

Case Report

A Rare Case of Uterine Gas Gangrene with Septic Abortion

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OPEN ACCESS**Abstract**

Background: To report a rare case of fulminant uterine gas gangrene due to illegal abortion in modern era.

Case Presentation: We report a 20 year women having amenorrhea of one and half month presented with very sick condition but in normal sensorium due to sepsis. There was foul smell discharge from vagina and tender distended abdomen. Clinical picture was suggestive of severe septicemia. She had multiorgan dysfunction. She could not be saved despite our best effort. Investigation confirmed clostridium perfringens sepsis. In this case cause of septic abortion was not evident because patient and attendant's denied any kind of intervention.

Conclusion: Sometime history is not reliable and early aggressive management may help in survival of patient. Our patient was a case of illegal abortion and belongs to low socioeconomic status and uneducated. Illegal abortion increases morbidity and mortality so abortion services should be legalized and provided by safer hands to women according to their need and indication.

Keywords

- *Clostridium perfringens*
- Gas gangrene
- Septic abortion

ABBREVIATIONS

CP: Clostridium Perfringens; LMP: Last Menstrual Period; PCV: Packed Cell Volume; FFP: Fresh Frozen Plasma;

INTRODUCTION

Clostridium perfringens (CP), an anaerobic Gram-positive bacillus, is found among the normal human intestinal and vaginal flora in approximately 1 to 27% of healthy women so ascending infection from the vagina to uterus may occur [1,2]. It is also found in 10 to 27% of patient undergoing elective abortion [2]. Clostridium infection resulted from septic abortion, with a reported incidence between 0.5 and 1.0 % [3] it is often associated with caesarean sections and incomplete pregnancies. Injured and necrotic tissue in the uterus after delivery permits bacterial incubation and overgrowth of bacterial colonies [1]. Occasionally, CP infection can progress to gas gangrene, a form of tissue death, and may eventually lead to sepsis [3]. Most reported cases of intrauterine Clostridium infection resulted from septic abortion, with a reported incidence between 0.5 and 1.0% [2,3]. Infections due to CP show evidence of tissue necrosis, bacteremia, emphysematous cholecystitis, and gas gangrene, which is also known as clostridial myonecrosis. The involved skin is initially pale and edematous and will progress to a bronze or magenta color, followed by a blue-black color with the formation of bullae. The bullae contain a clear or hemorrhagic discharge, sometimes

with a "foul-sweet" odor. Pain and tenderness to palpation are usually disproportionate to the wound's appearance. In the case of uterine gas gangrene, onset is usually sudden with symptoms and signs consisting of fever, tachycardia, hypotension, renal failure, and jaundice. Radiography or other imaging may demonstrate gas in the uterine wall. Crepitus may be demonstrated on physical examination but may also be masked by significant edema. The urine often has a "port wine" color due to hemoglobinuria [3].

CASE PRESENTATION

Twenty years old primigravida was presented on 14 december 2013 at 6.30 pm with amenorrhoea of around one and half month, decreased urine output, pain lower abdomen and vaginal bleeding since one day. Patient and her relatives denied any kind of intervention at home or elsewhere. Exact date of LMP was not known. She was in very low condition so immediately put on high flow oxygen, nasopharyngeal airway was inserted. Normal saline bolus was given. Intravenous fluid with dopamine, dobutamine both dose of 10 ug/kg/min and higher antibiotic meropenam, metronidazole, aztreonam were started. Blood and urine sample were sent. Bedside glucose was low so 25% dextrose bolus was given. On examination she was conscious, oriented, agitated, frightened and her vitals were as follows Peripheral pulses were not palpable but central pulses felt poor, heart rate 180/min, blood pressure un-recordable, respiratory rate was 40/min and labored. Skin was cold and clammy. Air entry on both

