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Case Report

A rare case of fulminant Toxic Shock Syndrome Associated with clostridium sordellii septic abortion

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Abstract :
Endometritis and toxic shock syndrome associated with Clostridium sordellii havepreviously been reported after childbirth and, in one case, after medical abortion. Clinical findings included tachycardia, hypotension, edema, hemoconcentration, profound leukocytosis, and absence of fever. We describe a young woman who developed Clostridium sordellii toxicshock syndrome after having had an abortion surgically evacuated five days before admission to our hospital. Although the patient was aggressively treated, death occurred <3 days after admission. It is hoped that very early recognition of this disease will decrease the mortality associated with this rarely reported ailment.

Introduction

Clostridium sordellii is a gram-positive anaerobic bacillus that has been reported as a cause of infection in the female genital tract and fatal toxicshock syndrome. Of 10 cases identified in the literature, 8 occurred after delivery of live-born infants, 1 occurred after a medical abortion, and 1 was not associated with pregnancy. (1-4)

We report one additional deaths due to C. sordellii toxic shock syndrome that occurred among previously healthy women after abortion.

Case report

In march2012, a 35-year-old, G5P2+3, previously healthy woman was admitted to emergency unit of our department complaining ofsevere abdominal pain, vomiting, diarrhea , fever and foul-smelling vaginal discharge. Five days before admission, the patient hada dilatation and curettage in a district hospital for a missed abortion of ten weeks` gestation that was induced by misoprostol. All her children were delivered by normal vaginal delivery.

On examination, the patient was disoriented, pale and toxic. Vital signs were unstable with ABP 90/40 mmHg, heart rate 120 beats/min and temperature 39°C. Her abdomen was distended, and vaginal examinationrevealed an enlarged tender uterus with offensive vaginal discharge. Laboratory investigationsrevealed a high white-cell count of 34,800 cells per microliter, hemoglobin level of 7gm/dl, and platelet count of 100,000 cells per microliter platelets and a hematocrit of 40 percent. Liver function and renal function tests were normal.

Abdominal ultrasound demonstrated an enlarged AVF uterus with a heterogeneous intrauterine mass about 4cm in diameter highly suspicious of remnants of conception.

So, the decision was made to correct the general condition of the patient then evacuate the uterine cavity under

umbrella of antibiotics. The patient was treated in the intensive care unit with high doses of penicillin, clindamycin, andciprofloxacin, as well as with intravenously administered fluid and blood transfusion. Approximately 24 hours after the patient was admitted to the intensive care unit, uterine dilatation and blunt curettage was done. (Figure1) Tissues were biopsied for histological diagnoses and culture and sensitivity for antibiotics. Numerous, large gram-positive bacilli that were suggestive of Clostridium species were seen on a Gram stain of the specimen.

The patient`s general condition deteriorate over the next 24 hours where drowsiness and severe vaginal bleeding occurred. Vital signs revealed heart rate 140 /min, ABP 70/30 mmHg. Laboratory investigations revealed HB 6 gm. /dl,a hematocrit of 45 percent,white-cell count of 50,000 cells per microliter,platelet cell count of 60,000 cells per microliter and INR 3 with continuous blood, fluid and antibiotic therapy. SGOT 500 U/L, SGPT 400 U/L, BUN 50 mg/dl , serum creatinine 2 and albumin 1.5 gm/dl.

An abdominal hysterectomy with bilateral salpingoophorectomy was performed immediately. (Figure 2)Soonafter surgery, intractable shock with unrecordedABP, weak pulse of 150 beat / min, temp 35°C, anuria,coma and disseminated intravascular coagulation developed.Laboratory investigations revealed Hb 7 gm/dl, white cell count of 50,000 cells per microliter, platelet cell count of 40,000 cells per microliter, INR 7, SGOT 4000U/L, SGPT 5000 U/L,BUN 60 mg/dl, serum creatinine 3 mg/dl and serum albumin 0.8 gm/dl.Death eventually followed in less than three days after admission.

Microscopy of the hysterectomy specimen revealed massive coagulation necrosis of the uterine wall,the fallopian tubes, and the ovaries, with leukocytoclastic inflammation of the adjacent viabletissue. Bacterial cultures of samples obtained from the uterus yielded Clostridiumsordellii, Coagulable necrosis of the decidua and the superficial myometrium associated with hemorrhage and acute inflammation of the adjacent viable tissue. Evidence of C. sordellii infection was established with the use of PCR assays performed on fixed uterine tissue.

