Septic Abortion with Initial Presentation Mimicking Meningitis

CHEE-SEONG PHAN¹, CHAO-HSIN WU¹, YING-HOCK TENG¹,²

Septic abortion is a common cause of maternal death that demonstrates many varied clinical conditions. It can be mistaken for septic shock due to urinary tract infection or meningitis due to respiratory tract infection, with neglect of other possible gynecological causes. Herein, we reported a 35-year-old pregnant woman with unclear consciousness, high fever, and neck stiffness; her preliminary diagnosis was meningitis. We consulted with gynecologist and then found out her major etiology was septic abortion. This patient was discharged without any morbidity. We suggest that gynecological causes should be included in the differential diagnosis in young females with fever and shock.

Key words: septic abortion, septic shock, meningitis

Introduction

Septic abortion is a potentially fatal condition, with an estimated fatality rate of 0.4 to 0.6 per 100,000 spontaneous abortions(1). It is defined as any type of abortion that is accompanied by an ascending infection of the female pelvis. Infection occurs in about 1% to 2% of all spontaneous abortions, with the incidence increasing if the abortion has been induced by a nonsterilized instrument(1-2,5). Two major factors contribute to the development of sepsis, the presence of retained products of conception due to incomplete spontaneous or induced abortion and the introduction of infection into the uterus from septic procedures, which can spread beyond the pelvis causing septicemia(1).

Case Report

A 35 year-old woman had a dry cough for days. She had no travel history to other countries. Fever (40.2°C) with chills was noted and she went to another hospital where acute pyelonephritis was diagnosed and she was prescribed some medications. Because the chills persisted, she was sent to our emergency department (ED).

In the ED, a primary assessment revealed that she had a patent airway, was spontaneously breathing and was diaphoretic and warm to the touch. She was drowsy with a Glasgow Coma Score of 11. Her initial vital signs were respiratory rate 22 breaths per minute, oxygen saturation 98% on room air, heart rate 135 beats per minute (sinus tachycardia) with easily palpable radial pulses, blood pressure 91/35 mmHg and tympanic body temperature 38.8°C. Physical examination results revealed neck stiffness with rigidity, and chest auscultation revealed normal breath sounds. She had active bowel sounds and the abdomen was soft and warm to the touch. This patient was gradiva 2, para 2 and had two children. Her
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husband reported that her last menstrual period was 3 days previously. Laboratory data revealed the white blood count (WBC) was 1820/mL with a left shift, segments 31%, lymphocytes 51%, meta 2%, bands 1%, platelets 47,000/mL, prothrombin time 20.1 sec, activated partial thromboplastin time 69.7 sec, fibrinogen 139.9 mg/dl, and C-reactive protein 17.5 mg/dl. Urinalysis showed 3-5 red blood cells and 1-3 white blood cells and was negative for nitrite leukocyte esterase. An electrocardiogram showed diffuse ST depression. The result of brain computed tomography (CT) showed brain swelling. A lumbar puncture could not be obtained because of the patient's irritable status. Under the impression of septic shock with meningitis, she was admitted to intensive care unit (ICU) and treated with empiric antibiotics (eg, ceftriaxone and acyclovir).

On the following day, abdominal echography showed no liver or renal abscess. The Widal and Weil Felix tests were negative. *Escherichia coli* was found in her blood specimen. Cardiac echography showed no evidence of thrombus or vegetation formation. Abdominal CT was done because of right lower abdominal tenderness and showed a distended vagina with hyperdense material and ascites formation (as Fig. 1). A positive urine pregnancy test was noted and a gynecologist was consulted. A pelvic ultrasound revealed a thickened endometrium with suspected retained products of conception. On speculum examination, accumulated dark blood clots with a foul odor were seen in the vagina and the cervical os was not visualized. She then had a dilatation and curettage of the uterus with suspected septic abortion, and conceptus with pus was noted. The pathologist confirmed that the biopsy sections were endometrium with decidual change and chorionic villi.

She was transferred to the medical ward on the 7th day in the ICU with improvement in her general condition and septic status. She was discharged home without significant sequelae on the 14th day of hospitalization.

**Discussion**

Obstetrical sepsis is primarily the result
of pelvic infections due to choriomanionitis, endometritis, wound infections, septic abortion, or urinary tract infections\(^4\). Chorioamnionitis rates are strongly associated with preterm delivery and number of vaginal examinations\(^5\). Endometritis and wound infections are common complications of cesarean delivery and are probably underreported in most series because the diagnosis is frequently made as an outpatient following discharge\(^6\). Urinary tract infection is a common complication of pregnancy, occurring in as many as 15% of pregnant women. Etiologic agents for urinary tract infection in the pregnant patient mirror those in nonpregnant cohorts. The most common isolated bacteria are *Escherichia coli*; other organisms less commonly seen are *Enterobacter*, *Staphylococcus*, or *group B streptococcus*\(^7\).

