

## NOTES

### A NOTE ON NON-GROUP-A STREPTOCOCCI ASSOCIATED WITH HUMAN INFECTION

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Evidence that serious disease may result from infection with streptococci other than those of Lancefield Group A is accumulating. Lancefield (1940-41) has

TABLE 1  
*Non-group-A streptococci isolated from 23 cases of streptococcal infection*

CLINICAL DIAGNOSIS	NO. CASES	AGE	SOURCE OF CULTURE	SEROLOGICAL GROUP	TERMINATION
dermatomyositis	1	adult	heart blood, muscle	B	fatal
post-operative meningitis	1	adult	spinal fluid	B	fatal
otitis media, secondary meningitis	1	child	ear, spinal fluid	B	fatal
otitis media, secondary meningitis	1	child	ear, spinal fluid	B	fatal
meningitis <sup>1</sup>	2	child	spinal fluid	B	recovered
emphysema	1	child	chest fluid	B	recovered
acute peritonitis	1	child	peritoneal fluid	D (Type Lanc-1)	fatal
acute pharyngitis <sup>2</sup>	1	adult	throat	D (Type Lanc-1)	recovered
streptococcal septicemia	1	adult	adrenals, sinuses, abscess	D (Type Lanc-1)	fatal
meningitis	1	child	spinal fluid	D (Type Lanc-1)	fatal
sub-acute bacterial endocarditis <sup>3</sup>	3	adults	blood culture	D (Type Lanc-3)	fatal
sub-acute bacterial endocarditis <sup>3</sup>	1	child	blood culture	D (Type Lanc-3)	?
acute tonsillitis <sup>4</sup>	1	adult	throat	D (Type H69D-5)	recovered
brain abscess <sup>5</sup>	1	child	surgical drainage	F	fatal
ventricular block	1	child	spinal fluid	H	recovered
sinusitis <sup>6</sup>	2	adults	throat, sinus	K	recovered
sinusitis <sup>6</sup>	2	child	throat, sinus	K	recovered
brain abscess, meningitis	1	child	surgical drainage, spinal fluid	K	recovered

<sup>1</sup> Also isolated from blood culture of 1 case.

<sup>2</sup> Present in pure culture at onset, isolated 9 times over period of 7 weeks, also isolated from stool.

<sup>3</sup> Total of 5 cases examined, 1 strain unclassified.

<sup>4</sup> Few *Staphylococcus albus* only other micro-organism isolated.

<sup>5</sup> Rough *Hemophilus influenzae* also isolated.

<sup>6</sup> Predominant micro-organism in 3 cases, all in same family, present in pure culture in 4th case. Etiological significance not clearly established.

reviewed the earlier reports of such infections. More recently, Rantz (1942) Rantz and Kirby (1942) have reported a number of cases attributed to streptococci belonging to serological groups B through K. The cases noted in Table 1 were encountered over a period of two years during the course of a study involving the classification of several thousand strains of hemolytic streptococci.

The strains belonging to groups B and D merit brief attention. The group B

strains gave beta reactions and "double zone" phenomenon on 5.0 per cent horse blood agar. The post-operative meningitis did not respond to sulfanilimide therapy despite maintenance of satisfactory blood levels. The group D strains were classified by precipitation and agglutination of both the protein-like group and the carbohydrate type-specific components. This method will be described in detail elsewhere. Alpha, beta and gamma strains are frequently encountered in this group. The strain isolated from the fatal peritonitis was heat-resistant. Biological characteristics could not be correlated with serological type. The strains isolated from sub-acute bacterial endocarditis gave alpha reactions on 5.0 per cent horse blood agar. In one case, the micro-organism was recovered from the blood cultures over a period of four weeks. Three of the cases proved fatal.

These non-group-A strains represent but a small percentage of the total number of hemolytic streptococci isolated from human infection during these studies. They are of interest in that many of them were associated with fatal infections.

The diversity of clinical diagnoses encountered in this small series is in accord with the observation that non-group-A streptococci are frequently associated with non-respiratory streptococcal infections (Rantz and Kirby (1942)).

#### REFERENCES

- LANCEFIELD, R. C. 1940-41 Specific relationship of cell composition to biological activity of hemolytic streptococci. The Harvey Lectures, Series #36, p. 251-290.
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### DIGESTION OF CASEIN BY STAPHYLOCOCCI ON MILK AGAR CONTAINING SERUM

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Proteolytic zones surrounding the colonies of staphylococci are occasionally seen on the milk agar medium used in this laboratory to determine chromogenesis. These zones are for the most part narrow and indistinct and require more than 24 hours to appear. A marked increase in casein digestion was observed when the medium was enriched with serum. Tests were run with 175 strains of staphylococci of human origin to compare caseinolysis on serum milk agar with the coagulase and fibrinolytic activity of these organisms. The cultures were isolated from various pathologic specimens and from the nose, throat, scurf and urine.

Serum milk agar was prepared by adding 30 ml. of skim milk to 20 ml. of distilled water containing 1.5 g. of agar. The milk and the agar solution were sterilized separately at 121°C. for 10 minutes and were mixed with 50 ml. of serum