Syphilis case studies

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Syphilis case studies

• Why is it important?
• Case scenarios:
  • ‘Standard’
  • More complicated
DSE: reaching those at high risk

<table>
<thead>
<tr>
<th>Infection</th>
<th>Percentage of all positive results</th>
<th>Percentage of everyone screening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlamydia / Gonorrhoea</td>
<td>83%</td>
<td>10%</td>
</tr>
<tr>
<td>Syphilis</td>
<td>8%</td>
<td>1%</td>
</tr>
<tr>
<td>HIV</td>
<td>6%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Hep B</td>
<td>0.9%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Hep C</td>
<td>0.9%</td>
<td>0.1%</td>
</tr>
<tr>
<td>At least one infection</td>
<td>-</td>
<td>11.5%</td>
</tr>
</tbody>
</table>

More cases...

- Brighton MSM
- Syphilis incidence is increasing:
  - 8.9/1000
  - 22.8/1000 from November 2013

Poster 49, IUSTI Malta 2014
Case 1

- 28 y.o. male
- Urethral discharge
- Last sexual intercourse
  - 7/7 RFP: VI C-
  - 10/7 CMP: RAI C-
- Last 3/12: no other partners
- No fisting; no IVDU; chems: meph, snorts weekly

Case 1

- HIV+
  - dx 2008
  - VL<40 on Atripla
  - Fully vaccinated Hep B (sAb>1000 in 2014)
- Previous urethral GC
- DH: Atripla
- NKDA
- OE: clear urethral discharge; otherwise NAD

What investigations do you do?
Case 1: Investigations

- From U/R/T
  - GC/CT NAAT
  - GC culture
- Blood:
  - Syphilis serology
  - HCV Ab
- Urethral microscopy
  - 20 pus cells per field
  - No GNIDC

Case 1: Management

- Imp: NSU – 1/52 doxycycline 100mg BD PO
- Results:
  - EIA+ TPPA+ RPR 1:2
  - WHAT DOES THAT MEAN?
  - WHAT DO YOU DO?
Case 1: Management

1. Is this syphilis?
2. What stage is it?
3. Is there any neurological involvement?
4. What is the treatment?

Stage?

History and examination

- Symptoms of early syphilis
- Details of previous treatment
- (place of treatment, diagnosis made, treatment, RPR at discharge)
- In early infection
  - examination of the genitals, skin, mucosal surfaces and lymph nodes for signs of primary and secondary syphilis.
- In late and congenital syphilis a thorough clinical examination
  - a full systems review including skin and mucosal surfaces, lymph nodes, cardiovascular and neurological systems

BASHH syphilis guidelines 2008
Neurological?

Neurological involvement can be at any stage (Marra, 2009)

Table 1. Clinical classification of neurosyphilis

<table>
<thead>
<tr>
<th>Form</th>
<th>Manifestations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early neurosyphilis</td>
<td>Affects meninges, CSF, and blood vessels, Seen weeks, months, to a few years</td>
</tr>
<tr>
<td>Neurosyphilis</td>
<td>after initial infection.</td>
</tr>
<tr>
<td>Asymptomatic neurosyphilis</td>
<td>Persistent, but asymptomatic meningitis defined by CSF abnormalities, which</td>
</tr>
<tr>
<td></td>
<td>may or may not include identification of organisms in CSF. This form of</td>
</tr>
<tr>
<td></td>
<td>neurosyphilis is treated to prevent development of symptomatic neurosyphilis.</td>
</tr>
<tr>
<td>Syphilitic meninges</td>
<td>Meningitis, fever, cranial nerve pareses. Focal areas of meningitis may form</td>
</tr>
<tr>
<td></td>
<td>a purpura, which is a space-occupying lesion contiguous with the user.</td>
</tr>
<tr>
<td></td>
<td>Abnormalities of cranial nerves II, III, IV, VI, VII, and VIII may be seen.</td>
</tr>
<tr>
<td>Syphilitic meningoencephalitis</td>
<td>Meningitis with stroke, usually in the middle-cerebral artery distribution,</td>
</tr>
<tr>
<td></td>
<td>but can uncommonly affect the spinal cord.</td>
</tr>
<tr>
<td>Late neurosyphilis</td>
<td>Affects brain and spinal cord parenchyma. Occurs years to decades after</td>
</tr>
<tr>
<td></td>
<td>initial infection.</td>
</tr>
<tr>
<td>Dementia paralytica or general</td>
<td>Rapidly progressive dementia with personality changes.</td>
</tr>
<tr>
<td>paralysis of the insane</td>
<td></td>
</tr>
<tr>
<td>Vascular dementia</td>
<td>Spinal cord disorder affecting the posterior column with sensory ataxia and</td>
</tr>
<tr>
<td></td>
<td>bowel and bladder dysfunction. Argyll-Robertson pupils and optic atrophy may</td>
</tr>
<tr>
<td></td>
<td>be present.</td>
</tr>
</tbody>
</table>

CSF—cerebrospinal fluid

Neurological?

