

# The rash of secondary syphilis

The numerous manifestations of syphilis are becoming a regular clinical presentation at Melbourne Sexual Health Centre

*The causative organism of syphilis is a spirochaete, *Treponema pallidum*.<sup>1,2,3</sup> Syphilis as a disease can be classified into three stages – primary (1<sup>o</sup>), secondary (2<sup>o</sup>) and tertiary (3<sup>o</sup>).<sup>4</sup> The infectious period of untreated syphilis is the first 12 months and possibly up to 24 months of acquiring the infection.<sup>3</sup> There is a latent period where the individual is non infectious, which may persist for decades.<sup>1,2,3</sup>*

## PRESENTATION

A 40-year-old gay male who recently arrived from Fiji attended for review of a rash. The rash was primarily located on his arms and hands. The client first noticed the rash on his hands one week before the consultation it then progressed from his arms to his torso. He had a past history of psoriasis and eczema. His last sexual contact occurred two weeks before presenting where he had receptive and insertive oral sex with a casual male sexual partner in Australia. The last episode of unprotected anal intercourse (receptive) was 2 months ago with a casual male sexual partner in Australia. No new medications had been recently commenced nor had there been any changes in use of hygiene products such as body wash or laundry detergents. This was his first sexual health consultation and first HIV test despite being sexually active with men and involved in the gay community for approximately 20 years. He did not have any other signs or symptoms of syphilis including chancre, alopecia, or condyloma lata.<sup>4</sup> There was no history of surgery overseas or intravenous drug use.

## EXAMINATION

The client presented with an obvious maculopapular rash on his palms and arms. There was no rash on the soles of his feet. The lesions were flat and dry and the client described some pruritus. Observation of the rash on the torso was difficult due to the extent of skin affected by psoriasis. There was no history of recent headaches, vision disturbances or other sensory changes. The oral and genital exam revealed no evidence of chancres. There was no lymph node enlargement or tenderness.



Clinical photos courtesy of Melbourne Sexual Health

**Syphilis is detected through a variety of tests<sup>5</sup>**

- Microscopy- Dark Ground Investigation (DGI)
- Microscopy- Polymerase Chain Reaction (PCR)
- Serology: Serological testing for syphilis consists of non-specific (non-treponemal) tests and specific (treponemal) tests

## INVESTIGATIONS

Opportunistic screening for asymptomatic infections included anal swabs for Chlamydia (PCR) and gonorrhoea (culture), a throat swab for gonorrhoea (culture) and first pass urine for Chlamydia (PCR). Serological investigations included HIV antibody test, syphilis serology, and hepatitis A and B antibody serology to check immune status. The client was willing to have a polymerase chain reaction (PCR) swab for syphilis of the macular papular rash after breaking the surface of the skin.



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**"SYPHILIS IS A  
TREATABLE INFECTION  
AND CURABLE WITH  
ADEQUATE THERAPY IF  
PROVIDED BEFORE  
ADVANCED DISEASE  
DEVELOPS"<sup>2</sup>**

Thanks to Tim Read, Melanie Bissessor, Cathy Watson, Graeme Kane, Alison Bean Hodges, Vanessa Hamilton, , Karen Bulter and Dot Henning, Rosey Cummings.

**The clients syphilis serology results**

Serum RPR	R512
TPPA	Reactive
IgM-EIA	Reactive
EIA Total antibody	Reactive

**What do the RPR dilutions mean? E.g. R1, R4, R16, R512**

The process is called macroscopic agglutination, the sample is diluted down to a point when no agglutination is visible. The saline dilutions are in multiples of 4.

