LETTER / Genito-urinary

Ovarian venous thrombosis during septicemia due to Fusobacterium necrophorum

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KEYWORDS

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Initially described in 1936 by André Lemierre, post-pharyngitis septicemia due to Fusobacterium necrophorum can cause thrombosis of the internal jugular vein and pulmonary abscesses. Other commensal anaerobic microorganisms of the oral and gastrointestinal flora can also induce septic venous thrombosis. Case reports have described thromboses of the pelvis, inferior vena cava, mesenteric-portal network, and satellites of local and regional foci of infection, which some consider these to be variants of Lemierre’s syndrome. Imaging to explore the cause of unexplained sepsis must first attempt to identify the focus of infection, which is not always an easy task. Analysis of vein permeability is recommended, especially when the blood culture shows septicemia due to an anaerobic microorganism.

Case report

This 47-year-old woman had no notable history except her current-smoker status (30 pack-years). She was hospitalized on an emergency basis for acute respiratory insufficiency, with a fever of 38 °C. The initial work-up showed multiple nodular lesions on the chest radiograph, a marked inflammatory syndrome with elevated CRP of 368 mg/L (normal < 5 mg/L) and thrombocytopenia of 27,000/mm³ (normal: 150,000–500,000/mm³). The emergency thoracic CT showed multiple nodules and cavitary lesions in the lungs (Fig. 1) and a recent thrombosis extending from the left ovarian vein to the ipsilateral renal vein (Fig. 2). An intrauterine device (IUD) was observed, but neither uterine retention nor pyosalpinx (Fig. 3). She was admitted to intensive care; the onset of acute respiratory distress syndrome required intubation with controlled ventilation. The initial questioning of the patient and her family indicated “gastroenteritis” and leukorrhea. The blood cultures from samples taken in the ER were positive for F. necrophorum. A variant of Lemierre syndrome, secondary to IUD-related endometritis, was accordingly diagnosed. Antibiotic
therapy combining ofloxacin and amoxicillin/clavulanic acid, together with further intensive care, led to a favorable outcome over the next three weeks. Bacteriological samples taken from the IUD, after its removal, showed only non-specific evidence of Candida krusei and tropicalis.

Discussion

Venous thrombosis can be presumed to be of septic origin when the blood work-up shows septicemia from an anaerobic microorganism. The description initially published by Lemierre in 1936 [1] concerned septicemia due to F. necrophorum from an oropharyngeal portal. Antibiotic treatment has resulted in a decrease in the incidence of this syndrome over the past 50 years, but it is said to have increased recently because of the frequent prescription of non-steroidal anti-inflammatory drugs without appropriate antibiotic therapy [2,3].

We have since learned that other bacteria of the same family, such as F. nucleatum and various unspecified species (spp) of Streptococcus, Bacteroides, and Peptostreptococcus, can cause the same syndrome [4]. In 90% of cases, the infection involves a single species. Other cases of venous thrombosis of the portal system and of veins of the pelvis, inferior vena cava and cerebral sinuses have been described and associated with variants of Lemierre syndrome [3,5–8]. Bacteria of the genus Fusobacterium and Bacteroides belong to the Bacteroidaceae family. They are all obligate anaerobic Gram-negative bacilli, commensal in the oral cavity, gastrointestinal system; and the female genital tract. This distribution allows us to understand the analogy between Lemierre syndrome, and this variant starting in the reproductive system. The progression from the genital tract to the blood involves a still controversial mechanism of bacterial translocation through the mucosa.

Imaging examinations in cases of septicemia due to anaerobic microorganisms have several objectives.

The first is to identify the focus of infection if it has not been clinically diagnosed. Endometritis was not demonstrated here. Because of the severity of the initial clinical picture, including acute respiratory distress syndrome, uterine ultrasound was performed only secondarily. The bacteriological samples from the IUD did not provide helpful information. The leukorrhea and the presence of an unmonitored IUD were considered sufficient evidence for a diagnosis of endometritis.

The second objective is essential, as it determines therapeutic management. Venous thrombosis must be sought. No imaging sign can distinguish septic from non-septic venous thrombosis. The last objective is to look for distant foci of infection. Depending on whether the thrombophlebitis affects the portal network or the systemic circulation, abscesses might be located in the liver or the lungs. We might also observe arthritis [9] or infection in other rarer secondary sites: endocarditis, meningoitis, or a cerebral or renal abscess [10]. Thoracic CT here showed parenchymal nodules with fuzzy contours, sometimes excavated, and

Figure 1. Computed tomography of the thorax, abdomen, and pelvis after injection of contrast product. Frontal reconstruction. Thrombosis extending from the left ovarian vein (arrow).

Figure 2. Computed tomography of the thorax. Transverse slice. Peripheral pulmonary nodules with fuzzy contours. Some are partially excavated (arrow).

Figure 3. Computed tomography of the pelvis after injection of contrast product. Transverse slice. Intrauterine device en place. No uterine retention or pyosalpinx within the limits of the examination. Thrombosis of the left ovarian vein (arrow).
small areas of parenchymal compression along the outer edges.

The treatment of septic venous thrombosis is based above all on combined antibiotic therapy for 2 to 6 weeks [2,10]. The value of anticoagulation treatment is controversial. Some recommend it as a first-line treatment or if the thrombosis extends despite antibiotic therapy. The recommended duration is for 3 months.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

References