Chorioamnionitis in the Setting of Laminaria and Intra-Amniotic Digoxin: A Case Report

Lindsey A Roth*, Natalie Davis, and Christina Jung
Department of Obstetrics and Gynecology, New York University School of Medicine, New York, USA

Abstract

Background: Laminaria placement and digoxin injection for induced abortion are safe procedures. However, there remains a theoretical risk of bacteria ascending into the cervix and uterus, leading to possible infection. Very few studies and case reports exist regarding infection with laminaria placement and digoxin injection and the use of antibiotic prophylaxis for these procedures.

Case: Herein, we present a case of chorioamnionitis after laminaria placement and intra-amniotic digoxin injection in a patient with intact membranes prior to a dilation and evacuation procedure.

Conclusion: Although infection with laminaria placement and digoxin injection is rare, additional research is warranted. The use of prophylactic antibiotics at the time of laminaria placement and digoxin injection should be further explored, especially in patients with risk factors.

*Correspondence to: Lindsey A Roth, MD, Department of Obstetrics and Gynecology, New York University School of Medicine, New York, NY, 10012, United States; E-mail: Lindsey.roth@nyulangone.org

Citation: Roth LA, Davis N, Jung C (2023) Chorioamnionitis in the Setting of Laminaria and Intra-Amniotic Digoxin: A Case Report. J Womens Health Care Manage, Volume 4:1. 144. DOI: https://doi.org/10.47275/2692-0948-144

Received: May 20, 2023; Accepted: June 08, 2023; Published: June 13, 2023

Background

Infection as a complication of induced abortion is rare. Studies have found risk of infection in the setting of induced abortion is approximately 1%, especially in the setting of perioperative prophylaxis [1]. However, there have been no trials looking at the infection risk of osmotic dilators in second trimester termination, and only a few case reports of infection after osmotic dilator placement [2,3]. Infection risk with osmotic dilator placement is low, likely due to sterilization by irradiation or ethylene oxide gas and removal of osmotic dilators within 12 to 48 hours after insertion [4]. However, there remains a theoretical risk of vaginal bacteria ascending into the cervix and uterus, leading to possible infection.

Furthermore, some research has examined risk of infection after intra-amniotic digoxin. One retrospective cohort study compared infection rates among those undergoing termination between 18-24 weeks who received digoxin versus those who did not and found the digoxin cohort had a greater likelihood of signs of infection [5]. Another large case series found infection rates after digoxin to be 0.3%, however all patients with infection had rupture of membranes prior to procedure [6]. One additional study looking at 4,906 dilation and evacuation procedures with digoxin injection reported only two cases with infection, with one post- and one pre-procedure [7]. These studies demonstrate the low infection rate among those who receive digoxin injections, and thus intra-amniotic digoxin is thought to be safe.

Herein, we present a case of chorioamnionitis diagnosed after laminaria placement and intra-amniotic digoxin injection in a patient with intact membranes prior to a dilation and evacuation procedure.

Case

A 39-year-old gravida four, with a history of fibroids, one prior full-term cesarean section, and two spontaneous abortions, presented to our clinic at 24 weeks and 5 days seeking elective termination of her pregnancy. She had been receiving prenatal care at another facility, and was dated by her last menstrual period that was consistent with an 8-week ultrasound. During her prenatal care her quad screen demonstrated increased risk of Trisomy 18. She underwent an amniocentesis with a fetal microarray that demonstrated a variant of uncertain significance.

After further counseling with both maternal fetal medicine and a genetics counselor, the patient elected for termination of pregnancy.

The patient then underwent placement of in-office laminaria. The placement included antiseptic preparation of the cervix with betadine, a paracervical block with 20cc of 1% lidocaine, and placement of four laminaria with one betadine-soaked sponge. The patient tolerated the procedure well and was sent home with instructions to return the following day. At 24 weeks and 6 days the patient returned to the clinic 22 hours after placement of the initial laminaria, for removal and placement of additional laminaria, as well as an intra-amniotic injection of digoxin. Under ultrasound guidance, 2mg of digoxin was injected transabdominally into the amniotic sac. Pelvic exam was then performed and all four laminaria and one sponge were removed from the cervix and vagina. Again, antiseptic preparation of the cervix
with betadine and a paracervical block with 20cc of 1% lidocaine were performed. 17 laminaria were then placed through the cervix and one betadine-soaked sponge placed inside the vaginal vault.

The patient arrived to the pre-operative area of the hospital the following morning, 18 hours after the digoxin injection and second set of laminaria placement. On arrival, she was ill-appearing with a temperature of 102.9°F and heart rate of 112 bpm. Her blood pressure was 137/70 and her oxygen saturation was 100%. On exam, the patient had a 15 cm fundal fibroid, making it difficult to assess for fundal tenderness, however was noted to be tender in the periumbilical area near the presumed fundus. A fever work-up was performed at this time with urinalysis, urine culture, complete blood count, comprehensive metabolic panel, blood culture, COVID-19 and respiratory panel swab, and chest x-ray. Labs were significant only for a leukocytosis (12.1 x 10^9/L) which had not been present three days prior (6.1 x 10^9/L). All other labs were within normal limits, COVID-19 and respiratory swabs were negative, and chest x-ray appeared normal. At this time the patient was presumed to have chorioamnionitis. Intravenous antibiotics were started, including ampicillin, clindamycin, and gentamycin, and the patient was taken to the operating room for evacuation of the uterus by dilation and evacuation.

In the operating room the 17 laminaria and one sponge were removed from the cervix and vagina. Membranes were noted to be intact. The procedure was performed, and all tissue was removed from the uterus under ultrasound guidance and sent to pathology. However, atony of the uterus was noted, and the patient experienced a postpartum hemorrhage with a total estimated blood loss of 1,500 mL. She was given uterotonicss including 30 units of intravenous pitocin, 1,000 mcg rectal misoprostol, 0.25 mg intramuscular hemabate, and 0.2 mg intramuscular methergine. An intrauterine balloon was also placed inside the uterus and inflated with 150 mL of normal saline.

Over the next 24 hours the patient continued on intravenous antibiotics and the intrauterine balloon was slowly deflated and removed. Hemoglobin dropped post-procedure to 7.4 g/dL, from a pre-operative hemoglobin of 10.0 g/dL, and the patient was transfused one unit of packed red blood cells. Blood and urine cultures returned negative, and chest x-ray appeared normal. At this time the patient was presumed to have chorioamnionitis. Intravenous antibiotics were started, including ampicillin, clindamycin, and gentamycin, and the patient was taken to the operating room for evacuation of the uterus by dilation and evacuation.

Infection after laminaria placement and intra-amniotic digoxin injection is rare. Although prior studies have shown the safety and efficacy of laminaria and intra-amniotic digoxin, these procedures are not without risk [4,6, and 7]. Currently, perioperative antibiotic prophylaxis is recommended for dilation and evacuation procedures