia, nausea, abdominal pain and vomiting, followed pulmonary disturbances and arterial

hypotension, requiring Intensive Care. Remarkable laboratory findings included leukopenia, high rate of band neutrophils, low platelets, anemia, high erythrocyte sedimentation rate and C-reactive protein, and elevated liver enzymes. Moreover, studies of thoracic images revealed bilateral pulmonary infiltrates and pleural effusion.

One estimates that 130,000 women, mainly African and Asian, have undergone FGM, which sometimes is done without anesthesia or aseptic conditions, and antibiotics are not used.^{3,4} Evidences of this procedure were confirmed in Egyptian mummies since two centuries BC,² and it was used to control conditions as epilepsy, hysteria and masturbation in the 19th century, but the United Nations General Assembly approved a resolution about its elimination on 2012.³ Classical early consequences of FGM include intense pain, excessive bleeding, psychological trauma, urine retention, genital ulcers, tetanus, bacterial infection, sepsis, shock, and death.^{3,4} The pathogens described by Iavazzo et al. in infections related to FGM were *Clostridium tetani*, *Chlamydia trachomatis*, *Neisseria gonorrhoeae*, *Treponema pallidum*, *Candida albicans*, *Trichomonas vaginalis*, HIV, HSV-2, *Pseudomonas pyocyanea*, and *Staphylococcus aureus*.²

The patient lives in Brasília, where zoonoses have been reported,⁵⁻¹⁰ and had relatively recent contact with environments where arthropod borne diseases occur. Therefore, postoperative infection and eventual co-infection by Hantavirus pulmonary syndrome, leptospirosis, dengue, or malaria was the initial concern.⁵⁻¹⁰ Other concern was about the lack of etiologic agent identification, despite of the microbiological

and serological tests. At least in part, the diversity of antimicrobials utilized could have hampered the growing of pathogens in cultures of blood, sputum and urine; and secondary infection to recent FGM was the most probable diagnosis.^{3,4}

In conclusion, educational campaigns have increased the knowledge of involved people about health risks of FGM, but effective reduction of prevalence is uncertain.¹ A growing number of women with FGM are living in western countries. Thence, gynecologists, nurses and midwives should better know about FGM, which has serious religious and cultural involvements.⁴ In tropical areas, zoonoses should be included in differential diagnosis of secondary infections related to FGM.

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