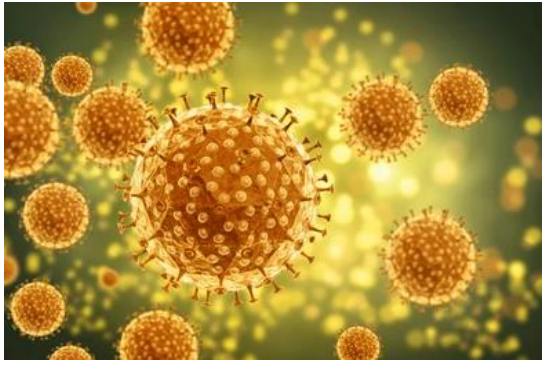

Microbiology Trainee Clinical Case Discussion Club

Session 3: 26th April 2023, 12-1pm BST

Supported by:

The Association for Clinical Biochemistry
Microbiology Group

The Association for Clinical Biochemistry & Laboratory Medicine 1953-2023

About us | Join us | Our Resources | Events and Awards | UKMedLab23

My account

Information type

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Topics of interest

- Analytical methods (1)
- Biochemistry (5)
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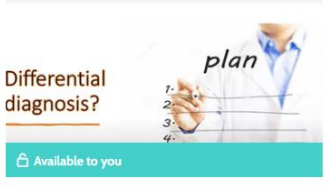
- Immunology (3)
- Microbiology (4)
- Paediatrics (2)
- Pregnancy (1)
- Training and education (2)
- Virology (1)



24 Mar 2023

Microbiology Trainee Clinical Case Discussion Club - Videos

Microbiology Professional Committee

Event material

24 Mar 2023

Microbiology Trainee Clinical Case Discussion Club Presentation - Session 2 (15 Mar 2023)

Microbiology Professional Committee

Event material

Housekeeping

Cases involve real patients. Please do not divulge any patient identifiable information. The content of the session is strictly confidential.

Please keep your microphones on mute.

Post any questions in the chat. There will be opportunity throughout the call to get to these. The session chair will ensure all points are covered.

When making a comment (as part of the interactive element) – please provide reasoning! We are all here to learn from one another.

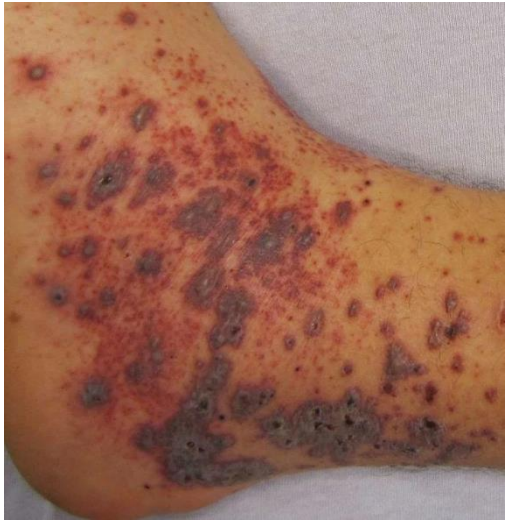
Please engage with the session and enjoy.

An unusual case of neonatal sepsis

Dr. Rachel Kettles
3rd Year STP, UKHSA Birmingham

The case

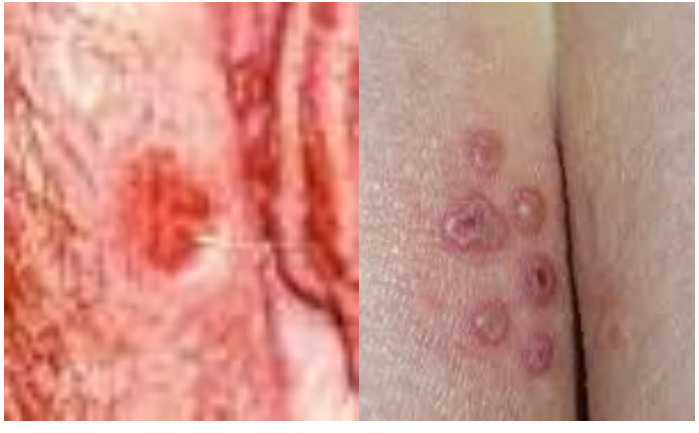
- Baby boy born in early 2023 at 27+2 by emergency C-section due to foetal distress
- Symptoms and signs: runny nose, irritability, jaundice, distended abdomen, petechial rash with bruising across torso, hepatomegaly
- Initial bloods: raised lactate (4), deranged LFTs, low platelets (5), WCC 6.6, CRP 267
- Abdominal X-ray: abnormal gas pattern
- Placenta - ‘unhealthy looking’



What history do we need?

What history do we need?

