

**MATerno-FETAL *Listeria monocytogenes* INFECTION DETECTED FROM AMNIOTIC FLUID (CASE REPORT)**Wali Alami Mohamed\*<sup>1</sup>, Hadi Imane<sup>2</sup>, Iraqui Houssaini Zineb<sup>3</sup>, Nader Soufiane<sup>4</sup>, Dadi Chaimae<sup>5</sup>, Benouda Amina<sup>6</sup>

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**INTRODUCTION**

Maternal-fetal bacterial infection is a public health concern, affecting approximately one to two cases per 1000 live births. Maternal-fetal infection (MFI) is responsible for a mortality rate of around 3% and sometimes severe morbidity.<sup>[1]</sup> The incidence of different causative agents varies from country to country.<sup>[2]</sup> Group B beta-hemolytic *streptococcus* and *Escherichia coli* are the most commonly encountered agents (over 70%). Infections by *Listeria* are rare.<sup>[3]</sup> We report the first case in Morocco of MFI due to *L. monocytogenes* detected from amniotic fluid at Cheikh Zaid International University Hospital in Rabat.

**OBSERVATION**

This was an incidental discovery of MFI following a cesarean delivery. The gynecologist observed discolored and malodorous amniotic fluid, suspecting an infection. A sample of the amniotic fluid was taken in the delivery room. Maternal history revealed a flu-like syndrome (cough, fever, and chills) that had not been investigated and was treated with paracetamol three weeks before delivery.

At birth, the newborn experienced respiratory distress, necessitating admission to the neonatal intensive care unit. Radiological examination showed decreased transparency in both lung fields.

Cerebrospinal fluid (CSF): Glucose: 0.45g/l; Protein: 1g/l; Chloride: 118 mmol/l; Direct examination and cultures were negative.

Urinary culture: Negative

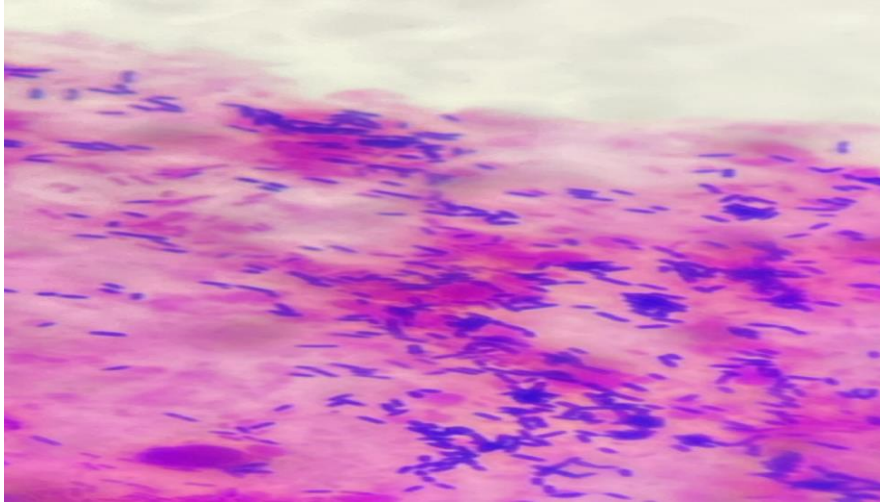
Biochemical analysis showed a CRP level of 145mg/l, total bilirubin at 95.24 mg/l, direct bilirubin at 4.99 mg/l, and the rest of the biochemical and hematological assessments were unremarkable. Bacteriological

examination included the amniotic fluid as well as peripheral samples from the newborn (rectal, nasal, throat, ear). Direct examination of the amniotic fluid showed a cellular reaction mainly composed of 90% neutrophilic polymorphonuclear cells with a significant bacterial flora of Gram-positive bacilli (Image 1). Similarly, direct examination of the peripheral samples showed the presence of Gram-positive bacilli. Given this observation, the suspicion of *Listeria* infection was raised, and the physician was contacted for appropriate management.

24 hours after culturing these samples, beta-hemolytic Gram-positive bacilli (Image 2) were isolated and identified through biochemical characteristics as *L. monocytogenes*. The performed antibiogram showed a wild-type *L. monocytogenes* profile (Image 3).

The patient and the child were treated with Amoxicillin-Clavulanic acid + gentamicin (due to a lack of ampicillin).

