

DEFINITION

1. **Syphilis** is an infection caused by the bacterium *Treponema pallidum*. It can be congenital ie transmitted by the mother prior to birth, or acquired, this being most commonly through sexual transmission or, in certain areas of the world, through close contact in childhood, this being termed endemic syphilis. The sexually transmitted adult type of disease, venereal syphilis, shows its effects in three stages, that is, primary (within three to six weeks), secondary (six weeks after the primary lesion heals) and tertiary. This final stage occurs in about 30-40% of people infected and may show a latent period of many years before symptoms become apparent.

CLINICAL MANIFESTATIONS

2. **Congenital syphilis.** The appearance of the condition depends largely on the time at which the fetus is infected, it appearing either as an early, highly infectious acute illness between 2 and 10 weeks after birth or as a non-infectious pattern appearing after 2 years of age. The effects of the latter are most often seen in adolescence with interstitial keratitis of the eyes, painless synovitis of the knees, eighth nerve deafness, optic atrophy and nerve palsies. The teeth have a very characteristic appearance with notching and general poor development. The face is flattened in appearance and the whole skeleton is underdeveloped
3. **Endemic syphilis.** In certain parts of the world where standards of sanitation are poor, notably now only the semi-nomadic tribes of the Sahara, the disease can be transmitted amongst children between the age of 2 and 10 years. It is characterised by ulcers around the mouth (the point of contact with infected drinking vessels) and bone involvement is common. However cardiovascular and neurological complications are extremely rare.
4. **Venereal syphilis.** The infective agent penetrates the mucous membrane and within hours is spread throughout the bloodstream. The incubation period for the development of symptoms is usually between 2 and 6 weeks depending on the number of organisms transmitted.
 - 4.1 **PRIMARY SYPHILIS.** The first sign is a small painless papule at the site of contact which ulcerates, the "chancre". The most common site is the prepuce and the glans in the male and the vulva in the female. The lesion may be so small as to be trivial and it is often overlooked.
 - 4.2 Other sites may be involved such as the anal canal, buttocks, cervix, lips and fingers. Local lymph nodes become painlessly enlarged.

- 4.3 **SECONDARY SYPHILIS.** There are many forms which this stage of the illness may take but inevitably there is a **rash**. It is non-irritating, pale red and sometimes so faint as to be barely noticeable. Its distribution is characteristic and covers particularly the palms, soles and face with also the trunk and proximal limbs becoming involved. In warm moist areas such as the perianal region and the axillae the rash can enlarge into highly infectious pink or grey discs “condylomata lata”. The mucous membranes of the mouth and genitalia may develop arc shaped erosions often termed “snail track ulcers”.
- 4.4 Other, more variable symptoms include headache, fever, muscle and joint pain, low grade meningitis, hepatitis and uveitis. 20% of patients have a recurrence of the infectious episode during the first year after the secondary stage.
- 4.5 All the above lesions disappear leaving no trace behind. The patient is asymptomatic but serological tests are positive for syphilis. This is termed the **latent period** and approximately 60% of patients remain in this state for the rest of their lives. However females during the first few years of this stage may continue to give birth to infected infants.
- 4.6 **TERTIARY SYPHILIS.** This may manifest in many ways, affecting various systems of the body, the most important being the nervous and cardiovascular system. However, the skin, skeleton and viscera may also be involved.
- 4.7 **Cutaneous lesions** are usually single nodules which ulcerate, eventually healing to leave a paper thin scar. The preferred sites are the head, legs, buttocks and upper trunk. They may also occur on the pharynx, nasal septum and palate and are often destructive with perforation of the structures involved. The tongue may be affected, the necrotic patches which are left tending to become malignant.
- 4.8 **Osteoperiostitis** of the long bones causes thickening and deformity producing the appearance of “sabre” tibia in the legs. The skull bones may be involved with multiple osteolytic as may the hard palate and nasal bones. Unlike most other syphilitic lesions bone involvement can produce severe pain.
- 4.9 **Visceral syphilis** is uncommon but those organs which may be affected are the liver, eyes, stomach, lungs, and testis.
- 4.10 **Neurosyphilis** is divided into several categories, namely meningovascular syphilis, spinal syphilis, general paresis and tabes dorsalis.

