

Case Report

***Streptococcus agalactiae* causing pyometra in an elderly female with cervical cancer**

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Abstract

Streptococcus agalactiae is an important cause of invasive infections in neonates and is emerging as an important pathogen in elderly females. *S. agalactiae* is a commensal organism of the female genital tract; however, isolation from the uterine cavity suggests ascending infection of this organism caused by occlusion of the uterine cavity. We report a case of *S. agalactiae* causing pyometra in an elderly female with cervical cancer.

Key words: *Streptococcus agalactiae*; commensal flora; female genital tract

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Introduction

Group B Streptococcus (GBS) or *Streptococcus agalactiae* is traditionally considered to be a neonatal pathogen; however, over the past few decades it has also been noted as an important cause of morbidity and mortality among nonpregnant adults and elderly women [1]. Adults with severe GBS infection unrelated to pregnancy are usually elderly and have an underlying illness such as diabetes mellitus, liver disease, malignancy, acquired immunodeficiency syndrome or renal failure [2]. The clinical presentations of invasive GBS disease among nonpregnant adults most often take the form of primary bacteremia, skin or soft tissue infections, pneumonia, urosepsis, endocarditis, peritonitis, meningitis or empyema [2,3].

Pyometra, accumulation of pus in the uterus, usually develops in elderly women and may or may not be associated with malignancy. It develops gradually and as it progresses the uterus can become enlarged [4]. In one study of pyometra in 18 mainly post-menopausal women (17/18) the most common organism isolated was the anaerobic bacterium, *Bacteriodes fragilis* [5]. Anaerobic bacteria were isolated from the uterine cavity of 10 out of 18 patients (56%) having pyometra. Other organisms, *Escherichia coli*, *Enterococcus* spp, *Streptococcus viridians*, *Klebsiella pneumoniae*, *Peptococcus* spp, *Pseudomonas*

aeruginosa, and *Staphylococcus aureus* were also recovered from the cases.

Here we report a case of *S. agalactiae* causing pyometra in an elderly female with cervical cancer.

Case report

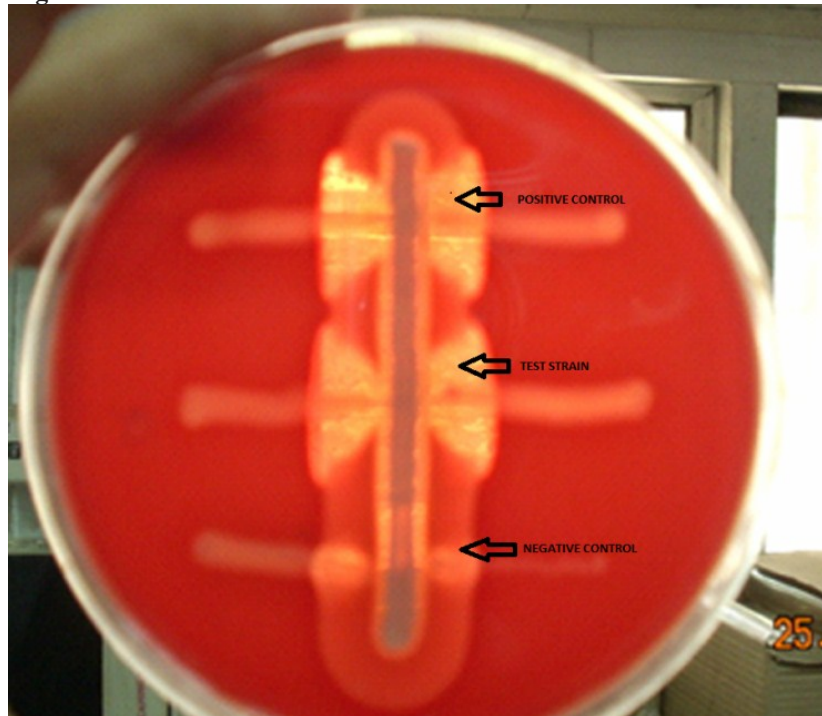
A 50-year-old female patient, a known case of moderately differentiating squamous cell carcinoma of the cervix, stage IIIB, on chemotherapy (three cycles received prior referral) was referred to the Gynaecology Department of Lok Nayak Hospital, New Delhi, with complaints of pain in the lower back which was gradually progressive. This condition had persisted for 10 months. The patient also had dysuria and decreased urine output. The patient had no known history of diabetes or any other major illness.