A high value such as R 512 indicates the number of dilutions it takes to cease registering a reactive test for this blood sample

RPR 512 means the serum is diluted 128 times

The greater the numerical value, the more strongly positive the serology

## DIAGNOSIS AND TREATMENT

The client was diagnosed with Secondary Syphilis on the day and treated with Benzathine Penicillin 1.8g stat by intramuscular injection. Differential diagnosis include contact irritation, pityriasis rosea, guttate psoriasis, lichen planus, and exanthemous drug viral eruptions.<sup>6,7</sup> After the injection the possibility of a Jarisch Herxheimer reaction was discussed and he was advised to take panadol as required if he experienced any symptoms in the 24 hours after treatment.<sup>6</sup> We discussed how to contact previous sexual partners using an anonymous internet based SMS service ([www.dramadownunder.com](http://www.dramadownunder.com)). He agreed to contact all partners within a six month time period. He was encouraged to have no sexual contact until the rash resolved. Repeat syphilis and HIV serology in 3 months was indicated to access an adequate response to treatment (a four fold drop in RPR from 512). Subsequently his HIV and other STI results were negative. The PCR of the broken skin of the rash was positive for treponema pallidum DNA.

## JARISCH-HERXHEIMER REACTION (JHR)

Following treatment of syphilis with penicillin, 50-80% of clients will experience JHR complication usually within a day of treatment.<sup>2</sup> The characteristics of JHR include fever and an exacerbation of existing lesions. It is self-limiting and resolves within 24 hrs.<sup>6</sup> The cause of JHR is not completely understood. Patients undergoing treatment of syphilis should be made aware that reactions may develop within 4 hours post treatment, worsening at 6-8 hrs but resolving within 24 hours.<sup>6,7</sup> It is important to inform patients that if JHR does not resolve within 24 hours that they need to seek medical attention so as to distinguish between JHR and a hypersensitivity reaction. JHR is not a sign of penicillin allergy.<sup>6,7</sup>



Clinical photos courtesy of MSHC

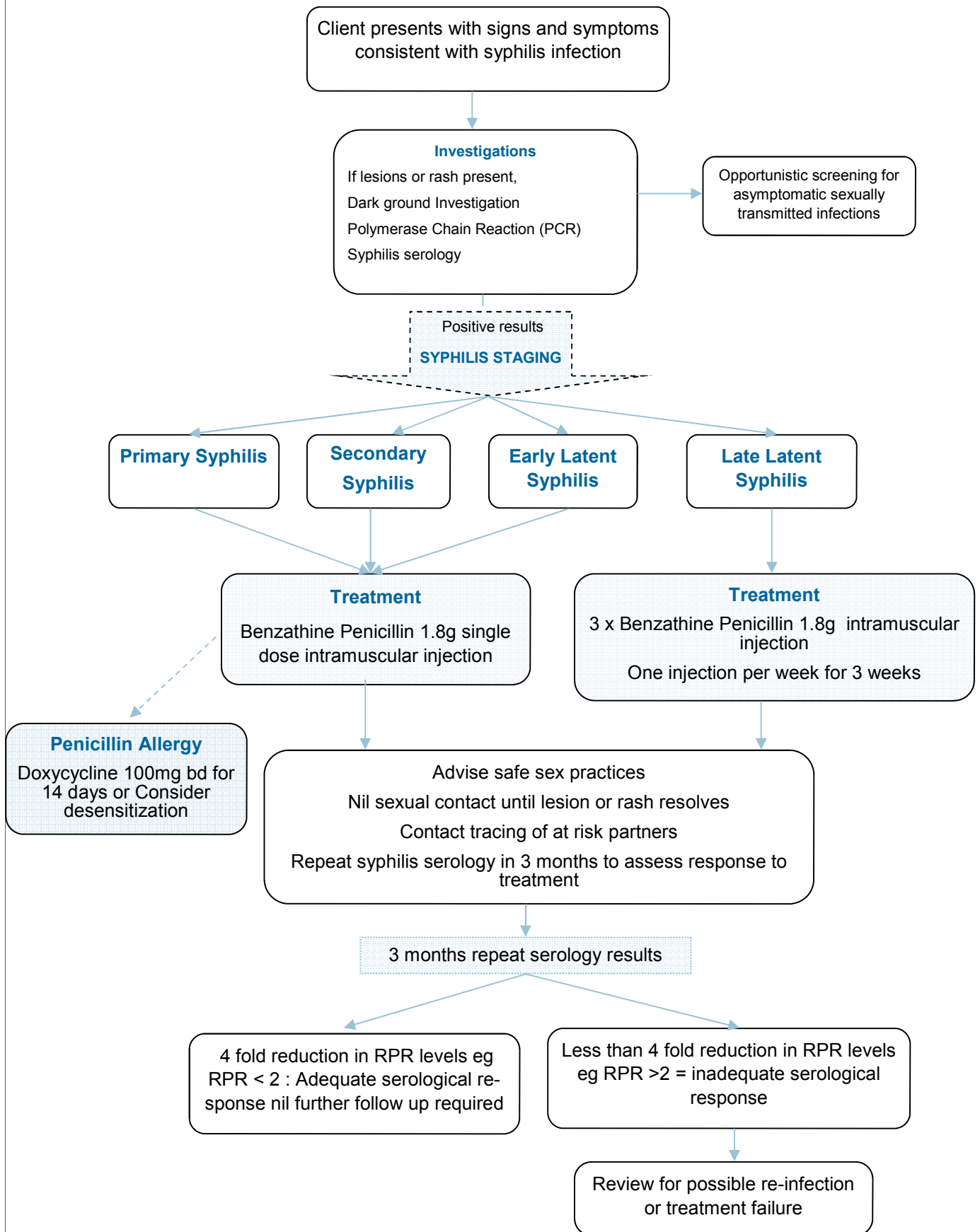
### Summary of important points<sup>1,2,4</sup>