side of chest was diminished and fine crepitations were present. Cardiovascular examination showed tachycardia but no murmur. Abdomen was distended. There was generalized rigidity and rebound tenderness. Her higher mental functions were normal, pupil bilaterally equal, round, regular, reacting to light, no cranial nerve palsy, tone, deep and superficial reflexes were normal. Vaginal examination showed bilateral labia edematous, bluish and crepitus on palpation, brownish offensive discharge present, and cervix was patulous, exact size of uterus could not be made out properly due to tenderness and distension, fullness felt in bilateral fornix and multiple small lacerations were presented in vaginal mucosa. Her UPT was positive. Due to possibility of septic abortion Injection antitetanus serum immunoglobulin and tetanus toxoid vaccine was given. One unit of PCV and FFP was started. Emergency X-ray chest showed fine infiltration in both lung field and x-ray abdomen was normal. CT abdomen and pelvis could not be performed due to long distance between our and main hospital where facility for CT scan was available and seriousness of patient. Urgent USG was done which revealed mild to moderate fluid with echogenic foci seen in peritoneal cavity suggestive of hemoperitoneum. Pelvic organs were not seen due to overlying gaseous shadows. Bilateral kidneys were echogenic, pancreas obscured. Provisional diagnosis was either ruptured ectopic pregnancy or septic abortion. Immediate blood and vaginal swab were sent for c/s & gram stain. Patient was immediately taken for exploratory laprotomy. On opening of peritoneal cavity frothy offensive brownish discharge found, uterus was enlarged, boggy & mottled purplish (Figure 1) seemed to be putrified and necrosed, crepitus elicited in between layers of uterus. On opening the uterus malodourous gas mixed with serosanguinous discharge came out (Figure 2) that was so offensive that OT was



Figure 2 Necrosed putrified uterus with gas bubble on cut edge.

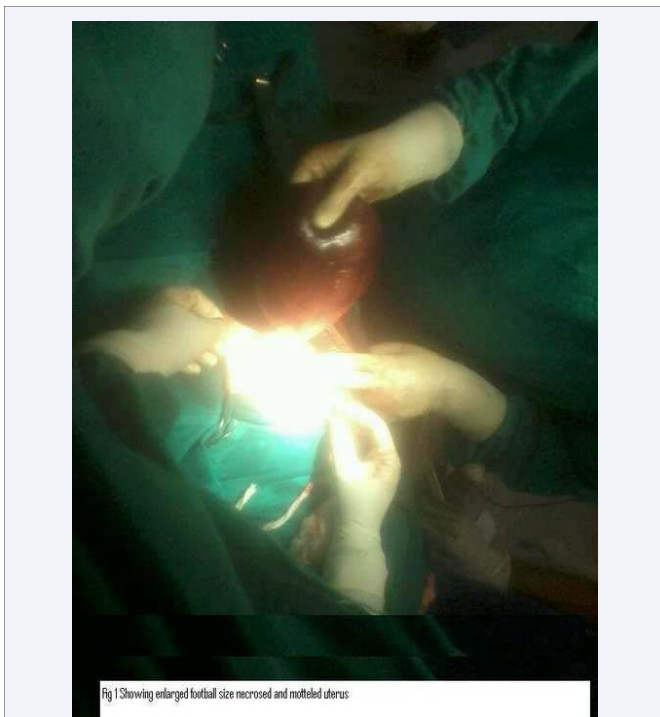


Figure 1 Showing enlarged football size necrosed and mottled uterus.

stinging with bad odour. Total abdominal hysterectomy with bilateral salpingo-oophorectomy was performed with informed consent. Peritoneal fluid and uterus were sent for culture and histopathological examination. Surgical time was 4 hour and volume of blood loss was 2000 mL. A drainage tube was placed in the cul-de-sac. During surgery, the systolic blood pressure fell to 60mm of Hg and it was difficult to maintain an appropriate blood pressure despite administration of intravenous fluid, ionotrops, milrinone, blood and fresh frozen plasma. Oligouria which was present at the time of admission progressed to anuria. After surgery patient was transferred to intensive care unit. She was kept on ventilatory support, vasopressor agent & blood transfusion. Blood investigations were as showed in (Table 1). Intravenous calcium gluconate and dextrose insulin infusion was given. Relatives of patient refused for peritoneal dialysis. Multiple units of blood and fresh frozen plasma were transfused due to ongoing hemolysis and refractory shock. Urine output even after 12hrs of surgery was only 75cc (of mahogany colour) and 350 cc serosanguinous blood mixed drainage through drainage tube. On next day morning there was blackening of tip of nose, toes and tip of fingers so at that time clinically provisional diagnosis of septic abortion with disseminated intravascular coagulation with multiorgan dysfunction syndrome was made. Even after proper surgical and medical management condition of the patient deteriorated and she expired on 15/12/13 at 7.30pm. Later on blood culture showed clostridium perfringens and streptococcus fecalis, both sensitive to clindamycin vancomycin meropenam doxycycline, metronidazole. Vaginal swab, peritoneal fluid and uterine scrapping swab showed on gram staining abundant large gram positive rods. Vaginal and peritoneal fluid culture sample also showed clostridium perfringens, streptococcus fecalis, enterococci, fusobacterium all

