TOXIC SHOCK SYNDROME

E S S A Y
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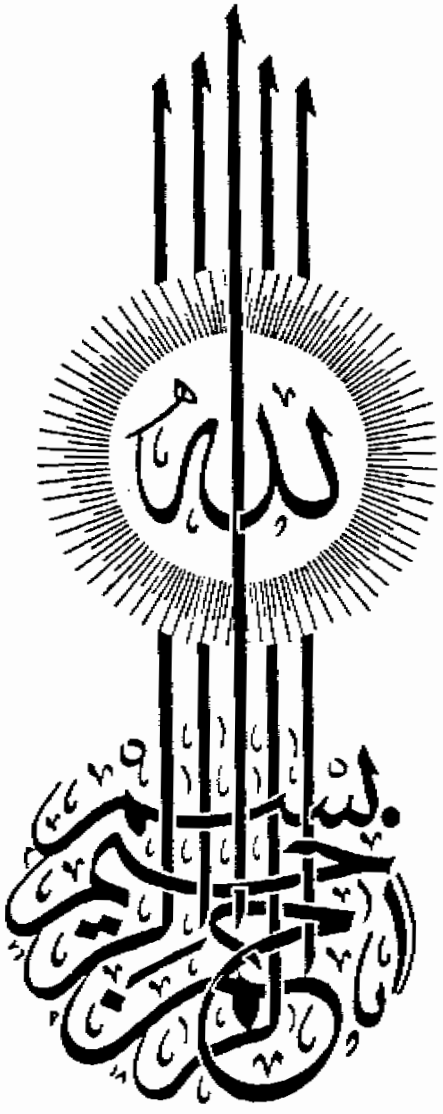

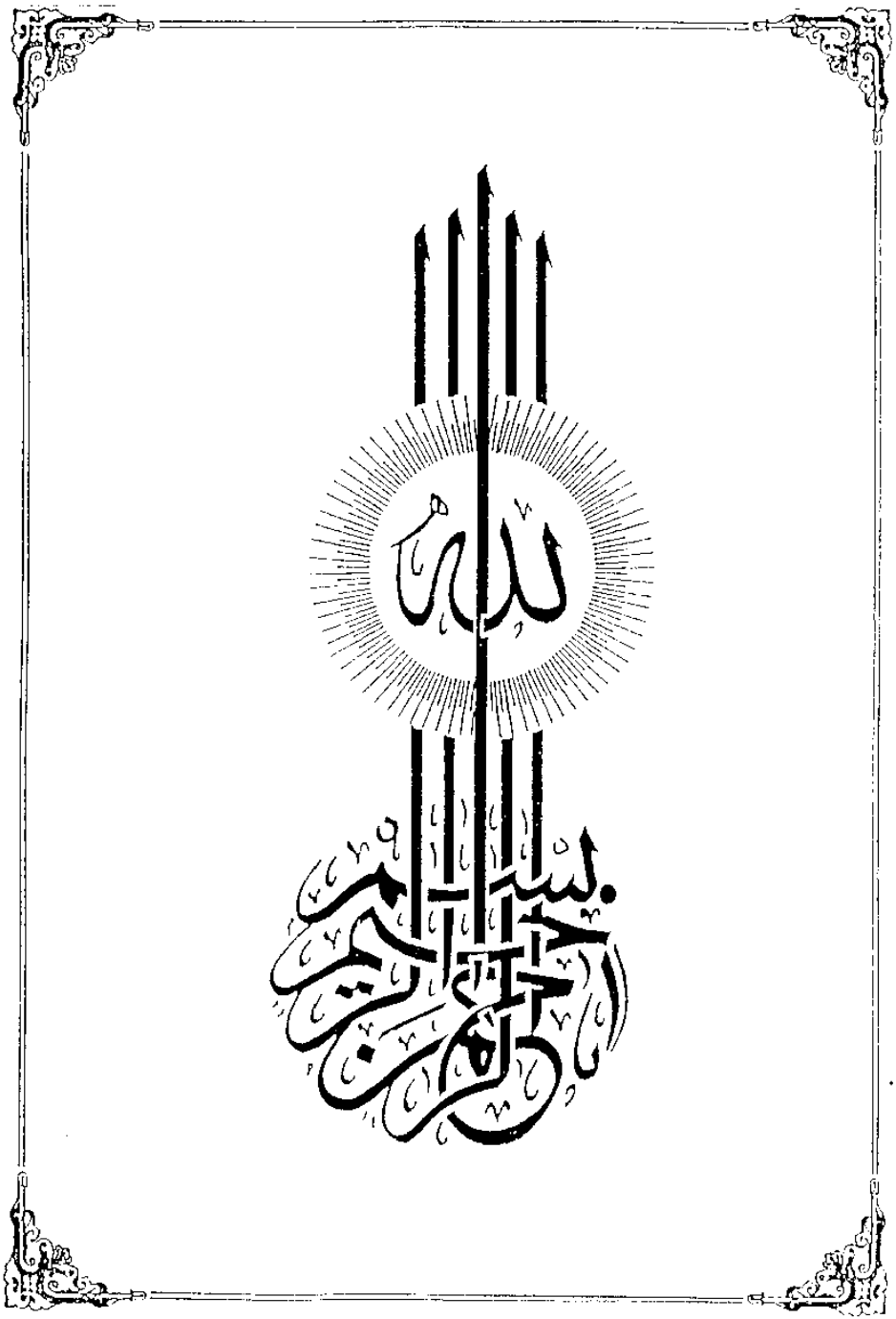

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The term "Toxic Shock Syndrome" (TSS) was introduced in 1978, by James Todd and his associates *(Wolff, 1982)*, to characterise an illness whose signs and symptoms include high fever, hypotension, headache, profound myalgia, profuse vomiting and diarrhea, mucous membrane inflammation, nonfocal neurologic abnormalities, and a polymorphous skin rash and desquamation. Several days after the rash fades, there is patchy superficial desquamation of the facial or truncal skin followed in seven to ten days by full thickness peeling of the finger, palmar,or plantar skin.These clinical manifestations are usually accompanied by laboratory evidence of multiple -organ-system dysfunction *(Tofte and Williams, 1982)*.