- **Suspect syphilis in gay men who present with a rash**
- **The rash of secondary syphilis can appear six weeks to six months after the primary lesion**
- **In secondary syphilis the maculopapular rash may be transient or last for many weeks**
- **The rash is infectious**

### References

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## CLINICAL ALGORITHM



## Syphilis Stage Classification <sup>2,3,6,7</sup>

Syphilis has highly variable clinical symptoms and consequences.

Classification of stage depends on symptoms, how long the client has had syphilis and history of past treatment

Primary	Secondary	Early and late latent	Late (tertiary)	Past adequately treated
<p><b>Symptoms</b></p> <p>Usually painless penile, anal, oral or vaginal Chancres, can be asymptomatic</p>	<p><b>Symptoms</b></p> <p>Generalised body rash Hands, feet, chest Lymph enlargement Various manifestation condyloma lata, alopecia</p>	<p><b>Symptoms</b></p> <p>No clinical symptoms or signs Past history of negative serology (12-24 months ago)</p>	<p><b>Symptoms</b></p> <p>Can affect body organs Neuro syphilis CVS Syphilis Late Benign Syphilis</p>	<p><b>Symptoms</b></p> <p>No clinical signs Positive serology</p>
<p><b>Testing</b></p> <p>Dark field investigation and or PCR swab of chancre Serology</p>	<p><b>Testing</b></p> <p>Dark field Investigation and or PCR if lesions present Serology</p>	<p><b>Testing</b></p> <p>Serology</p>	<p><b>Testing</b></p> <p>Serology</p>	<p><b>Testing</b></p> <p>Serology</p>
<p><b>Serology results</b></p> <p>May be negative Usually reactive 6 weeks after exposure</p>	<p><b>Serology results</b></p> <p>Strong positive serology</p>	<p><b>Serology results</b></p> <p>Positive serology (low RPR) Where history of past treatment, RPR may be negative or low titre</p>	<p><b>Serology results</b></p> <p>Positive serology Where history of past treatment RPR may be negative or low titre</p>	<p><b>Serology results</b></p> <p>Positive serology RPR may be negative or low titre</p>
<p><b>Treatment</b></p> <p>Benzathine penicillin 1.8gm single dose IMI</p>	<p><b>Treatment</b></p> <p>Benzathine penicillin 1.8gm single dose IMI</p>	<p><b>Treatment</b></p> <p>Benzathine penicillin 1.8gm single dose IMI or Benzathine penicillin 1.8gm per week for 3 weeks</p>	<p><b>Treatment</b></p> <p>Benzathine penicillin 1.8gm per week for 3 weeks</p>	<p><b>Treatment</b></p> <p>Establish if client has been treated in past</p>