Table 1: Showing blood investigation of patient.

Hemoglobin	4gm/dl	AST/ALT	322/112 IU/L
Total leucocyte count	33000/uL	Serum total protein/Albumin	4.2/1.8 gm/dL
Differential count		serum calcium	6.3 mg/dL
Polymorphs Lymphocytes	80% 18%	PT /APTT	20/44 sec
C reactive protein	60 mg/dl	Serum Na/K/Cl	128/7.5/99 meq/L.
Peripheral blood film	microangiopathic hemolytic anemia	D-dimer	2mg/L
Blood sugar	42 mg/dl	Urine examination colour Pus cells Red blood cells Hematuria hemoglobinuria	15-20/hpf, 30-50/hpf, Present present
Urea	176 mg/dL	x-ray chest	fine infiltration in both lung field
Creatinine	6.2 mg/dL	x-ray abdomen	Normal
Bilirubin Total	5.7		
Direct	2.3		
Indirect	3.4 mg/dL		

sensitive to cefepime, metronidazole, clindamycin vancomycin meropenam doxycycline. Histopathological specimen of uterus showed marked acute inflammatory cells in fibromuscular tissue. Endometrium was not seen.

DISCUSSION

Clostridia are facultative anaerobic Gram positive bacilli known to produce virulence through a dormant toxic state, called an endospore. Occasionally, *Clostridium* infections can cause the potentially dangerous complication of gas gangrene which can ultimately lead to septic shock. Necrotic tissue may serve as a source of *Clostridium* infection and sepsis. Ischemic and hypoxic conditions caused by necrotic tissue create the anaerobic conditions necessary for *Clostridium* growth and spore germination [1]. Clinical infection develops in only a small fraction of patients carrying CP in particular progression to gas gangrene as a rare but greatly feared complication resulting

in potentially fatal sepsis. Fulminant sepsis caused by CP is typically complicated by hemolytic anemia renal failure jaundice hemoglobinuria and gas gangrene [4]. The mortality rate is as high as 50 to 85%. CP is capable of producing exotoxin. Of these alfa toxins lecithinase C which acts on surfaces of RBC and WBC is responsible for intravascular hemolysis which causes anemia and jaundice. It may produce hemorrhage as a result of its necrotizing action on capillaries and arteriolar walls. The onset of symptoms from time of infection is rapid 12 to 24 hours. When the organism is introduced in to the uterus & sepsis develops injured/necrotic tissue must remain in the uterus which permits bacterial incubation and growth of bacterial colonies that is why clostridial infection occurs frequently after abortion and delivery. The typical clinical manifestation of clostridial sepsis includes hemolysis, hemoglobinuria, renal failure and gas in the pelvic soft tissue as in our case [2,3]. When these are present or patient's condition worsens owing to sepsis surgery should be performed immediately to remove the affected site. In the present case all of the signs were already present on admission, early aggressive therapy including antibiotic were given and surgery was performed timely but due to fulminant course patient could not saved.

CONCLUSION

From our case we want to give message that sometime history is not reliable and early aggressive management may help in survival of patient. Our patient was a case of illegal abortion and belongs to low socioeconomic status and uneducated. Illegal abortion increases morbidity and mortality so abortion services should be legalized and provided by safer hands to women according to their need and indication.

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