Answering a Crowdsourced Question: What Are the Best Ways to Establish Group B Strep (GBS) as a Likely Cause of Perinatal Morbidity?

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"A case was defined by the isolation of group B streptococci from a normally sterile site (e.g., blood or cerebrospinal fluid) in a resident within a surveillance area; cases identified on the basis of isolation of group B streptococci from amniotic fluid, placenta, or urine alone were not included."

Schrag SJ, Zywicki S, Farley MM, Reingold AL, et al. Group B Streptocccal Disease in the Era of Intrapartum Antibiotic Prophylaxis.
N Engl J Med 2000; 342:15-20.

'I had visited my antenatal day unit regarding thrush-like symptoms and was prescribed with a pessary and cream. This didn't cure it and I suffered symptoms on and off throughout the pregnancy. I visited my GP regarding this and again was prescribed with a pessary and cream. I have since learnt that these symptoms are another sign of high levels of GBS.
Why was this never mentioned or investigated?"

I think GBS entered into my amniotic fluid after my sweep which was performed on 21st October 2015 just 2 days before she saw born; she had then had GBS attacking her for more than 48 hours and eventually it killed her."

"We spoke to 3 midwives and a consultant about an autopsy and while they told us the decision was ours, they advised us that having an autopsy would most likely not determine the cause of Faith's death and would give us no answers. The common theory was that these things just happen and in most cases an answer is never found. We therefore decided to only have the placenta and cord sent off for testing

Of course now that I have the ability to think clearly that is obvious. If any of our other healthy children died with no explanation, of course we would have an autopsy and never accept the answer that these things 'just happen'! Death does not 'just happen', even in an unborn baby. There is always a reason, especially when it has developed and grown healthy for 9 months and accepting that these things 'just happen' will never lead to reducing the number of stillbirths."

"If all this information is out there how can the 2 consultants who have looked at my results and an experienced midwife all believe it is not possible for my daughter to have died from GBS as it is only a danger during delivery and she was dead before she was born?"

"My precious daughter, Faith, was stillborn on 23rd October 2015, nine days after her due date.

As I live in the UK, I was not tested for group B strep.

I had a routine 41 week sweep

on 21st October. On the morning of 23rd October when I awoke at 5am I was having regular contractions. By 8am I rang the hospital as the contractions were 3 minutes apart and lasting around 20-30 seconds. I was informed by the hospital to stay at home until they were lasting around 40 seconds. I waited until 10:30am and then went to the hospital. When I arrived they asked me if my movements were good, to which I replied, actually

'I can't recall feeling any movements today'

but I felt her in the night and she was active yesterday and to be honest I've been in agony all morning working through my contractions I haven't been aware. They listened in and to my horror there was no heartbeat. This was confirmed by ultrasound and minutes later I was ready to push. Within one hour of arriving at the hospital super excited to have our 4th and last child complete our family I had my dead baby in my arms.

This was a massive shock and I could not understand how this could be so, when I had a normal healthy pregnancy, and my baby had developed and grown perfectly. She weighed 7lb 14oz and looked just like her older sister, beautiful and perfect.

In our state of shock we decided not to have an autopsy but have the placenta and cord sent for testing.

My results showed:

1) my placenta was working fine for its age, but had a moderate growth of GBS,
2) my vaginal swab showed a heavy growth of GBS,
3) my daughters groin swab showed a heavy growth of GBS but nose swab was normal,
4) my bloods showed a mild infection such as that of a common cough or cold.

In conclusion we were told:

1) this was an unexplained stillbirth
2) none of the results would have caused any harm to my unborn child.
3) GBS is only a danger to the baby upon delivery
4) as my baby was dead before she was born this would not in any way have caused her death.

Nothing in my results could explain what had caused my seemingly perfect baby to die. Upon returning from my consultation I started doing some research and indeed found that rarely GBS can enter before birth and in rare cases stillbirth. I can accept that I will never receive any answers as to why my baby died.

What I do not accept is being told it is not possible for GBS to affect an unborn baby.
Also, I do not accept that I will be treated for GBS in future pregnancies
BECAUSE I had to have this baby die to find out I even have this!"
~Kim Poulton

"Autopsy results showed chorioamnionitis and pneumonia due to Group B strep. However, three of my four ob/gyns advised us to not have an autopsy done as it would most likely not determine the cause of Rose's stillbirth. Thanks to the other and a supportive pathologist, we decided to at least have a tissue sampling of Rose's heart and lungs cultured." ~ Marti Perhach

Suggested Ways to Establish a Likely Cause of Perinatal Morbidity:

1) Training for health care professionals, e.g., IMPROVE workshop (sanda.psanz.com.au/improve/), to learn:
a) How to communicate with parents about perinatal autopsy and the importance of encouraging parents to find the answers for closure, subsequent pregnancies, and to further research.
b) Autopsy and placental examination including best practices to maximize findings
c) Investigation of fetal deaths
d) Examination of babies who die in the perinatal period
e) Institutional and perinatal mortality audit and classification including updating fetal death records with test results/ diagnosis
f) Psychological and social aspects of perinatal bereavement. e.g., explaining how the baby's body will be treated with respect during examination

2) Perinatal infection medical training including key points to affirm likelihood of possible answers from pathology testing:
a) GBS can cross intact membranes
b) "Rarely finding cause" is a perpetuated myth. "A reasonable cause of death was identified in 99/124 pregnancies (79.84%)." LR Bonetti, et al. Arch Gynecol Obstet 2011 Feb;283(2):231-41.
c)) Burden of prenatal-onset GBS disease "Systematic review finds GBS causes up to 12.1% of stillbirths…" C Nan, Z Dangor, CL Cutland, MS Edwards, SA Madhi, MC Cunnington. BJOG 2015 Oct;122(11): 1437-45.

3) Develop and justify epidemiologic, clinically graded ("Proven," "Likely," "Possible," or "Atypical") case definitions of previously unclassified invasive prenatal-onset group B streptococcal (POGBS) invasive disease in order to inform research, advocacy, public policy, clinical care, and social support.

"Both parents and staff identified needs for improved training and development of evidence-based protocols (to guide care of families suffering perinatal mortality)"
Ellis A, et al. BMC Pregnancy and Childbirth. 2016 16:16.

"Verbal autopsy (VA) is a systematic approach for determining causes of death without routine medical certification."
Leitao J. Global Health Action 2013; 6. 21518.

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2) Kwatra G, Cunnington MC, Merrall E, et al. Prevalence of maternal colonisation with group B streptococcus: a systematic review and meta-analysis. *Lancet Infect Dis.* 2016 Sep;16(9):1076-1084.
3) Heath PT, Fiona J Culley FJ, Jones CE, et al. Group B streptococcus and respiratory syncytial virus immunisation during pregnancy: a landscape analysis. *Lancet Infect Dis.* 2017 Jul;17(7):e223-e234.
4) Stocker M, van Herk W, el Helou S, et al. Procalcitonin-guided decision making for duration of antibiotic therapy in neonates with suspected early-onset sepsis: a multicentre, randomised controlled trial (NeoPIns). *Lancet* 2017 Aug 26;390(100097):871-881.