When evaluating possible neurological involvement a lumbar puncture is indicated in those with neurological symptoms/signs or those who have failed therapy.

Consideration should be given to neurological imaging first.

BASHH syphilis guidelines 2008
Case 1: Management

1. Is this syphilis?
2. What stage is it?
3. Is there any neurological involvement?
4. What is the treatment?

Case 1A: management

- No signs/symptoms
- Previous syphilis
  - Treated AKC, 6/12 ago – early latent
  - IM Benzathine penicillin
  - Latest RPR from them RPR 1:4 (6 weeks ago)
Case 1B: management

- No signs/symptoms

- No previous syphilis
  - Last serology, routine HIV bloods 16/12 ago
  - Syphilis EIA negative

Case 1B: management

- Early latent syphilis

- Send repeat serology: EIA+ TPPA+ RPR 1:4

- Offer IM Benzathine penicillin 2.4MU stat
  - Declines injections

- Doxycycline 100mg BD 14/7
Syphilis management in HIV

- HIV+
  - Treat as appropriate for stage of infection
  - That is, same regimens as for HIV-

  (BASHH guidelines 2008)

- …there may be a slight increased risk of serologic treatment failures...
- It is suggested patients be followed more closely
  - Clinically
  - Serologically

Case 1C: management

- Rash over torso 1 week
- No neurology
- No previous syphilis
  - Last serology, routine HIV bloods 4/12 ago
  - Syphilis EIA negative
Case 1C: management

- Secondary syphilis
- Send repeat serology: EIA+ TPPA+ RPR 1:8
- IM Benzathine penicillin 2.4MU stat

Case 1D: management

- Left sided hearing loss 2 weeks
- No other signs or symptoms
- Decreased acuity left ear
- Can’t find a tuning fork
- No previous syphilis
  - Last serology, routine HIV bloods 4/12 ago
  - Syphilis EIA negative
**Case 1D: management**

- CT head: NAD
- Audiometry: not able to be done
- LP – CSF results
  - 25 WCC/mm$^3$
  - RPR+

- Is this neurosyphilis?

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**Case 1D: management**

- Procaine penicillin 1.8-2.4MU IM OD + Probenecid 500mg PO QDS for 14/7

- Steroids are recommended when there is neurological or cardiovascular involvement

- Prednisolone 40-60mg OD 3/7
Case 1D: management

- Criteria?
  - ‘A positive CSF VDRL/RPR is diagnostic of neurosyphilis’ (in absence of blood contamination)
  - But a negative CSF VDRL/RPR doesn’t exclude it
  - A negative treponemal test EXCLUDES neurosyphilis
  - But a positive treponemal test lacks sensitivity
  - Most ‘symptomatic neurosyphilis’ have WCC >5

- But what do you do with CSFs which aren’t barn-door?
  e.g.
  TPPA+ RPR- WCC 4 cells/mm³
  - Give neurosyphilis treatment?
  - If so, what treatment?
  - What do you tell the patient?
  - Do you give steroids?
Case 1: Management

1. Is this syphilis?
2. What stage is it?
3. Is there any neurological involvement?
4. What is the treatment?

Case 2

- 45 y.o. female
- Asymptomatic
  - referred from TOP service with positive syphilis serology
- Last sexual intercourse
  - 2/52 RMP: VI C-
  - Last 3/12: no other partners
- DH: nil
- NKDA
- No alcohol/drugs
- Born Guyana
Case 2

- Serology at TOP
  - EIA+
  - TPPA+
  - RPR 1:2
- What's your differential diagnosis

Case 2: differential diagnosis

- What's your differential diagnosis?
  - Syphilis
    - ??Congenital
    - Stage?
    - Treated/untreated?
  - Endemic treponematosis
    - Yaws
- What do you do?
Case 2: Management

