G19 Sudden Unexpected Death in a Pregnant Young Woman at 23w+6 Hospitalized for Kidney Infection

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After attending this presentation, attendees will learn about an autopsy regarding a case of sudden, unexpected death in a hospitalized pregnant young woman, using a complete forensic approach: autopsy, histological and microbiological examinations, and study of medical documentation. In particular, histological findings are the most important elements to find causes of death.

This presentation will impact the forensic science community by showing that myocarditis could be a cause of sudden death, even in cases of a negative test during a hospital admission for therapy of a renal infection in a pregnant woman at 23 weeks, 6 days.

Myocarditis is a histological diagnosis characterized by mixed inflammatory cells within the myocardium. Clinical presentation includes a wide spectrum of non-specific signs and symptoms from the absence of any pathological findings to aspecific signs or symptoms like fever, shortness of breath, chills, cough that can only indicate a pathological status to more specific elements like chest pain and arhythmia. Diagnosis is possible only with an echocardiogram study (low ejection fraction and decreased left ventricular systolic function) and a endomyocardial biopsy. When successfully diagnosed (a very low percentage of cases), myocarditits can be treated with anti-inflammatory drugs (like Non-Steroidal Anti-Inflammatory Drugs); beta-blockers, ACE inhibitors (angiotensin converting enzyme inhibitors), and diuretics to support heart failure; corticosteroid to reduce the inflammatory process that is involving the myocardium. In some cases, a temporary pacemaker is indicated to prevent fatal arhytmia. Prognosis is strictly linked to ventricular function recovery.

A case is reported of a 35-year-old pregnant woman at 23 weeks, 6 days who was admitted for a renal infection two days before death. The woman's clinical history was negative for any chronic diseases but positive for renal diseases cystitis and pyelonephritis (urine analysis of four months and a month before were positive for *Escherichia Coli*), which were treated with antibiotic therapy. Gynecological anamnesis: five years prior she had a pregnancy with cesarean birth and one year later she had a second pregnancy with voluntary termination.

Suffering from pain at the left renal loggia with fever (39.6°C), she went to the hospital. At admission, the objective exam showed a fever (body temperature 38.4°C) with normal cardiovascular parameters (arterial pressure 110/70mmHg, heart frequency 82bpm, rhythmic); at echography, the pelvis and ureter of left kidney were expanded; the urine analysis showed the presence of leucocytes and erythrocytes. There were no abnormalities of pregnancy parameters. Antibiotic therapy (Zinocef (cefuroxime) 1.5g 2/die e.v.) was administered to the woman. The following day the fever was reduced (maximum body temperature 37.4°C) and cardiovascular parameters were regular. The second day after admission, signs and symptoms showed a progressive improvement: apyrexia, reduced level of PCR (from 415mg/l to 212mg/l), normal lymphocyte count. In the afternoon of the same day, the young woman was found unconscious on the floor of the bathroom. The resuscitation was useless and death was confirmed.

External examination of the body was completely negative. Autopsy revealed bilateral subpleural effusions (lung congestion). The heart was normal in size and shape, and the myocardium didn't show abnormal findings except for a thickening of mitral valve. The placenta exam and fetus autopsy didn't reveal pathological findings.

Histological examination showed lymphocytes infiltration of the myocardium, especially in the right ventricle and some outbreaks of necrosis. Other lymphocytes infiltrations were found in the lungs and placenta. The cause of death was attributed to malignant arhytmia by viral myocarditis.

Sudden Death, Myocarditis, Pregnancy