- 4.11 Meningovascular syphilis occurs when the tissue surrounding the blood vessels to the meninges becomes infiltrated with inflammatory cells leading to fibrosis and therefore impaired blood supply. A gumma may form in the fibrotic areas. The layers of the meninges become thickened and adherent, this process spreading from the base of the brain to cover the whole of the hemispheres and eventually the spinal cord. The symptoms depend on the areas of the brain involved, and include headache, convulsions, limb weakness, cranial nerve palsy, and mental changes such as impaired memory and anxiety. The optic nerve may be involved leading to visual field defects and optic atrophy.
- 4.12 Spinal syphilis which is basically an extension of meningovascular syphilis and is divided into spinal pachymeningitis and meningomyelitis. Its symptoms again depend on the site of the lesion in the spinal cord but in general pain in the affected area is followed by various combinations of wasting and weakness of the muscles with loss of sensation. Flaccid paralysis below the level of the lesion can occur.
- 4.13 General paresis is due to an encephalitic process which causes atrophy of the brain with accompanying hydrocephalus. Mental changes with impaired intellectual efficiency and memory lapses are apparent to others but not the patient. Eventually the dementia progresses to a severe degree and communication may be impossible. Some may be euphoric, anxious, irritable or violent. The physical symptoms are a coarse tremor of the lips, tongue and fingers. Epileptiform fits without loss of consciousness occur in 30%. Transient hemiplegia with aphasia, hemianopia and brief loss of consciousness can also develop. Incoordination produces an abnormal gait.
- 4.14 Tabes dorsalis. This stage develops much later than any of the other types of neurosyphilis, approximately 15-35 years after the initial infection. It affects males four times more frequently than females. The basic process is atrophy of the posterior columns of the spinal cord. The most important of the numerous signs and symptoms include:-
- 4.14.1 'lightning pain' which is an intermittent stabbing pain usually in the leg or foot.
- 4.14.2 'gastric crises' in which severe epigastric pain and vomiting occur with no other cause found.
- 4.14.3 'girdle pains' are an unpleasant tight sensation around the upper abdomen.
- 4.14.4 loss of vibration sense followed by loss of pain sensation and loss of the sense of joint position. The feet feel numb and the sensation of "walking on cotton wool" is often complained of.
- 4.14.5 ataxia produces a wide based gait and a forcible return to the ground of the foot producing a 'foot slap'. Ataxia may also affect the upper body eventually to the extent the patient cannot sit up without support.

- 4.14.6 tendon reflexes are lost, muscles become hypotonic allowing the joints to hyperextend.
- 4.14.7 the autonomic nervous system becomes involved with impotence, urinary incontinence, loss of sensation to the rectum with constipation or incontinence.
- 4.14.8 the pupils are constricted, irregular in shape and off centre. They do not react to light but do react to accommodation. Optic atrophy can lead to blindness.
- 4.14.9 the knee and less often the hip or shoulder may be affected by gross osteoarthritis, possibly due to repeated trauma to an insensitive joint (also called 'Charcot's joint').
- 4.15 **Cardiovascular syphilis.** The main lesions are uncomplicated aortitis, aortic regurgitation, coronary ostial stenosis and aortic aneurysm.
- 4.16 Uncomplicated aortitis is very often asymptomatic and is only diagnosed when calcification of the ascending aorta is seen on X-ray or at post mortem.
- 4.17 Aortic regurgitation occurs when aortitis extends to involve the aortic valve. There is enlargement of the left ventricle, the coronary artery ostia become stenosed and angina ensues. Heart failure may then follow.
- 4.18 Coronary ostial stenosis may occur alone and is distinct from the diffuse involvement of vessels seen in arteriosclerotic coronary artery disease.
- 4.19 Aneurysm may affect all levels of the aorta.
- 4.19.1 aneurysm of the ascending aorta produces signs in the chest such as right heart failure and occasionally a pulsatile mass.
- 4.19.2 It may affect the arch of the aorta producing a different picture including dry cough, hoarseness, dysphagia and in some cases where the sympathetic chain is affected the eye may show the characteristic 'Horner's syndrome' of myosis, enophthalmos and ptosis.
- 4.19.3 aneurysm of the descending aorta may be completely asymptomatic as it can attain large proportions without rupturing. However pressure can give rise to cough, dyspnoea and chest pain.
- 4.19.4 abdominal aortic aneurysm may be asymptomatic but once symptoms appear rupture is imminent, the main symptom being severe pain due to pressure on the vertebrae.

AETIOLOGY

5. The condition is caused by infection with the organism *Treponema pallidum*. Apart from the congenitally acquired type and the childhood endemic type it is transmitted by sexual contact.

CONCLUSION

6. Syphilis is an infection which can affect virtually any system of the body, its effects being seen over a very long period of time.

REFERENCE

Csonka G W. Sexually Transmitted Infections. In: Weatherall D J, Ledingham J G G and Warrell D A (Eds.). Oxford Textbook of Medicine. Oxford. Oxford Medical Pubs. 2nd Ed. 1987. p5.386-5.4.01.

30th December 1992