

**Brief Communication**

**STREPTOCOCCUS AGALACTIAE INFECTION IN A HAMSTER**

Group B streptococci, or *Str. agalactiae*, was once considered to be of importance only as an infectious agent in mastitis, with little ability to survive outside the udder. However, bacteriological examinations have shown a wider host spectrum for this microorganism. Thus, in humans it has been found to be the cause of infections in the urogenital system, puerperal infections, mastitis, endocarditis and septicaemia. In addition, the microorganism has also been isolated from the mucosae of the nose, throat, air passages, and urogenital system of clinically healthy humans. The reviews by *Røn & Ødegaard* (1975) and *Livoni* (1965) confirm this.

In addition to causing mastitis in cattle, *Str. agalactiae* has also been isolated from infections in other animal species and has been found as mucosal inhabitants of healthy animals. *Grini* (1948) found *Str. agalactiae* in an abscess in a cow, pleuritis in a dog, and in the spleen of a pig, while *George* (1954) isolated the microorganism from multiple abscesses in a wild elephant. In her material, *Holth Haug* (1972) reported *Str. agalactiae* isolation from pericarditis in a pig. *Seelemann* (1954, 1963), with reference to *Edwards* (1933, 1934), reported isolations of *Str. agalactiae* from cervicitis and abortion in horses, abortion in pig, metritis in cow, and from guinea pigs and rabbits. From the publications of *Edwards* (1933, 1934), who was working with non-sodium hippurate-hydrolyzing streptococci, biochemically differentiated into human types, and animal types A, B<sub>1</sub>, B<sub>2</sub>, and *Str. equi*, with serological cross reactions between the animal groups, there does not seem to be sufficient evidence that *Str. agalactiae* was the microorganism involved in the above-mentioned infections. In healthy animals, *Obiger* (1954, 1962) and *Køhler & Mochmann* (1958) reported isolations from the tonsils of cows and pigs.

The present report describes the isolation of *Str. agalactiae* from a case of acute pleuropneumonia and septicaemia in a hamster. The animal was in a state of coma and was killed. At

the post-mortem and histological examinations acute pleuropneumonia and sepsis were diagnosed.

In the bacteriological examination, CAMP-positive streptococci were isolated from the lungs, liver and spleen. The bacteria were beta-haemolytic. Using Lancefield's precipitin test, a positive reaction for group B diagnostic antiserum was observed. No such reaction for groups A, C, G, D, and E antiserum was recorded.

The strain fermented galactose, maltose, dextrose, glycerol, trehalose, salicin and saccharose. Rhamnose, sorbitol, inositol, raffinose, mannitol and lactose were not fermented. Hippurate was hydrolyzed but not aesculin. The fermentation tests were carried out for seven days at 37°C.

Pathogenic tests on mice were performed. Two mice were given 0.5 ml of a 18 hrs. broth culture i.p. After five days one of the mice died, and CAMP-positive streptococci were isolated from the liver, spleen and lungs. The other mouse survived. The test was repeated with three mice being given 0.25 ml of a 18 hrs. broth culture i.p. They were sacrificed after nine days, and all showed multiple abscesses in the livers. This was confirmed by histological examinations. Growth of CAMP-positive streptococci from the livers, lungs and spleens was found on blood-agar plates.

From the literature it seems that most of the human strains of *Str. agalactiae* are lactose negative, while the majority of the animal strains are found to be lactose positive (*Livoni, Røn & Ødegaard, Holth Haug*). In this respect the strain isolated from the hamster was most probably transmitted to the animal from human sources.

*Knut Kummeneje, Truls Nesbakken and Trygve Mikkelsen*

The State Veterinary Laboratory for Northern Norway,  
Harstad, Norway.

#### REFERENCES

- Edwards, P. R.*: Further studies on the differentiation of human and animal strains of hemolytic streptococci. *J. Bact.* 1933, 25, 527—536.
- Edwards, P. R.*: The differentiation of hemolytic streptococci of human and animal origin by group precipitin tests. *J. Bact.* 1934, 27, 527—534.

- George, C. St.*: Streptococcus agalactiae associated with multiple abscesses in a recently captured wild elephant. Ceylon vet. J. 1954, 2, 95—96.
- Grini, O.*: Studies on hemolytic streptococci with special regard to their occurrence in pyogenic processes in domestic animals. A/S Carl Fr. Mortensen, København 1948, 75—81.
- Holth Haug, R.*: Type classification of the group B streptococci by means of Lancefield's precipitin method. Classification of strains of bovine and human origin; isolated during the year 1971 in Norway. Nord. Vet.-Med. 1972, 24, 631—638.
- Køhler, W. & H. Mochmann*: Streptokokkenbefunde der Tonsillen und Antistreptolysintiter bei Schlachtschweinen. (Isolations of streptococci from the tonsils and antistreptolysintitres in slaughter pigs). Zbl. Bakt., I. Abt. Orig. 1958, 173, 58—68.
- Livoni, P.*: Gruppe B-streptokokkinfektioner hos mennesker og hos kvæg. (Infections with group B streptococci in humans and cattle). Medlemsbl. danske Dyrlægeforen. 1965, 48, 537—553.
- Obiger, G.*: Untersuchungen über die in Rindertonsillen vorkommenden Streptokokken. (Examinations of the tonsils of cattle for streptococci). Kieler Milchw.-Forsch.ber. 1954, 6, 631—641.
- Obiger, G.*: Die Streptokokkenflora in den bovinen Tonsillen. (The streptococci of the bovine tonsils). Z. Hyg. Infekt.-Kr. 1962, 148, 405—411.
- Røn, I. & A. Ødegaard*: Gruppe B-streptokokker — Streptococcus agalactiae — hos homo. (Group B streptococci — Streptococcus agalactiae — in humans). T. norske Lægeforen. 1975, 95, 936—938.
- Seelemann, M.*: Biologie der Streptokokken. (The biology of the streptococci). Verlag Hans Carl/Nürnberg. 1954, 118—119.
- Seelemann, M.*: Zur Frage der Pathogenität des Sc. agalactiae (Galtstreptokokkus) und der Gesundheitsschädlichkeit der Milch von mastitiskranken Kühen für den Menschen. (The question of the pathogenicity of Str.-agalactiae (galt-streptococci) for humans, and the health hazard of milk from cattle with mastitis). Mh. Tierheilk. 1963, 15, 199—210.

(Received November 12, 1975).

Reprints may be requested from: Knut Kummeneje, The State Veterinary Laboratory for Northern Norway, 9401 Harstad, Norway.