Most spontaneous abortions are not septic. Septic abortion is, however, a common complication of illegally performed induced abortions\(^5\). Infrequently, septic abortion is related to foreign bodies (eg, intrauterine contraceptive devices, laminaria), invasive procedures (eg, amniocentesis, chorionic villus sampling), maternal bacteremia, or incomplete spontaneous or legally induced abortion.

Because endotoxins can be released from gram-negative bacilli, endotoxic shock may accompany septic abortion, particularly if it is caused by insertion of nonsterile agents into the uterine cavity. The most common organisms responsible for septic shock are aerobic gram-negative bacilli, principally *Escherichia coli*, *Klebsiella pneumoniae*, and *Proteus* species\(^8\). In our case, *Escherichia coli* was found to be the causative organism.

Physical examination findings typically included uterine tenderness, a foul or purulent cervical discharge and products of conception at the cervical os. In more severe infections the patient may experience hypotension or shock. Laboratory adjuncts for the diagnosis should include arterial blood gas, lactate level, a Gram stain of the cervix with culture of the endocervix, blood, and urine, and screening for disseminated intravascular coagulation. In addition to an elevated temperature and leukocytosis, lower abdominal tenderness, cervical motion tenderness and a foul uterine discharge are signs of septic abortion.

In our patient, the atypical physical examination findings included uterine tenderness and disturbed consciousness with neck stiffness that mimicked meningitis initially. The clinical picture of septic abortion demonstrates a wide range of symptoms and it may be underestimated. A gynecologist should be consulted in the differential diagnosis of young women with fever and shock.

Plain radiographic examination of the abdomen may be helpful by revealing free air or retained post-procedural foreign bodies. Pelvic ultrasound can show retained tissue and other fluid collections, and disruption of the myometrium by fluid and gas. Pelvic ultrasound may suggest surgical complications, including retained products of conception or retained surgical foreign bodies\(^2\). Computerized tomography is useful in evaluating for operative injury, abscess, or hematoma.

Treatment of septic abortion should focus on removal of any inciting agents (products of conception or foreign bodies) and is usually accomplished through dilatation and curettage of the uterine cavity. This procedure removes the source of the endotoxin. The physician should promptly administer parenteral broad spectrum antibiotics (eg, clindamycin and gentamycin with or without ampicillin; or ampicillin and gentamycin and metronidazole; or levofloxacin and metronidazole; or single agents such as ticarcillin clavulanate, piperacillin tazobactam, or imipenem). Intravenous antibiotics are administered until the patient has improved and been afebrile for 48 hours, and are then changed to the oral route to
complete a 10 to 14 day course\(^9\).

Laparotomy with possible hysterectomy should be performed if there is failure to respond to uterine evacuation and medical therapy, uterine perforation with necrotic myometrium or suspected bowel injury, pelvic and adnexal abscesses, or clostridial myometritis\(^1\).

Severe complications in septic abortion, include septicemia, septic shock, disseminated intravascular coagulation, and renal insufficiency\(^10\). Serious complications and death from septic abortion are preventable\(^11\). Physicians should be trained to recognize the signs and symptoms of abortion and sepsis, and to implement early therapy, including aggressive fluid resuscitation and appropriate empiric antibiotic therapy.

References

初期疑似腦膜炎之敗血性流產個案

潘志祥1 吳肇鑫1 陳永福1,2

敗血性流產是造成孕婦死亡的常見原因，臨床表現呈現多樣化。本文報告一名三十五歲的轉診個案，主要有意識不清、高燒、頸部僵硬等問題，初步診斷為疑似腦膜炎，但是經產科醫師診後，發現該名病婦的主要病因是敗血性流產。經驗不足的醫師容易將轉診個案診斷掉入先入為主的陷阱，以為泌尿道感染造成敗血性休克或者是呼吸道感染造成腦膜炎，因而忽略其他科別的問題。個案經治療後，存活且康復出院。我們建議年輕女性個案若出現發燒、休克等症狀，應將婦科問題列入鑑別診斷。

關鍵詞：敗血性流產，敗血性休克，腦膜炎

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1中山醫學大學附設醫院急診醫學部 2中山醫學大學醫學系
通訊及抽印本索取：潘志祥醫師 40201台中市南區建國北路一段110號 中山醫學大學附設醫院急診醫學部
電話：(04)24739595轉32110 傳真：(04)23248108
E-mail: cshy365@csh.org.tw