- Mother was late booker - entered UK at 22 weeks pregnant from rural village in Pakistan
- Booking bloods in early January positive for syphilis; IgM positive, TPPA 1:10240, RPR 1:32
- Mother had a single painless genital sore
- Commenced treatment for syphilis; part-way through at time of delivery



Key differentials

Key differentials

- Syphilis
- Gram negative sepsis
- Group B strep
- HSV
- VZV
- CMV
- Parvovirus
- Rubella
- Toxoplasmosis

Initial impression and management

- Impression: congenital syphilis, sepsis
- Intubated and ventilated
- Started on benzylpenicillin, gentamicin, metronidazole and aciclovir

Which tests do we want?

Which tests do we want?

- Neonatal septic screen:
  - Blood cultures
  - LP for MC&S and virology PCR – not possible
- Blood for BBV screen, syphilis, toxoplasma, rubella, parvovirus, VZV, CMV and HSV serology
- Blood for HSV PCR
- Urine for CMV PCR

Initial lab results

- Syphilis IgM negative, RPR positive at 1:2, TPPA positive at 1:2560
- Parvovirus and VZV IgG positive
- Blood cultures and rubella, CMV, HSV, toxo negative

What does this mean?

Diagnosis of congenital syphilis

- 2015 BASHH guidelines advise the following are indicative of congenital syphilis (based on two samples):
  - EIA IgM positive
  - OR RPR/VDRL or TPPA 4-fold higher than mother's
  - OR RPR/VDRL or TPPA rises 4-fold within 3m of birth
  - OR CSF - positive RPR or VDRL

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Diagnosis of congenital syphilis

- 2015 BASHH guidelines advise the following are indicative of congenital syphilis (based on two samples):
  - EIA IgM positive - No
  - OR RPR/VDRL or TPPA 4-fold higher than mother's – No
  - ~~OR RPR/VDRL or TPPA rises 4-fold within 3m of birth~~
  - ~~OR CSF - positive RPR or VDRL~~

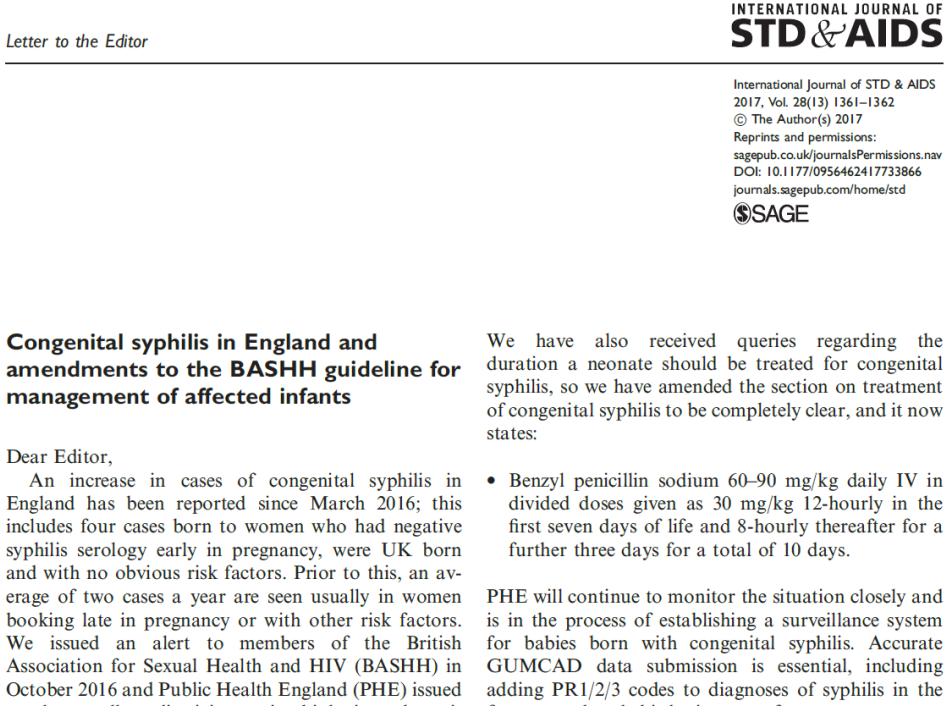
Clinical progress by this point

- Baby now 3 days old and still ventilated
- Still jaundiced, tachycardic, worsening distended bowel with blood in NG tube. Petechial rash and bruising still present, spread to genitals
- CRP falling, worsening lactic acidosis, platelets still low despite multiple transfusions
- Aciclovir and metronidazole stopped; meropenem added for broader Gram negative cover and CNS cover

Do we think this is congenital syphilis?