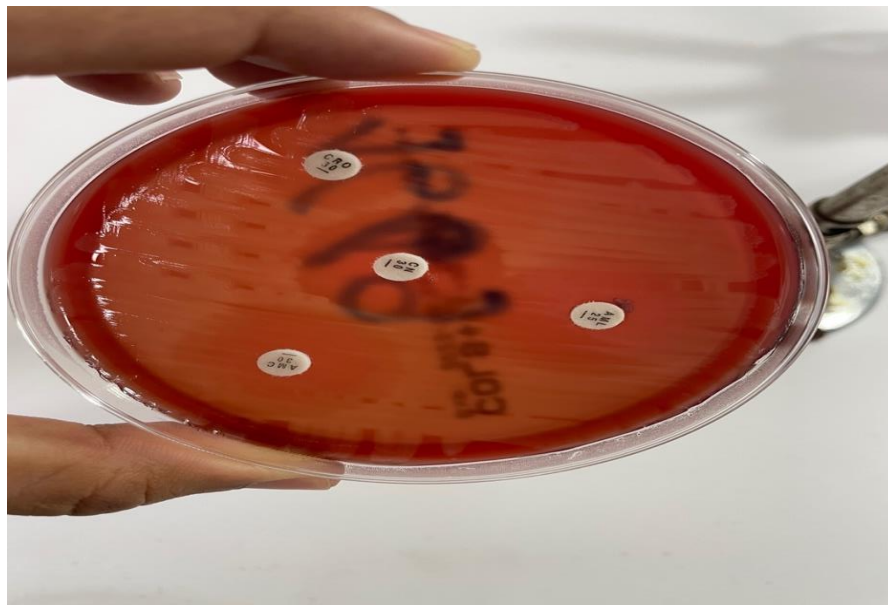
The outcome was favorable for both the mother and the newborn.



**Image 1: Direct examination (gram stain) of amniotic fluid.**



**Image 2: Blood agar culture (Listeria colonies).**



**Image 3: Antibiogram.**

Antibiogram interpretation.  
Gentamicin (CN): Sensitive.  
Amoxicillin-clavulanic acid (AMC): Sensitive.  
Amoxicillin (AML): Sensitive.  
Ceftriaxone (CRO): Resistant.

## DISCUSSION

Materno-fetal infection with *L. monocytogenes* is a rare but serious complication of pregnancy<sup>[4][5]</sup>, with approximately fifty cases reported annually in France.<sup>[4]</sup> Between 1994 and 2005, 37 cases of confirmed maternal-fetal *L. monocytogenes* infections were reported in Denmark.<sup>[6]</sup> In New Zealand, 147 cases of listeriosis associated with pregnancy were reported over a 20-year period.<sup>[7]</sup> We report a case of maternal-fetal *Listeria* infection for the first time at Cheikh Zaid University Hospital in Rabat.

In our case, the mother reported a history of fever and flu-like symptoms before childbirth, consistent with existing literature.<sup>[8][5]</sup> Most cases reported in Denmark presented with isolated fever, while some also had an atypical flu-like syndrome.<sup>[6]</sup> In Japan, a 41-year-old pregnant woman at 31 weeks of gestation presented with fever and arthralgia a few days before delivery.<sup>[9]</sup>

According to the literature, neonatal listeriosis manifests in two forms: early-onset with severe septic shock, non-septic manifestations, and multi-organ involvement; and late-onset within 3 weeks of apparently normal delivery, presenting as acute meningitis.<sup>[10][8]</sup> In our case, the infection was early-onset with signs of respiratory distress, aligning with what is described in the literature.<sup>[8]</sup> In a prospective study in France involving all live-born infants of mothers with materno-neonatal listeriosis, 56% presented with respiratory distress.<sup>[11]</sup>

A definitive diagnosis relies on isolating *L. monocytogenes* in cultures from any sample of the mother or child.<sup>[5]</sup> In our case, *L. monocytogenes* was isolated from the placenta and peripheral samples (throat, nose, and ear). The administered treatment was a combination of amoxicillin and gentamicin, showing significant clinical improvement due to its sensitivity to amoxicillin and the synergy achieved with gentamicin, as well as its natural resistance to cephalosporins. This aligns with the literature.<sup>[5][8]</sup>

## SUMMARY

This report presents the first documented case in Morocco of maternal-fetal *Listeria monocytogenes* infection detected from amniotic fluid. The infection was discovered incidentally during a caesarean section. The mother had presented with flu-like symptoms prior to delivery. At birth, the newborn presented respiratory distress, and tests confirmed the presence of *Listeria monocytogenes*. Treatment with a combination of protected amoxicillin and gentamicin resulted in clinical improvement. This case highlights the importance of

considering listeriosis in patients presenting with flu-like symptoms prior to delivery, and underscores the efficacy of the treatment of choice.

## CONCLUSION

Materno-fetal listeriosis is an extremely rare but serious pathology in pregnancy, and prompt management is crucial for prognosis. It is important to consider this condition in patients with risk factors (consumption of unpasteurized milk and raw foods during pregnancy) and in those experiencing unexplained fever and a flu-like syndrome before childbirth. The combination of amoxicillin and gentamicin remains the treatment of choice.

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