1 Evaluation of patient- versus provider-collected vaginal swabs for microbiome analysis during pregnancy

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OBJECTIVES: Prior microbiome analyses in non-pregnant women demonstrate similar vaginal bacterial communities with patient- and provider-based sampling. Given changes in the vaginal microbiome and maternal physiology during pregnancy, including the gravid abdomen and leukorrhea of pregnancy, we aimed to evaluate if patient- and provider-collected vaginal swabs reflect similar microbial community characteristics in pregnant women.

METHODS: Pregnant patients performed a self-collected vaginal swab, and subsequently underwent a provider-collected swab via speculum exam during a routine prenatal care visit. DNA pyrosequencing of V1V3 and V3V5 variable regions of the 16S RNA gene of patient- and provider-collected swabs were performed. Community characteristics of patient- and provider-collected swabs were compared, including relative abundance of taxa, alpha diversity and beta diversity.

RESULTS: Ninety-four vaginal swabs from 47 women were analyzed, with mean 5572 16S rRNA gene sequences obtained per sample. Median gestational age of sampling was 20.1 weeks (interquartile range 12.4–28.0 weeks) and ranged from 5 to 33 weeks. On non-metric multi-dimensional scaling plots, patient-collected swabs did not cluster separately from provider-collected swabs; paired patient- and physician-collected swabs clustered closely. Among paired samples of 16S RNA sequences from V1V3, 39 of 47 paired samples (83.0%) showed strong correlation between provider- and patient-collected swabs (Pearson correlation coefficient >0.9); the 8 V1V3 sequences with weaker Pearson correlation (<0.9) had correlation coefficients ranging from 0.57 to 0.89. Additionally, 34 of 46 paired samples (73.9%) of 16S rRNA sequences from V3V5 also demonstrated strong Pearson correlation (>0.9); the 12 samples in the V3V5 region with weaker correlation had correlation coefficients ranging from 0.49 to 0.89. No specific taxa were preferentially detected by self-sampling or physician-sampling, with relative abundance of taxa highly conserved between paired samples. No significant difference in Shannon diversity for V1V3 (p=0.22) and V3V5 (p=0.11) sequences among patient- and provider-collected samples was demonstrated.

CONCLUSIONS: We demonstrate that bacterial communities defined from patient- and provider-collected vaginal swabs in pregnant women are similar, validating utilization of patient-collected swabs for vaginal bacterial microbiome sampling during pregnancy.

2 A rare case of disseminated histoplasmosis masquerading as vulvar cancer in HIV-infected patient: a case report

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OBJECTIVES: Background: Histoplasmosis is a systemic mycosis caused by thermally dimorphic fungus Histoplasma capsulatum. It can be found endemically in the United States within the Ohio and Mississippi River Valleys. The symptoms are often self-limiting in the immunocompetent person. In those with cell-mediated immunity defects, histoplasmosis can disseminate causing multi-organ manifestations. Two to twenty-five percent of HIV positive patients living in endemic areas are affected by histoplasmosis. In more than half of these patients, histoplasmosis is the first manifestation of this immunocompromised state. Here, we present a rare manifestation of disseminated histoplasmosis presenting as an indolent non-healing ulcerative lesion masquerading as vulvar cancer.

METHODS: Case study.

RESULTS: Case: A 34 year old African American female with a history of AIDS presented to our hospital for an ulcerated non-healing left labial lesion, fever, night sweats, and was initially diagnosed with superimposed infection. The patient had been treated for a recurrent, progressive Bartholin’s gland cyst four months prior with antibiotics and incision and drainage. No improvement raised concerns for a recto-vaginal fistula versus vulvar cancer. Exam under anesthesia 1.5 weeks earlier showed no fistula and benign biopsies that stained negative for CMV and HSV I and II. Patient had been non-compliant with antiretroviral medication with viral load of 161,438 cp/ml 6 weeks prior. At that time, she was restarted on antiretroviral medication. Her admit viral load was 108 cp/ml, CD4 count of 97 cells/mm³, and CD8 count of 193 cells/mm³ with a CD4:CD8 ratio of 0.3. On admit, she was started on IV Piperacillin-Tazobactam and vancomycin for suspected superimposed infection. Wound culture showed heavy diphtheroids. Further work up ruled out tuberculosis, Aspergillus fumigatus, Coccidioides immitis, Blastomyces dermatitidis, Toxoplasma gondii, and Cryptococcus neoformans. Urine histoplasma antigen resulted positive at 3.09 ng/ml. Complement fixation titers for histoplasmosis yeast were 1:32, indicative of active disease. Subsequently, patient was started on liposomal amphotericin B IV 3 milligrams/kg daily for two weeks. PAS and GMS staining of biopsies showed budding yeast consistent with histoplasma species. She was discharged home on liquid itraconazole 200mg three times a day for three days followed by 200mg twice a day. Patient was lost to follow up.

CONCLUSIONS: This case scenario describes a rare and atypical presentation of disseminated histoplasmosis. Review of the literature shows only two cases regarding a vulvar lesion as the presenting symptom.

3 Metronidazole-resistant trichomoniasis: beneficial pharmacodynamic relationship with high-dose oral tinidazole and vaginal paromomycin combination therapy

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OBJECTIVES: Metronidazole (MTZ)-resistant trichomoniasis is an uncommon condition which is a significant therapeutic challenge. To date, combination therapy with high dose oral tinidazole (TDZ) and vaginal paromomycin (PARO) cream has been successful in all published cases, but it is unclear whether the results are from these medications singly or together.

METHODS: A review of two patients who failed consecutive mono-therapy courses with TDZ and PARO who were then treated with combination TDZ and PARO.