Serious complications may include refractory shock, ventricular dysrhythmia, oliguric renal failure. Because there is no diagnostic or confirmatory laboratory test for TSS, diagnosis must be based on the typical constellation of abnormal clinical and laboratory findings *(Tofte and Williams, 1982)*.

Although staphylococcus aureus has been associated with TSS, the exact mechanism by which it mediates TSS is not known. Given the clinical findings in TSS and the fact that most patients do not have disseminated infections, it has been suggested that TSS is mediated by one or more staphylococcal toxins *(Garbe et al., 1985)*.

A strong similarity exists between the TSS and syndromes produced by staphylococcal toxins. Severe diarrhea and circulatory collapse (from dehydration) may occur in staphylococcal food-poisoning due to the ingestion of

preformed staphylococcal enterotoxins. The expanded scalded-skin syndrome can present a scarlet-fever-like appearance with a typical rash that progresses to marked exfoliation and desquamation; it is rarely associated with disseminated infection and usually affects younger children; it is not usually associated with circulatory collapse, nor with many of the other systemic findings.

It has been closely associated with exfoliatin A of phage-group-II related staphylococci, and, to a lesser extent, with the exfoliatin B, which has been isolated from phage-group I staphylococci *(Todd et al., 1978)*.

The similarity between the TSS and other staphylococcal syndromes, the elimination of other possible causes of this syndrome, and the isolation of a common phage-group I-related staphylococcus producing a new epidermal toxin, suggest that the TSS is a new staphylococcal-toxin-related disease *(Todd et al., 1978)*.

The importance of the problem stems not so much from the number of definite cases reported, fewer than 2000, but from the recognition that the syndrome is a rare but often serious illness with a special affinity for young women, one that not only threatens their lives but also raises new considerations about an important aspect of their life-style - the use of tampons during menstruation. The prominence of TSS has been enhanced by wide coverage in the news media. Non menstrual cases including those in women with postpartum infections and in male and female patients of all ages with surgical wounds or other kinds of staphylococcal infections, are being recognized and reported with increasing frequency but have received less publicity ***(Reingold et al., 1982)***.

Of special interest to the practicing physician is the question of diagnosis of TSS and its differentiation from other well- established clinical entities. Is this really a

new syndrome or is it an old ham actor who has seized the opportunity to star in a previously uncelebrated role ? *(Wannamaker, 1982)*.

The aim of this essay is to review the literature of TSS regarding its definition, epidemiology, microbiology, toxicology, clinical picture and differential diagnosis in order to spot light on the different aspects of the disease as well as to have a better knowledge about the recent researches carried out in this field.

REVIEW OF LITERATURE

HISTORICAL REVIEW

TSS was first formally described in 1978 *(Todd et al., 1978)*, though it appears that similar illnesses related to staphylococcal infection have been reported as far back as 1927 *(Stevens,1927)*. Twelve cases of "staphylococcal scarlet fever" recorded from 1927 through 1973 were associated with staphylococcus aureus infections and patients had erythroderma,desquamation,toxicity,and mucous membrane involvement. The patient's ages ranged from 8 to 23 years, with two males and nine females (two with vaginal isolation of staphylococcus aureus). It is quite likely that through the years other cases not associated with obvious staphylococcus aureus infection were unrecognized and unrecorded. How many is a matter of speculation -the answer must await retrospective clinical analysis of hospital records and death

certificates, and toxin detection in staphylococcus aureus strains that have been sequestered through the years *(Todd, 1982)*.

TSS became familiar to the lay public in the summer 1980, when it was described in the news media as a potentially fatal illness affecting previously healthy young women who used tampons during menstruation. In september 1981, results of two case - control epidemiologic studies showed statistically greater use of Rely tampons among women with TSS than among matched control women. On 22 September 1980, Rely tampons were withdrawn from the market by the manufacturer, Procter and Gamble company. The number of cases reported to the centers for disease control (CDC) by onset date decreased to about 50 permonth during 1981, down from a peak of 135 for August 1980. Cases were associated with other tampon brands, and about 10% of cases occured in

male patients and in female patients who were not menstruating *(Wolff, 1982)*.

Public concern and confusion about the relation between tampons and TSS prompted several public agencies and industry groups to ask for an objective evaluation of scientific evidence relating to the syndrome *(Wolff, 1982)*.

In Minnesota, during the 1985 - 1986 season, a wide spread outbreak of influenza (preponderantly type B) occured. At the peak of influenza activity, the Minnesota Department of Health (MDH) learned of two children who died suddenly at home within three days after onset of influenza-like illness. In one child, autopsy findings were suggestive of TSS; the other child was diagnosed as having laryngo-tracheitis, although an autopsy was not performed. The MDH was also informed of a 15-year-old boy who was hospitalized in the Minneapolis - St. Paul Metropolitan area with an