

EDITORIAL : VAN DIE REDAKSIE

STAPHYLOCOCCAL DISEASE

In recent years there has been an increasing incidence of staphylococcal infection. A new entity has arisen in the condition referred to as 'post-antibiotic staphylococcal enteritis'. Epidemics have occurred in hospitals through the indiscriminate use of antibiotics which have removed susceptible staphylococci, leaving hardy resistant strains which cause illness and, in some cases, death. A great many articles have been written about this pathogen—the staphylococcus—and two volumes have just appeared in which the considerable knowledge available on the subject has been combined.^{1,2}

The classification of staphylococci has been a difficult problem. Fermentation tests are unreliable and inconstant. Pigmentation, which has long been regarded as a differential character of the species, is very variable and some degree of pigmentation is common among coagulase-negative strains. Thus the golden colour, held in such veneration by generations of bacteriologists, is of little value. Among other criteria employed for the purpose of classifying staphylococci are the composition of the cell wall, coagulase, antigens, the production of specific toxins, and susceptibility to phages.

Staphylococcus pyogenes has been shown to possess a nucleus, a cell wall, and various intracytoplasmic bodies. The precise nature of the nucleus is still debatable. Attempts have been made to demonstrate the presence of chromosomes and a mitotic cycle as it occurs in higher cells, but refinements of section-cutting, which will allow the electron microscope to resolve the difficulties of internal bacterial structure, may provide more certain information. In the cytoplasm there are a variety of enzymes and various granules that have often been confused with the nucleus. What appear to be mitochondria have also been demonstrated in certain bacteria. The cell wall appears to be a complex product of protein, carbohydrate and lipid, and possibly other substances of morphological and functional importance. The mechanism and site of action of Gram staining is still obscure. Nucleoproteins may be responsible for the Gram effect. The Gram reaction may even result from the process of fixation of the cells.

The distribution of staphylococci in nature has been extensively studied. Omitting animal infections and the rare cases where staphylococci multiply in an article of food,

the only reservoir, for practical purposes, is in man. Pyogenic staphylococci are mainly found in the human nose, whence skin contamination and wound infections arise. Two problems which should be explained are the virulence of the nasal strains and the factors leading to nasal carriage.¹ Surveys are based on the finding of coagulase-positive staphylococci in the anterior nares. There is a high incidence of carriers in children, there is a characteristic curve in relation to age, and there is a rapid increase in the number of carriers from infancy onwards, especially in hospitals where there is a vast pool of potential infection from fomites, dust, and the attendants.

The strains in the noses of infants are seldom the same as those in the mothers. In adults the nasal-carrier state depends on the person himself rather than on the environment, a given person being either a persistent carrier or persistently free. There is evidence that persons with noses colonized by coagulase-negative staphylococci tend to remain free from coagulase-positive infection. Urban civilization is heavily saturated with *Staphylococcus pyogenes* and staphylococci must be regarded as an endemic infection in our species.

Most of the literature relating to virulence deals with the problem indirectly. The factors which determine infectivity for man are still unknown, and animal experiments may be unreliable or misleading. The nature and role of the agents that enable staphylococci to survive and multiply in human tissues are poorly understood. The virulence of the organisms is due to a combination of factors, but much more needs to be known about the tissue reactions which sterilize a subclinical infection.

Those facts which are available concerning staphylococci and the diseases they produce, make fascinating reading. There is still much to be learned about this parasite that has so successfully established near-harmony with the human host. Many research problems await microbiologists, chemists, geneticists, veterinarians, physicians, pathologists, and others.

1. Elek, S. D. (1959): *Staphylococcus pyogenes and its Relation to Disease*. Edinburgh and London: E. & S. Livingstone Ltd.
2. Smith, I. M. (1958): *Staphylococcal Infections*. Chicago: The Year Book Publishers Inc.

KINDERS IN DIE HOSPITAAL

Gedurende die afgelope aantal jare het die hele benadering ten opsigte van die behandeling van kinders in hospitale radikaal verander. Hierdie veranderde benadering word weerspieël in die toenemende aantal geskryfte en toesprake deur kinderartse oor die saak. Gedurende die onlangse derde kongres van die Suid-Afrikaanse Pediatriese Vereniging, wat van 9-11 Oktober 1958 in Pretoria gehou is,

het die Voorsitter, dr. Epstein,¹ byvoorbeeld, sy openingsrede gelewer oor die kwessie van die hospitaalbehandeling van kinders. Ook is daar onlangs 'n memorandum² gepubliseer wat gebaseer is op die bevindinge van 'n subkomitee van die Britse Pediatriese Vereniging waarin hulle bevindings uiteengesit word ten opsigte van die welsyn van kinders in hospitale.

