CASE REPORT

Septic Abortion due to *Streptococcus pneumoniae*: a rarity - Case report

Imran Ahmed*, Kauser Jabeen*, Sumaira Naz**, Afia Zafar*

*Department of Pathology and Laboratory Medicine, Aga Khan University Hospital, Karachi, Pakistan.
**Department of Obstetrics and Gynaecology, Aga Khan University Hospital, Karachi, Pakistan.

Abstract
It is very rare to find *Streptococcus pneumoniae* causing septic abortion. This case report describes a case of septic abortion attributed to *S. pneumoniae*. The pathogen was isolated from high vaginal swab and blood cultures of the patient. The patient was treated successfully and discharged in stable condition. This case report highlights the significance of pneumococcus in septic abortion and emphasizes upon microbiology laboratory personnel the importance of correlating cultures with clinical findings of patients.

Key words
case report, septic abortion, *Streptococcus pneumoniae*

Introduction
Streptococcus pneumoniae is a gram positive, capsulated, lancet shaped diplococcus. It causes serious infections of various organ systems including, pneumonia, bacteremia, sepsis and meningitis, which may be life threatening. On rare occasions, it may be isolated from unusual sites such as causing necrotizing fasciitis and deep seated abscesses of different organs e.g. spleen, liver, pancreas, brain and others.[1-3] *S. pneumoniae* causing septic abortion is very rare. Literature review identifies only a few cases of septic abortion caused by *S. pneumoniae*.[4,5] Here we report a case of *S. pneumoniae* septic abortion, a rare presentation.

Ethical Review
The study was provided an exemption of ethical approval by the Institutional Ethical Review Committee.

The Case Report
A 31-year-old woman, gravida 8, para 6+1, at 11 weeks gestation, presented in emergency department in November 2013 in our hospital with lower abdominal pain and fever for 24 hours. She also had off and on vaginal bleeding for 17 days. She did not have symptoms related to urinary, bowel, respiratory systems. There was no sore throat or ear infection or any other systemic illness. Patient denied history of intervention or attempt for induced miscarriage.

Corresponding Author: Imran Ahmed,
Senior Instructor, Department of Pathology
and Laboratory Medicine,
Aga Khan University Hospital, Karachi, Pakistan.
Email: imran.haq@aku.edu

On examination, she was febrile (38°C), pulse was 115beats/min, respiratory rate 22/min and blood pressure 110/63mmHg. There was no ear discharge or neck rigidity and chest examination was normal. Abdomen was soft but she had diffuse tenderness in lower abdomen. Per speculum examination revealed brownish discharge and a high vaginal swab was taken for culture. On bimanual examination, uterus was 12 weeks size, cervical os was closed, tenderness on cervical excitation was positive and no adnexal mass was felt.

Her baseline investigations and septic workup were sent. Complete blood count report showed haemoglobin10.1 g/dl and WBC count 11,500 /mm^3(normal range: 4000-10000) with 90% polymorophonuclear leukocytes. Her CRP was 3.6 mg/dL (normal range: 0-0.5) on admission. Pelvic ultrasound showed a single intrauterine fetus with crown rump length of 2.8 cm, corresponding to 9 weeks and 4 days, cardiac activity was absent and there was no perigestational sac abnormality.

On the basis of clinical presentation and laboratory work up, provisional diagnosis of septic abortion was made. She was started on broad spectrum intravenous antibiotic (piperacillin-tazobactam). Medical termination of pregnancy was attempted but was not successful. Her CRP rose to 12.9 mg/dL in 48 hours. She underwent dilatation and evacuation at 72 hours of starting her on antibiotics. Evacuated material was sent for histopathology which confirmed it as products of conception.

Blood cultures grew *Streptococcus pneumoniae* (penicillin minimum inhibitory concentration: 0.03 µg/ml). Antibiotics were de-escalated to ceftriaxone and metronidazole. High vaginal swab taken on admission showed heavy growth of *S. pneumoniae* with the same sensitivity as that of blood isolate. Products of conception were also sent for culture but did not yield any growth. Patient recovered fully and discharged home in a stable condition.

Despite all the advances in the field of medicine, *S. pneumoniae* still remains a major pathogen causing high morbidity and mortality and may be isolated from unusual sites.

It is very rare for *S. pneumoniae* to cause septic abortion. Literature shows very few cases of septic abortion due to *S. pneumoniae*.[4,5] In postpartum women, peritonitis, endometritis and tuboovarian abscess caused by pneumococcus have been

described.[6-8] *S. pneumoniae* is usually not a part of normal vaginal flora but it may be found in low numbers as a transient colonizer without causing disease. People at risk of getting pneumococcal infection include those with chronic medical conditions (hepatic, heart & renal failure), asplenia, steroids, immunoglobulin & complement deficiency, neutropenia or neutrophil functional defects, malnutrition, alcoholism and history of gynecological instrumentation.[9] None of these were found in this patient. *S. pneumoniae* possesses several virulence factors that enable it to cause disease. These include polysaccharide capsule (prevents opsonization and phagocytosis), IgA protease (cleaves immunoglobulin A), pneumolysin (cytotoxic, activates complement), autolysin (causes bacterial disintegration and release of pneumolysin) and pneumococcal surface proteins A & C (inhibit phagocytosis) among others.[9] The fine balance between microbial virulence (affected by absolute number of that pathogen), host immune system and the presence of other microflora determines the ability of a pathogen to cause disease.[10] Here we suggest that this case represents an ascending infection of the reproductive tract since there were no localizing signs for other organ systems. Literature shows a similar case report of a septic abortion caused by pneumococcus where source of infection was presumed to be uterine in origin.

In our patient, *S. pneumoniae* infection resulted in septic abortion. Obstetrical procedures and septic abortion are associated. This patient did not have prior history of intervention or illness. *S. pneumoniae* was isolated from blood culture and also from high vaginal swab in almost pure culture. However, *S. pneumoniae* was neither observed on Gram stain of products of conception nor isolated from its culture. This is most likely due to the fact that patient had been receiving antibiotics for the last 72 hours before dilatation and evacuation was performed.

Conclusion

This case illustrates a rare presentation of *S. pneumoniae* infection. Though rare, but *S. pneumoniae* may be isolated from high vaginal swab and if the growth is predominant, it should not be disregarded. An attempt must be made to clinically correlate its significance.

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