1. Is this syphilis?
   • Take history
   • Review notes
   • Repeat serology

2. What stage is it?
   • Examine patient

3. Is there any neurological involvement?
   • Take history
   • Examine patient

4. What is the treatment?

Case 2a: management

• Examination normal
• Repeat serology: (EIA+ TPPA+) RPR positive (neat)
• Last RPR 1:2 (2013) at C&W
Case 2b: management

- Examination normal
- Repeat serology: (EIA+ TPPA+) RPR 1:2
- No previous history of syphilis or treponematosis
- Never previously tested for syphilis
- RMP: syphilis serology negative

Case 2b: management

- Late latent syphilis (vs congenital) vs Yaws
- May never know which...
- May treat for late latent syphilis
  - CXR? – not in 2015 guidance
  - PN?
    ‘Individuals with late latent syphilis are usually unable to transmit the infection to sexual partners’
- Which treatment?
  - IM Benzathine penicillin 2.4 MU weekly x3
  - PO Doxycycline 100mg BD 28/7
Case 3

- 18 y.o. female
- Sent from antenatal clinic with positive syphilis serology
- 1st pregnancy 17/40
- EIA+ TPPA+ RPR 1:8
- Asymptomatic
- OE NAD
- Repeat serology: EIA+ TPPA+ RPR 1:8
- Last screen 1 year ago: EIA-

Early latent syphilis

In pregnancy:
- T1 and T2: IM Benzathine penicillin 2.4 MU, single dose
- T3: IM Benzathine penicillin 2.4MU
  - Give 2nd dose 1 week later
- Alert Paediatrician

PN:
- RMP:
  - Painless ulcer, penis
  - EIA+ TPPA+ RPR 1:128
Case 3

- Early latent syphilis

- In pregnancy:
  - T1 and T2: IM Benzathine penicillin 2.4 MU, single dose
  - T3: IM Benzathine penicillin 2.4MU
    - Give 2nd dose 1 week later

- Alert Paediatrician – syphilis birth plan

- PN:
  - RMP:
    - Painless ulcer, penis
    - EIA+ TPPA+ RPR 1:128

Lab evidence of congenital syphilis

- Serological tests should be done
  - on infant’s blood
  - NOT cord blood

- IgG may be positive
  - Due to passive transfer of maternal antibodies
  - Whether or not the infant is infected
  - Usually negative by 6 months
Diagnosis of CS

- See Kaufman criteria in Kingston et al. (2015)
- DGM/PCR of exudates: lesion/fluid
- Serology (infant’s blood, not cord blood)
  - EIA IgM positive and/or
  - RPR x4 above maternal titre and/or
  - TPPA x4 above maternal titre

Lab evidence of congenital syphilis

Further investigations may be required

- Dark field microscopy from early congenital syphilis lesion/exudates
- Blood: FBC, LFT, U&E
- CSF: cells, protein, syphilis serology
- X-ray long bones
Lab evidence of congenital syphilis

- A negative IgM test should be repeated – 4, 8 and 12 weeks as the IgM response may be delayed or suppressed

- Serological tests can be negative in infants infected in late pregnancy
Congenital syphilis

• How common is it?

• UK
• Feb 2010 – Sep 2012
• 15 confirmed: 1 possible

• CS incidence below WHO threshold for elimination
  (<0.5/1000 live births)

P3 IUSTI 2014 Simms et al

Urethritis

• Causes
  • STI
  • Non-STI
Urethritis: STI causes

- Gonorrhoea
- NGU
  - Chlamydia trachomatis
  - Mycoplasma genitalium
  - (Ureaplasma urealyticum)
- TV
- HSV
- Meatal wart
- Meatal chancre

Urethritis: non-STI causes

- UTI
- Bacterial prostatitis
- Urethral stricture
- Phimosis
- Steven-Johnson syndrome
Urethritis: investigations

• Microscopy
  • GNID
  • PML>5 /field

• Laboratory
  • BACTERIAL:
    • CT-GC NAAT
    • GC-culture
    • MG NAAT
    • MSU
  • VIRAL: HSV
  • PROTOZOAL: TV-culture

Scrotal swelling

• Painless

• Tender
Scrotal swelling: painless

- Epididymal cysts
- Hydrocoele
- Varicocele
- Hernia
- Testicular tumour
- TB
- Gumma

Scrotal swelling: tender

- Torsion
- Orchitis
- Epididymitis
- Tumour of testis +- haemorrhage
  - Seminoma/teratoma
- Trauma
- Strangulated hernia