Daar is veral twee faktore wat 'n belangrike rol gespeel het by hierdie nuwe benadering in verband met die hospitaalbehandeling van kinders. Eerstens moet ons noem die veranderde beeld van kindersiektes self. Tot onlangs was sterfte by kinders hoofsaaklik te wyte aan toestande soos pneumonie, tuberkulose en ander infeksietoestande. Vandag egter word die belangstelling van kinderdokters al meer gerig op daardie toestande wat nie noodwendig tot sterfte lei nie, maar wat tog baie ongelukkigheid, ongeskiktheid en ontsteltenis by die kind en by lede van sy familie veroorsaak. Dit word byvoorbeeld duidelik beseft dat baie toestande van chroniese siekte, sowel as toestande van senuweeagtige swakheid en wanaanpassing, 'n liggaamlike basis het. Die onlangse werk van Lanzkowsky³ in one eie land lewer 'n mooi illustrasie van hierdie punt. Lanzkowsky het aangetoon dat pika, of verworde eetlus by kinders, in verband staan met 'n definitiewe ystertekort en dat die toestand van pika verdwyn as die ystertekort deur eenvoudige behandeling met goedkoop preparate van yster behandel word.

'n Ander aspek van die veranderde benadering van die kinderarts ten opsigte van kindersiektes in die algemeen word weerspieël in toenemende toespitsing op voorkomende medisyne. Die voorkoming van die meeste voedingsprobleme en van baie infeksiesiektes by kinders word vandag doelbewus nagestreef. Ook word die voorkoming van ongevalle soos byvoorbeeld ongelukke, nagestreef—met goeie resultate tot dusver.

'n Tweede groot faktor wat die benadering van die probleem van hospitaalbehandeling by kinders beïnvloed het, is die nuwe insig in die ernstige emosionele en sielkundige verstourings wat soms by kinders ontstaan as gevolg van onoordeelkundige verwydering van die kinders van die moeder af en van die huis af.

Die kernpunte van die nuwe benadering ten opsigte van die hele probleem van dié behandeling en welsyn van kinders in die hospitaal en daar buite kan soos volg saamgevat word.

1. Vir kinders vir wie hospitaalbehandeling nie noodsaaklik is nie, moet 'n stelsel van behandeling as dagpasiënte

ontwerp word. Dr. Smallpiece⁴ het onlangs 'n interessante voorlopige verslag gepubliseer van 'n eksperiment wat uitgevoer is in een van die twee pediatriese binne-pasiënteafdelings in Oxford wat gebruik is vir die observasie, ondersoek, en behandeling van kinders op die basis van dagpasiënte. Die volgende is voorbeelde van pasiënte wat met welslae op hierdie manier behandel is: klein babatjies wat nie vooruitgang toon nie, klein babatjies wat vertraging in hulle ontwikkeling toon en wat een of ander verdagte toevalle kry. By ouer kinders is sulke probleme soos voedingsprobleme ondersoek, vertraging by die bereik van die gewone mylpale, spesifieke defekte, enuresis, ens.

2. In die geval van kinders vir wie 'n korter of langer periode van hospitaalbehandeling wel nodig is, moet die volgende oorwegings gedurig in gedagte gehou word.

(a) Voorsiening moet gemaak word vir die moeders van kinders om saam met hulle in die hospitaal te bly en om hulle ten minste gedurende 'n gedeelte van die dag of die aand self te help versorg.

(b) Daar moet onbeperkte fasiliteite wees vir besoeke van naasbestaendes, behalwe gedurende tye wanneer dit werklik nie moontlik is nie as gevolg van oorwegings van behandeling, personeel, ens.

(c) Aandbesoeke moet veral aangemoedig word.

(d) Die werklike duur van die behandeling moet so kort as moontlik gehou word.

Daar is natuurlik baie voor- en nadele wat genoem sou kon word in verband met hierdie nuwe benadering, maar dit lyk tog vir ons dat die voordele belangriker en meer deurslaggewend behoort te wees as die nadele. Die konsekwente toepassing van hierdie benadering sou nie net kon lei tot 'n groter mate van gesondheid en geluk by kinders nie maar ook tot groter welstand van groter kinders en van volwassenes.

1. Epstein, B. (1958): Ongepubliseerde lesing.

2. Sub-komitee van die Britse Pediatriese Vereniging (1958): *Brit. Med. J.*, 1, 166.

3. Lanzkowsky, P. (1958): *S. Afr. T. Geneesk.*, 32, 1114.

4. Smallpiece, V. (1958): *Lancet*, 2, 1366.