Brief letter to the editor: The Pediatric Infectious Disease Journal

Title
Nosocomial neonatal *Listeria monocytogenes* transmission by stethoscope

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Key words (up to 5): *Listeria monocytogenes*, stethoscope, nosocomial infection
Running Title: Nosocomial neonatal *Listeria monocytogenes* transmission by stethoscope

Conflicts of interest: none
To the editor:

We report the nosocomial transmission of *Listeria monocytogenes* IV 47 from a premature baby with early onset sepsis to a term baby with late onset meningitis. Root cause analysis identified a junior doctor’s stethoscope as the likely mode of transmission.

**Case 1**: A premature baby (30+2 weeks) had probable *Listeria* infection. The mother had a flu-like illness for two days before delivery. The membranes spontaneously ruptured 8 hours before delivery with meconium-stained liquor. Maternal vaginal and placental swabs grew *Listeria monocytogenes*, and she was treated with intravenous (IV) cefuroxime and metronidazole. The baby was born by emergency caesarean section in poor condition attended by the Neonatal Registrar and Senior House Officer (SHO1) during the day. The baby had pustules and petechiae on the trunk with thrombocytopenia and was treated with benzylpenicillin, gentamicin and amoxicillin. The CSF was blood stained, protein was raised at 2.01g/l and the CSF/serum glucose ratio was 0.57. CSF and blood cultures were negative but were collected following the first dose of antibiotics. The baby received three weeks of amoxicillin and 2 weeks of gentamicin.

**Case 2**: Nine hours prior, a term baby was born by vaginal breech delivery in the labor ward operating theater. The delivery was attended by the night Registrar and SHO (SHO2). The baby was discharged from the postnatal ward later that day following routine examination by SHO1. Ten days later the baby was readmitted with fever and irritability. CSF white cell count was 768μL polymorphonuclear cells 20%, mononuclear cells 80%, red cell count 10μL, glucose 1.9 mmol/L, serum glucose 5.2 mmol/L, (ratio 0.37), protein 1.64 g/L. *Listeria monocytogenes* was isolated from
CSF. The baby was treated with three weeks of IV amoxicillin and five days of gentamicin.

Isolates from case 2 and the mother of case 1 were sent to the Health Protection Agency reference laboratory for molecular typing (fluorescent amplified fragment length polymorphism) \(^1\). Both isolates were lineage IV serotype 4,47, a rare strain of *Listeria* that had not previously been isolated from other human cases or from foods within the London area in 2013.

Root cause analysis revealed the only common factor between the two babies was SHO1. Handwashing guidelines were adhered to and the two babies did not share a geographical location nor cot within the hospital at any time. The resuscitaire equipment was changed in between the births, and case 2 came into contact with resuscitation equipment nine hours before case 1 was born. The most likely mode of transmission was SHO1’s stethoscope. Both babies made a good recovery.

Transmission within neonatal units has been described between babies in the same room\(^2\) and within the delivery suite through shared resuscitation equipment \(^3\).

The stethoscope is a proven source of nosocomial infection\(^4\). National guidelines refer to policies to reduce nosocomial transmission\(^5\), however these can be poorly adhered to \(^4\). These cases highlight the importance of following infection control policies.
Acknowledgements

We are very grateful to the families of both patients involved in the cases.

Dr. Corinne Amar, Head of the Foodborne Pathogen Reference Services, Public Health England

Conflicts of interest

None of the authors have any conflicts of interest to disclose.

References

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