Clostridial species and group D streptococcal septicemia in a pregnant woman: Case report and Literature review.

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ABSTRACT

We report a case of Clostridial species and group D Streptococcal septicemia in a pregnant woman. She had no evidence of recognised underlying condition for such septicemia. The patient responded well to the antimicrobial therapy and the outcome of the mother and baby was excellent.

Keywords: Septicemia, Clostridia, Streptococci.


Although sepsis is mainly a disease of the elderly, its incidence is increasing in younger patients due to the rising number of invasive procedures which enables pathogenic organisms to bypass the natural defence barriers, the increasing use of antibiotics which enhance the emergence of resistant organisms and alters the host own endogenous flora. The increase in sepsis is also precipitated by the development in medical treatment of malignancies and immunologic diseases, and also by the world wide epidemic of Acquired Immuno-deficiency Syndrome (AIDS).1

Maternal mortality although relatively low and declining, remains a particularly devastating problem because of its effect on healthy young women and often the life of the fetus or the newborn. Tracking the causes of maternal death, infection remained a leading cause of direct maternal mortality during pregnancy.2,3,4 In Saudi Arabia, sepsis accounted for 8.5% of direct maternal deaths.5

We report a case of Clostridium species and group D streptococcal sepsis in a pregnant lady. As far as we know this may be the first such reported case from the Kingdom of Saudi Arabia and adjacent countries.

Case Report. A 32 years old P 3 + 1 G 5, who had no history of previous major illness, presented at 32 weeks of pregnancy with acute abdominal pain, vomiting and fever for one day. Investigations results were as follows: White blood count (WBC) 10.1 x 10^9/l with shift to the left, hemoglobin (Hb) 10.3 g/l, microscopic hematuria, negative urine culture. Blood culture grew a Clostridium Species. The ultrasound examination showed a fetus growth corresponding to dates and slightly increased echogenicity of the right maternal kidney.

She received intravenous (I. V.) Metronidazole and Cefuroxime, and a repeat Hb after two days was 8.0 g/l, WBC 4.62 x 10^9/l. She continued to improve and was discharged home in good health after 10 days.

Two weeks later she presented with a similar attack of abdominal pain and vomiting, her temperature was 35.7° C, WBC 8.6 x 10^9/l, Hb 10.1g/l. She was started on I. V. Penicillin and Metronidazole. A blood sample collected before the start of antibiotics grew group D Streptococci identified as Streptococcus bovis. Urine, stool and high vaginal swab cultures were all negative. An

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echocardiogram was normal. The fetus growth was on the 10th centile by ultrasound. She continued to improve and had induction of labor at 37 weeks of gestation. The baby weight was 2.54 kg, Apgar Score 8/9, and both were discharged on the third day postnatally in good health.

Barium meal and colonoscopy performed 6 weeks later showed no abnormality. She was followed up 8 months later and was well.

**Discussion.** During pregnancy when sepsis occur, it is generally the result of either septic abortion, pyelonephritis, chorioamnionitis or postpartum infection, or due to non obstetric causes such as appendicitis, or following invasive procedures such as amniocentesis.¹

Most reported cases of sepsis in adults are generally secondary to gram negative organisms which accounts for 55-60% of cases. However, gram positive organisms play an increasing role as well during pregnancy,¹ sepsis is usually polymicrobial with anaerobic organisms including anaerobic Streptococci, Peptococci and Bacteroides playing a prominent role.⁶,⁷,⁸,⁹

Streptococci specially group B (GBS) have a special importance in the female genital tract as they account for one quarter of all maternal bacteraemia.¹⁰ Most of pregnant women with streptococcal bacteraemia have the traditional predisposing features such as prolonged membrane rupture or vaginal - cervical trauma.¹⁰

Although group D Streptococci (DGS) generally have low virulence they some times cause adult infections such as endocarditis and urinary tract infection.¹⁰ Insipe of their isolation from 15% of genital specimens of asymptomatic antepartum females and 4-24% of infected purpural women (10), their pathological role in pregnancy remains unclear. However they should not be ignored as they are reported to have high mortality (42%) in other clinical situations.¹¹ Our case responded well to therapy.

Clostridial species accounts for 1-3% of all positive blood cultures, the most common species being C. Perfringens and in the majority of cases, it represent either contamination or transient bacteraemia.¹² Our patient was symptomatic and most likely she had genuine bacteraemia. On the other hand, in some cases there is clear cut clinical relevance in infections associated with gas production, clostridial myonecrosis, something which was not evident in our case. There is also an association of Clostridium septicum bacteraemia with colonic carcinoma, leukemia, neutropenia and rarely intravascular hemolysis,¹² those conditions were not elucidated in our patient. Typical symptoms of Clostridial bacteraemia include sudden onset of fever, abdominal pain, vomiting, and diarrhoea, similar to the finding in our patient. Our case differ from previous reported cases as there was no evidence of underlying diseases, she also had GDS bacteraemia without predisposing factors such as rupture of membranes or vaginal - cervical trauma. The possibility of the isolates being due to contamination was ruled out as our patient was symptomatic with investigation results consistent with infection and she responded to the antimicrobial therapy.

The infection with both organisms raised the suspicion of compromised immunity, but the patient did not consent for testing for Human immune deficiency virus (HIV). The follow up of the patient and her baby 8 months later was normal.

We conclude that Clostridial septicemia can occur in pregnancy without associated recognized underlying conditions like colonic malignancies. The good outcome in our case justify the use of suitable antimicrobial agents if a blood culture of asymptomatic pregnant lady showed a growth of Clostridial species and/or GDS.

**References**