On initial evaluation, the patient was afebrile with stable vital signs, but had pallor. Abdominal examination was normal; however, vaginal examination revealed an enlarged uterus (6 to 8 weeks), anteverted with tenderness in the fornix. Cardiovascular and respiratory systems were normal. Routine hematological examination revealed haemoglobin (4.6 gm%) and an elevated white blood cell count of 12,600/mm³ with 76% neutrophils, 18% lymphocytes and 3% each of eosinophils and basophils. Urine microscopy revealed 6-8 white blood cells/high power field. The remainder of her clinical

Figure 1. *Streptococcus agalactiae* growth on blood agar



Figure 2. CAMP test



evaluation, including liver and kidney function tests, were normal. HIV serology was negative. Pyometra was diagnosed using contrast enhanced computerized tomography (CECT) of the abdomen. Pus was drained and sent for culture and antimicrobial sensitivity testing by the Microbiology Department on the same day.

Gram staining of pus revealed Gram-positive cocci in pairs and short chains. The sample was inoculated on 5% sheep's blood agar and Mac-Conkey agar medium. After 24 hours of incubation at 37°C, an abundance of small, grey-coloured colonies with a narrow zone of beta haemolysis was observed on the blood agar medium (Figure 1) and pink-coloured tiny colonies were evident on the Mac-Conkey medium. Colonies were catalase negative. Gram staining of the colonies revealed Gram-positive cocci arranged in pairs and small chains. CAMP test showed an area of increased hemolysis at the junction of two streaks of GBS and *S. aureus* (Figure 2). Streptococcal serogrouping was performed using the Streptococcal latex agglutination kit (Plasmatec Ltd., Dorset, United Kingdom) and the isolate was identified as a Group B *Streptococcus*. Antimicrobial sensitivity testing was performed using the modified Stokes disc diffusion method [6]. The isolate was sensitive to penicillin, erythromycin, clindamycin (D test negative), chloramphenicol, cephalexin, cefazolin, and ofloxacin. The patient was treated with ciprofloxacin and metronidazole prior to the availability of the antibiogram results.

The general condition of the patient improved on treatment and she was discharged two days after the operative procedure. A transvaginal scan done on the day of discharge revealed that the uterine cavity was empty with no pus in the cavity.

Discussion

Pyometra is an uncommon condition occurring mainly in elderly postmenopausal females, and results when natural drainage of the uterine cavity is compromised. The reported incidence of pyometra is 0.01% to 0.5% in gynecological patients, though much higher in elderly women [7]. Due to the increasing size of elderly adults in the population, pyometra and its related complications are encountered by clinicians more frequently [7].

Pyometra can be caused by stenosis of the cervical canal, which may result from cervical carcinoma, occur as sequelae after amputation of the cervix, radiation cervicitis, or postmenopausal involution of the uterus [4]. Endometrial discharges collect in the

uterine cavity and can become infected with opportunistic bacteria; these bacteria probably reach the body of the uterus from the vagina. Infection can result in the enlarged uterus which appears tense and tender on bimanual examination.

More than 50% of all patients of non-ruptured pyometra are asymptomatic [8]. Postmenopausal bleeding, vaginal discharge, uterine enlargement, and cramping pain are known to be classic symptoms of pyometra [10], but in this case the patient presented with abdominal pain with pressure symptoms due to an enlargement of the uterus. Rupture of the pyometra into the abdomen is one of the most common complications of pyometra [4]. The foremost treatment of pyometra is drainage of the pus, but treatment is also dependent upon any possible underlying illness.

S. agalactiae has been regarded as a normal component of the vaginal flora, associated with premature birth, amnionitis, neonatal meningitis and sepsis, indicating ascending transmission of the microorganism from the vagina [10-11]. Although some studies report that *Streptococcus* spp. have been isolated from patients with pyometra [5], none of the studies have shown Group B Streptococci as a cause of pyometra. *S. agalactiae*, which is considered a commensal in the female genital tract, can also cause serious infections such as pyometra, as seen in present study. The probable cause may be that the patient with cervical carcinoma was on chemotherapy which often leads to compromised immunity. Our the findings suggest that vaginal screening for potential pathogens such as *S. agalactiae* in patients with cervical cancer should be performed regularly as this commensal can lead to fatal infections in the patient.

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