

# Staphylococcus Epidermidis Induced Maternal Sepsis and Chorioamnionitis Post Fetoscopic Laser Ablation: A Case Report

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## Abstract

A case of severe chorioamnionitis with Staphylococcus epidermidis after fetoscopic laser ablation is presented. Infection with these bacteria, which is part of the normal skin flora, is uncommon. A revision of the Prophylactic antibiotic treatment should be taken into account.

**Keywords:** Chorioamnionitis; Pregnancy; Laser Ablation; Staphylococcus Epidermidis

**Abbreviations:** Ductus venosus (DV); Post Operative Day (POD); Middle Cerebral Arterial-Peak Systolic Velocity (MCA-PSV); Twin-to-Twin Transfusion Syndrome (TTTS); Premature Rupture of Membranes (PPROM); Complete Blood Count (CBC); Intra-Amniotic Infection (IAI)

## Introduction

TTTS is a serious complication of monochorionic-diamniotic twins pregnancy and its divided into 4 levels of severity. When left untreated it is associated with high rate of fetal mortality. Fetoscopic laser ablation of the anastomotic vessels is one of the treatment options. Intra-amniotic infection (IAI) is frequently found with enteric or vaginal flora, such as- *Ureaplasma* and *Mycoplasma*, Anaerobes and GBS [1]. This complication as the result of the procedure is about 2% [2], despite prophylactic antibiotic treatment. In this case study we present an IAI after laser ablation involving Staphylococcus epidermidis, that is part of the human flora and is not known to be with high virulence. This case requires reconsideration of the pre-op treatment in order to reduce the rate of future cases.

## Case Presentation

A gravida 5 partum 3, 28 years old healthy women was admitted to our department with monochorionic twins gestation complicated by twin to twin transfusion syndrome grade 4. The donor twin had no visible urinary bladder, severe oligohydramnion and bradycardic heart rate of 90 bpm. Her medical history revealed a spontaneous abortion at 1<sup>st</sup> trimester and 3 normal vaginal deliveries. After consultation-the patient underwent a fetoscopy for laser ablation of placental blood vessels. The procedure went uneventful with spinal anesthesia, prophylactic antibiotic- 2 gram Cefazolin, and usage of 10 F trocar for the fetoscope. An ultrasound scan on POD 1 showed marked improvement of both twins showing

urinary bladder, umbilical artery flow within normal limits and Normal MCA PSV and normal flow on the DV. Cervical length was not shortened. Postoperative antibiotics were maintained for 24 hours after the procedure. On POD2 the patient complained about rupture of membranes.

A speculum examination was negative and AmniSure test ruled out PPRM. An oral course of nifedipine 20 mg was started due to complaints of uterine contractions. On the same night the oral body temperature raised to 38celsius, tachycardia of 120 bpm was noted. Physical examination revealed no uterine tenderness, a normal heart rhythm and a noticeable elevated body temperature above the uterus. Blood cultures were taken and CBC, respiratory virus panel and a urine culture. Due to substantial clinical risk for chorioamnionitis-is-an amniocentesis was done and broad spectrum antibiotic treatment was started. After the amniocentes is- the patient membranes were broken, fever elevated to 38.5 celsius and her heart rate raised to 170. An urgent amniocentesis microscopy showed cocci bacteria with no glucose in the amniotic fluid.

A diagnosis of chorioamnionitis was made. Fluid resuscitation began with high dose oxytocin IV drip in order to deliver the fetuses. The CBC showed leukopenia of  $1.9 \times 10^9/L$ , neutropenia of  $1.6 \times 10^9/L$ . Pain management was carried out with pethidine IV. The patient delivered the fetuses after a short while of 20 minutes. Bed side ultrasound examination revealed possible retained placenta at the left cornea and curettage was done in the operation

room. Cultures from the amniotic fluid revealed pure culture of staphylococcus epidermidis, which was also cultured in the blood culture. A wide broad spectrum antibiotic coverage was continued.

## Discussion

Chorioamnionitis is a possible complication of laser ablation for TTTS and its rate is about 2% and is known to occur only after PPROM [2]. Staphylococcus epidermidis is a known bacteria of the skin flora and does not produce aggressive virulence factors, rather it has special role in balancing the epithelial microflora [3]. High rates of antibiotics resistance has been reported [4] - with 19% resistant to cefuroxime and 28 % resistant to ceftriaxone. Previous virulent aggressive behavior of staphylococcus epidermidis haven't been reported yet as a pathogen of chorioamnionitis as far the authors know from literature review, thou - The involvement of staphylococcus epidermidis in perinatal death caused by fetal infection has been reported before in a study that included cultures taken from autopsies from IUFD fetuses and stillbirths [5].

Staphylococcus epidermidis was isolated as the only microorganism recovered at multiple organ sites in 6 cases of IUFD and 9 cases of PROM-which suggested that the bacteria is an intrauterine pathogen. It is also known that staphylococcus epidermidis can cause sepsis patients, more precisely in surgical ill patient [6] rather than in healthy young gravida

women. This presented case shows a grave consequence of post fetoscopy laser ablation sepsis and chorioamnionitis caused by staphylococcus epidermidis which is a common skin flora bacteria, in spite of perioperative prophylactic antibiotics. We suggest that perioperative antibiotic coverage will include antibiotics with treatment spectrum that will cover these bacteria-such as clindamycin or vancomycin.

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