2017 BASHH alert

- Rising congenital syphilis cases in England
- Reported 4 cases in babies born to women with negative syphilis serology at booking
- In 3 of 4 of these cases, babies had negative IgM and RPR lower than mother
- Hypothesised due to either:
  - infection *in utero* resulted in birth before the development of mature antibody response
  - antibiotics given to baby at birth or mother prior to birth attenuate antibody response
  - prematurity may also confound RPR



Letter to the Editor

INTERNATIONAL JOURNAL OF STD & AIDS

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Congenital syphilis in England and amendments to the BASHH guideline for management of affected infants

Dear Editor,

An increase in cases of congenital syphilis in England has been reported since March 2016; this includes four cases born to women who had negative syphilis serology early in pregnancy, were UK born and with no obvious risk factors. Prior to this, an average of two cases a year are seen usually in women booking late in pregnancy or with other risk factors. We issued an alert to members of the British Association for Sexual Health and HIV (BASHH) in October 2016 and Public Health England (PHE) issued

We have also received queries regarding the duration a neonate should be treated for congenital syphilis, so we have amended the section on treatment of congenital syphilis to be completely clear, and it now states:

- Benzyl penicillin sodium 60–90 mg/kg daily IV in divided doses given as 30 mg/kg 12-hourly in the first seven days of life and 8-hourly thereafter for a further three days for a total of 10 days.

PHE will continue to monitor the situation closely and is in the process of establishing a surveillance system for babies born with congenital syphilis. Accurate GUMCAD data submission is essential, including adding PR1/2/3 codes to diagnoses of syphilis in the

Latest updates to BASHH guidelines

- Advises that baby may be IgM negative with low RPR/VDRL when mother acquires syphilis late in pregnancy
- Emphasis on treponemal PCR of baby in these cases

Further results

- NPA (ideal sample type) and throat swab sent to reference laboratory for treponemal PCR
- Placenta also available so was sent

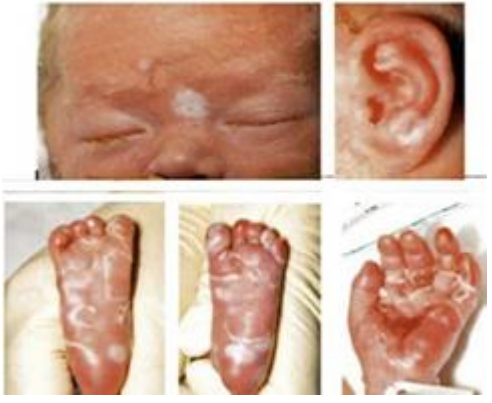
Specimen	Treponemal PCR result	Other results
Nasopharyngeal aspirate	Positive – Ct 37	
Throat swab	Positive – Ct 29	
Placenta	Positive	16S - *T. pallidum*

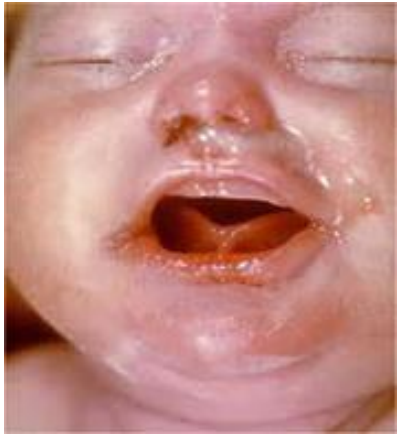
Further management and events

- Remained ventilated; extubation failed
- Continuing anaemia, deranged clotting and thrombocytopenia despite multiple RBC and platelet transfusions - ?NAIT (neonatal alloimmune thrombocytopenia)
- Possible hyposplenism
- Worsening IVH on both left and right side, + midline shift
- Baby sadly passed away at 2 weeks old
- Cause of death listed as congenital syphilis

Congenital syphilis

- 21 cases from 2010-2017; increasing due to rising rates of syphilis in women of childbearing age
- Suspected to be more – 2/3 infants asymptomatic at birth
- Most cases associated with late bookers
- Presentation: ‘odd sepsis’ with low platelets, severe anaemia, high CRP, AKI, raised LFTs, palmo-plantar rash, neurological complications, collapse of bridge of the nose
- Can cause late foetal loss and stillbirth
- Live births usually respond well to benzylpenicillin





Acknowledgments

- Dr. Helen Fifer – Lead Microbiologist, UKHSA Sexually Transmitted Bacteria Reference Unit
- Dr. Jubeyr Ahmed, Virology SpR, University Hospitals Birmingham
- Dr. Mike Kidd, Consultant Virologist, UKHSA Birmingham

Call for presenters

Please contact: Callum Goolden (callum.goolden@lthtr.nhs.uk) if you have a case you would like to present or if you would like to gain some experience chairing meetings.

Requirements:

Presenting trainees must be accompanied by a suitably qualified (FRCPath) colleague to provide clinical oversight.

Please ensure that cases are forwarded to the session chair in advance to facilitate any necessary formatting.