

Septic arthritis of the shoulder due to *Ureaplasma urealyticum* after emergency caesarean section: a case report

Mahlouly J, Lhopitalier L, Suttels V, Mueller L, Wernly D, Borens O, Steinmetz S

Department of Orthopaedics and Traumatology - Lausanne University Hospital (CHUV) – Switzerland

1. BACKGROUND

Ureaplasma urealyticum is an intra-cellular bacterium frequently found colonizing the genital tract. Known complications include localized infections, which can result in premature deliveries. Septic arthritis due to *U. urealyticum* in healthy patients is exceptionally rare, although opportunistic septic arthritis in agammaglobulinemic patients have been reported. However, there are no reports of septic arthritis due to *U. urealyticum* following caesarean section or in the post-partum period.

2. CASE PRESENTATION

A 38-year-old immunocompetent woman presented with severe right shoulder pain, 1 month following emergency caesarean section at 26 weeks of gestation for pre-eclampsia and spontaneous placental disruption with an uncomplicated post-operative recovery. Physical exam of her right upper extremity revealed a swollen, warm and painful right shoulder on palpation and mobilization without neurovascular disorder. The vital signs were: Temperature of 37.2 °C, heart rate at 104 beats per minute, blood pressure of 148/95 mmHg, respiratory rate at 23 per minute and an oxygen saturation within the norm (SpO2 95% breathing ambient air).



Figure 1: AP right shoulder Xray without degenerative signs

Hemoglobin was 101 G/L, leukocytes 9.8 G/L, thrombocytes 305 G/L and C-reactive protein was increased to 271 mg/L. Blood cultures were sent for culture. Suspecting right shoulder septic arthritis without any degenerative sign on X-ray (Figure 1), she underwent open surgical debridement, synovectomy and 9 L saline solution lavage .

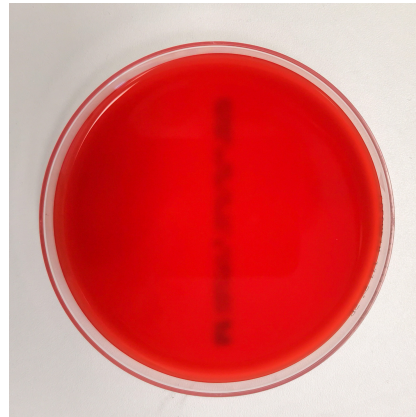


Figure 2: Classic blood agar with absence of *U. urealyticum* growth

Our suspicion of septic arthritis was confirmed with abundant pus following arthrotomy by a delto-pectoral approach. Awaiting culture results, empirical antibiotic treatment with intravenous amoxicilline and clavulanic acid was initiated. In spite of sterile cultures (Figure 2), clinical evolution was unfavorable with persistent pain, inflammation and purulent drainage, requiring two additional surgical débridement and lavage procedures.

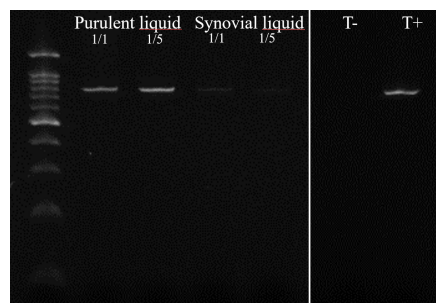


Figure 3: PCR amplification identifying *U. urealyticum* (Purulent liquid and Synovial liquid 1/1 and 1/5 are different dilutions of samples. T- and T+ are negative and positive controls)

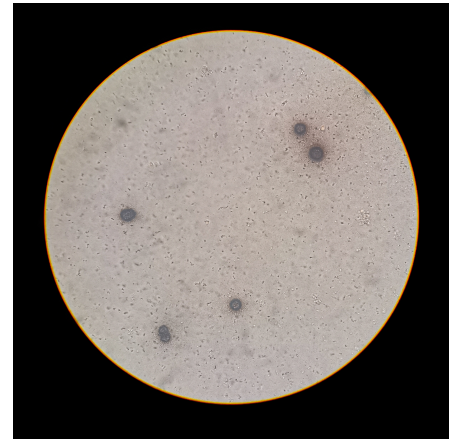


Figure 4: Microscopic view of characteristic *U. urealyticum* colonies on rich media supplemented with yeast extract and urea (10x)

The 16S ribosomal RNA PCR of the purulent liquid was positive for *U. urealyticum* at 2.95 × 10⁶ copies/ml (Figure 3), specific cultures inoculated a posteriori were positive for *U. urealyticum* (Figure 4).

Levofloxacin and azithromycine antibiotherapy was initiated. Susceptibility testing showed an intermediate sensibility to ciprofloxacin and clarithromycin. The strain was susceptible to doxycycline. Following cessation of breastfeeding, we started antibiotic treatment with doxycycline for 4 weeks (Figure 5). The subsequent course was favorable with an excellent functional and biological outcome.

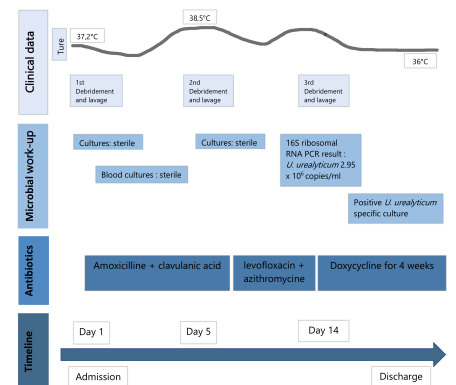


Figure 5: Timeline of clinical events and work-up

CONCLUSION

We report the first case of septic arthritis due to *U. urealyticum* after caesarean section. We hypothesize that the breach of the genital mucosal barrier during the caesarean section led to hematogenous spread resulting in purulent septic arthritis. The initial beta-lactam based antibiotic treatment, initiated for a purulent arthritis, did not provide coverage for cell wall deficient organisms. Detection of 16S rRNA allowed for a correct microbiological diagnosis in a patient with an unexpected clinical course.