

Congenital Syphilis: A Mini Review

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Received: June 12, 2019; **Published:** June 27, 2019

Abstract

Congenital syphilis refers to syphilis that is present in utero and at birth and occurs when a child born to a mother with syphilis. Congenital syphilis is a disease which is rapidly decreasing in incidence, yet it still exists; it is so destructive to the young and so easily prevented that its importance can hardly be overestimated. This article aims to review and increase the awareness of congenital syphilis.

Keywords: Congenital Syphilis; Destructive; Prevention; Awareness

Introduction [1,2]

Syphilis is a systemic, sexually transmitted infection caused by bacterial spirochete, *Treponema pallidum*. If not treated adequately in the primary acute stage, it leads to chronicity and many adverse systemic outcomes.

In more than 50% of cases, untreated syphilis in pregnant women can result in numerous adverse outcomes of pregnancy including stillbirths, premature or low birth weight infants, neonatal deaths or both of a congenital syphilitic baby, Congenital Syphilis is an easily preventable and curable disease, which can be eliminated through effective screening of pregnant women for syphilis and adequate treatment of those who are found infected. Congenital syphilis is a disease which is rapidly decreasing in incidence, yet it still exists; it is so destructive to the young and so easily prevented that its importance can hardly be overestimated.

Clinical features

Transplacental infection after 18 week gestation is related to development of immune complement rather than any toxic effect on organism.

Early manifestations [3,4]

- It is manifested within the first two years of life as rhinitis and chronic nasal discharge with maculopapular eruptions and loss of weight.
- Site- the lesions can be seen in spleen, kidney, bones and CNS.

- Signs- bullae, vesicle and superficial desquamation with cracking and scaling of reddened soles and palms, petechiae, mucus patches and condyloma latum.

Late manifestations [5-7]

- After 2 years, interstitial keratitis, vascularization of cornea, 8th nerve deafness, arthropathy, signs of congenital neurosyphilis, gummatous destruction of palate and nasal septum development.
- Saber shins or anterior tibial bowing.
- Higoumenakis sign- irregular thickening of sternoclavicular portion of clavicle.
- Unexplained nerve deafness, retinal and corneal damage can also occur.

Oral manifestations [3,8]

Postrhagadic scarring and syphilitic rhagades

- Postrhagadic scars are linear lesions found around oral and anal orifices (Figure 1).



Figure 1: Postrhagadic scarring.

- They result from diffuse luteic involvement of the skin in these areas from 3rd to 7th week after birth.
- They appear as red or copper colored linear areas covered with a soft crust.
- Rhagades are said to be more frequent on the lower lip.
- Healed syphilitic rhagades appear as ordinary cicatrices.
- The linear scars are radially arranged and perpendicular to the mucocutaneous junction, which are prominent on lower lip near the angle of the mouth.
- Diminished coloring of the lip is evident.

Changes in dentition

- Retarded root resorption of deciduous dentition.
- There may be marring of permanent incisors present in congenital syphilis.
- Hutchinson's triad '
- Hypoplasia of permanent incisors and 1st permanent molars (Figure 2).



Figure 2: Hutchinson's incisors.

- Eight nerve deafness
- Interstitial keratitis
- 6 to 28% of the incisors and 3 to 37 % of the molars have hypoplasia.
- The crown of the first molar in congenital syphilis is irregular and enamel of the occlusal surface and occlusal third of the tooth appears to be arranged in agglomerate mass of globules rather than in well-formed cusp.
- Screw driver shaped incisors - constriction of crown toward incisal edge results in screw driver or peg shaped incisor. In addition incisal edge is usually notched which may be due to the absence of central tubercle or calcification center.
- Rounding of the mesial or distal incisal line angles.
- Spacing between cuspid and incisors.
- Moon molars - in molars, positioning of the cusps toward the central portion of the crown, gives the tooth a bud shaped or shrunken occlusal form called as mulberry molars or moon's molars (Figure 3).



Figure 3: Mulberry molars.

- Affected molars are dirty yellow in color due to hypo calcification.
- Carabelli cusp - prominent accessory mesio-lingual cusp of upper molar (Carabelli cusp).
- Malocclusion and open bite is present.
- In congenital syphilis characteristic shape of the tooth crown can be identified in radiograph.

Jaw bones

- Defective maxilla which is hypoplastic and short with relative mandibular prognathism
- Frontal bossing and saddle nose deformity occurs.

Diagnosis [3,9]

The presence of clinical manifestation together with history of sexually active person should give clue to the diagnosis of acquired syphilis.

Dark field examination microscopy

- It is the most useful method of identifying spirochete in primary acquired and occasionally, secondary syphilis.
- However, it is not reliable for oral lesions since the normal flora contains non-pathogenic *Treponema* which are difficult to distinguish from *T. pallidum*.

Lesion biopsy

- Histopathological examination of suspected lesion stained by silver impregnation technique, is useful particularly when the lesion contains few organisms as may be in case of tertiary lesion
- For oral lesions this technique is of considerable value.

Serological tests: They are divided into categories based on the type of antigen used.

- Treponemal antigen test: Treponemal test is of value in making a confirmatory diagnosis while non-treponemal test is of value in assessing the efficacy of the therapy.
- Non-Treponemal Antigen test:
- Commonly used non-treponemal test is Venereal Disease Research Laboratory (VDRL) and Rapid Plasma Reagin (RPR).
- Both are inexpensive, simple and rapid to perform but require competent experienced laboratory technicians to minimize the risk of false positive or false negative results.
- The treponemal test is very sensitive. It is a specific antibody test.
- Microhemagglutination assay of treponemal pallidum.

Management [4,9]

- Benzathine penicillin -2.4 million units IM
- Aqueous crystalline penicillin.
- Tetracycline hydrochloride 500mg orally 4 times a day for 15 days.
- Erythromycin 500mg by mouth 4 times a day for 15 days.
- *T. pallidum* disappear from infections lesion within 24 hours of instituting therapy.
- Patient should be followed with repeated physical examination and repeated VDRL at 1, 3, 6, 9, 12, 18 and 24 months.
- At the end of 24 months, if VDRL is negative patient is said to be cured.

Prevention [3,10]

- There is no dependable prophylactic measure other than sexual abstinence with infected partner
- The use of prophylactic antibiotic locally is beneficial in pregnant women suspected to exposure
- Subjecting pregnant women to antenatal and postnatal checkup.

Conclusion

All pregnant women should be tested for syphilis and pregnancy. Women at high risk for acquiring syphilis should be retested at the third trimester and at delivery. Penicillin is the only antibiotic proven to be affective in the management of gestational syphilis. Congenital Syphilis is an easily preventable and curable disease, which can be eliminated through effective screening of pregnant women for syphilis and adequate treatment of those who are found infected.

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Volume 18 Issue 7 July 2019

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