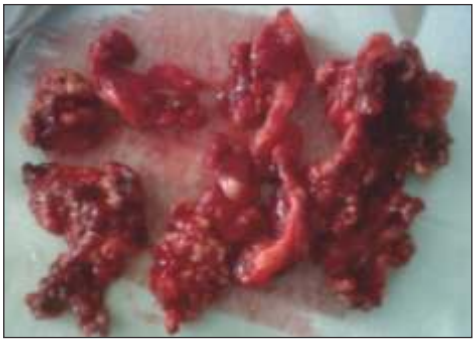

Figure 1 : showing the infected remanats of infection

Figure 2 : showing hysterectomy specimen

Discussion

C. sordellii, a pathogen that is infrequently found in humans, has a broad spectrum of clinicalpresentations. Among them, a fulminant toxic shock syndrome characterized by marked leukemoidreaction (WBC >80,000) and hemoconcentration (Hct >50%) and caused by a massive capillary leak has been reported almostexclusively in association with infections of the uterus or the perineum after either infectedepisiotomy (in 2 patients) or postpartum endometritis (in 4 patients). In 1 patient, thesyndrome manifested as spontaneous endometritis (1-4).

Highly active hemorrhagic and lethal toxins of C. sordellii play a central role in the pathogenesisof the syndrome by targeting the Ras guanosine triphosphate binding proteins and glycosylatingthem (5,6).

The rate of vaginal colonization with Clostridium species in the period after abortion occurs hasbeen reported to be as high as 29%, whereas these bacteria have been isolated in the vaginalsecretions of 5% 10% of nonpregnant women

(7). Opening of the cervix during labor or abortion,which permits the passage of vaginal pathogens, appears to be the critical event that leads toinfection of the endometrium.

To improve diagnosis and therapy, clinicians should be aware of the distinctive features of this potentially fatal entity, including tachycardia, hypotension, edema, hemoconcentration, profound leukocytosis, and absence of fever. Evidence of C. sordellii infection was established with the use of anti–clostridium speci`es immunohistochemical assay and both organism-specific and broad-range PCR assays performed on fixed uterine tissue.

There are limited data regarding the optimal therapy for C. sordellii. As with other severe histotoxic clostridial infections, aggressive surgical wound débridement, removal of infected organs (e.g., by means of hysterectomy), and antibacterial agents with good anaerobic activity are logical first steps to decrease the bacterial load and minimize further production of toxins. In vitro susceptibility testing on 24 C. sordellii strains showed low minimal inhibitory concentrations for penicillin, ampicillin, erythromycin, rifampin, tetracycline, cefoxitin, clindamycin, and metronidazole; antibiotics that interfere with bacterial protein synthesis (such as clindamycin) may have additional benefit. However, débridement, surgery, and antibacterial therapy will not mitigate the effects of preformed toxin. (8,9)

Treatment with antitoxinscould, in principle, be clinically useful. Antitoxin therapy directed against the toxins of clostridialspecies causing gas gangrene was used intensively from 1918 to the end of World War II, but it waslater proven to be ineffective. C. sordellii antitoxins are commercially available for in vitroneutralization of Clostridium difficile toxin B in cytotoxin cell assays, and they probably would bepresent in human immunoglobulins, albeit not in a high concentration. Although potentially useful,they have never been tested for clinical efficacy (10). Experience with anticlostridial toxins islimited; however, other than for use in the treatment of tetanus and botulism, anticlostridial toxinsprobably could be useful only for prevention of the syndrome in subjects exposed to C. sordellii or,at best, could be useful as treatment if administered very early in the infectious process. Obviously,animal studies are needed before a compassionate protocol could be approved for such treatment.

This syndrome is very rare and, to date has claimed the lives of all individuals who have beenaffected by it. We believe that the association of a capillary leak with hemoconcentration and amarked leukemoid reaction in a patient during the postpartum or postabortion period is verycharacteristic and should hasten early recognition of this disease before development of irreversibleshock. Given the present state of knowledge regarding this disease, we can only hopethat very early recognition of this disease, along with an aggressive surgical approach andappropriate antimicrobial therapy and resuscitation techniques, will decrease the mortality associatedwith an ailment that occurs mostly among young, otherwise healthy women.

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