

## Scarlet fever

A 10-year-old boy presented with moderate to high-grade continuous fever and throat pain for the last 4-5 days. He had also developed generalized skin rash two days back. On examination he was ill, febrile (temperature 40°C), toxic, mildly dehydrated and had tender jugulodigastric lymphadenopathy. The whole skin showed diffuse erythema, that was more prominent over face, and multiple tiny, pin head sized, erythematous papular lesions all over the trunk and extremities. Accentuation of skin creases and erythematous punctate lesions were noted over the antecubital fossae (*Fig. 1*). His oropharynx was highly congested and “red strawberry tongue” was very conspicuous (*Fig. 2*). Tonsils were enlarged and edematous. His investigative profile was normal except for polymorphonuclear leukocytosis and high antistreptolysin-O (ASO) titre. Throat swab culture showed growth of *Streptococcus-A* hemolyticus confirming the clinical diagnosis of scarlet fever. Treatment with intramuscular procaine penicillin (4 lac units/d) for 10 days resulted in complete recovery.

Scarlet fever is an acute exanthem caused by any of the three exotoxin (erythrogenic toxin) producing but antigenically unrelated hemolytic strains, types A, B or C, *Streptococci*. Depending upon the previously acquired antitoxic immunity, the patient will develop either scarlet fever, or tonsillitis or cellulitis. Upper respiratory tract is the usual portal of entry. The disease is endemic world over but the full syndrome is uncommon in tropics where sub clinical infection is frequent. Most

cases occur between 1-10 years of age and may occasionally be seen in adults. Initially the tongue has heavy white coating and red swollen papillae appear 2-3 days later giving it a “white strawberry tongue” appearance. By 4-5th day, as the coating is shed, the tongue becomes smooth, bright red, has prominent papillae and appear as “red strawberry tongue” before reverting back to normal. By 2nd day a fine papular, punctate erythematous skin rash, that gives sand paper feel, begins in



*Fig. 1. Accentuation of ante cubital skin creases (Pastia's lines). Note the diffuse punctate erythema.*



*Fig. 2. A typical "red strawberry tongue".*

cephalo-caudal fashion. Accentuation of skin creases with transverse red streaks or Pastia's lines are seen over axillary or antecubital folds. Complications may occur either due to streptococcal toxin (myocarditis), or bacterial invasion (septic arthritis, meningitis, osteomyelitis) or by an allergic reaction (rheumatic fever, glomerulonephritis).

White coated tongue in oral thrush or sublingual tongue that occurs due to decreased salivary flow or tongue movements as in

mouth breathers, or soft food eaters; and beefy red edematous tongue seen in early pellagra may some times be confused with strawberry tongue of scarlet fever but can be clinically differentiated without much difficulty. Kawasaki's disease having features of lingual erythema with prominence of papillae and resembling strawberry tongue, generalized scarlatiniform eruptions, cervical lymphadenopathy and acute febrile illness closely mimics scarlet fever. However, high clinical suspicion, characteristic eventuation of strawberry tongue, culture of Streptococci from pharynx, surgical wounds or cellulitis and a rising ASO titre are diagnostic and will also exclude staphylococcal scarlatina, viral exanthem and drug rash.

Though a single episode of scarlet fever will confer permanent antitoxin immunity, the recurrences are not unusual. This is due the fact that toxin produced by other strains is not neutralized and the bacterial immunity is temporary. Early treatment with penicillin (alternatively erythromycin) could help in prevention of complications.

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