To answer the question which species of Streptococci were able to cause acute post partum endometritis in the sow, we ascertainment the species and the amount of Streptococci in swabs taken from the mucous of the genital tract. These specimens were taken from sows kept on a farm with increased occurrence of puerperal disorders. This was followed by a bacteriological control of urine.

From 164 isolated strains of Streptococcus 438 strains were further differentiated by biochemical and serological methods in the Center for Streptococcus Research at the Institut für Hygiene der Bundesforschungsanstalt für Milchwirtschaft in Kiel.

Information about pathogenic activities of isolated Streptococci was tried to obtain by the aid of clinical parameters and cytological results of swabs. The swabs and the clinical examination were always carried out at days 1–3 post partum.

Results

- **Vaginae vestibulum**: 27.9% of 201 Streptococcus strains isolated from this part could not be further differentiated. The remaining 72.1% consisted of 23.4% Sc. uberis and 21.6% and Sc. MG. Furthermore, 16.4% belonged to the serological group B. The majority could be classified as Sc. faecalis var. liquifaciens. 17% were identified as Sc. pyogenes humanus C.

- **Vaginae, cervix, uterus**: 21.5% of 297 strains of Streptococcus isolated from the vagina, from the cervical channel and from the post partum uterus could not be clearly differentiated. 29.1% belonged to group D with a predominance of Sc. faecalis and Sc. faecium. 21.5% were rated among group B (Sc. uberis and Sc. MG) and 15.7% among Sc. viridans and Sc. MG. The amount of Streptococci out of the total number of aerob and gram positive bacteria differed from 1–100%.

    In 7 cases pure cultures of a certain species of Streptococcus were found: 1x Sc. pyog. human C. 2x Sc. uberis, 1x Sc. faecium and 1 pure culture Sc. spe.

Testing of potential pathogenic activities of Streptococci showed whether the isolated species of Streptococci were able to cause pathological alterations in the puerperal genital tract only when were tested in the vagina, cervix and uterus a) pure cultures of a certain species of Streptococcus, b) a predominance of Streptococci (> 50% Streptococci out of the total bacterial amount), c) a high number of Streptococcus colonies (> 5.0.56/sgwh) and d) no or only few enterobacteria (<20%).

The above mentioned precautions were found in 31 cases.

Amongst the 6 animals exhibiting a monoinfection of Streptococcus of the puerperal uterus no pathological symptoms could be found in 2 animals having a uterine infection with Sc. faecium resp. Sc. uberis. A peculiar situation represented one sow suffering from a Sc. faecium infection of the uterus. There was severe leucocytosis, considerable exudate both in the cervical channel and in the uterus. The rectal temperature was normal and the general condition of the sow was undisturbed. In this case the infection of the uterus might be due to ascending migration from the chronically infected urinary tract. High numbers of Sc. faecium (15.0 x 109/ml) had been present already in the urine ante partum.

The infection of the genital tract with Sc. pyog. human C in one sow was followed by a light to medium puerperal disorder. Symptoms of severe puerperal disorders were manifest in two sows, causing considerably reduced general condition. The reasons were uterine infections with Sc. faecalis resp. Sc. uberis.

Amongst the 23 cases with a predominance of Streptococcus in the culture (8x Sc. uberis, 1x Sc. serological group B, 4x Sc. faecalis, 2x Sc. faecium, 1x Sc. spe.) no transitory increase of the general degree of illness. The leucocyte and the sediment of the urine were not increased. Only in 6 cases the Streptococcus infections of the genital tract (Sc. serological group C, 8x Sc. pyog. human C, 2x Sc. faecium, Sc. spe.) had caused a medium to severe febrile infection with evident symptoms of endometritis puerperalis. In this group were found 3 sows suffering from chronic urinary tract infection with Streptococci (Sc. pyog. human C, 2x Sc. faecium, Sc. spe.) during pregnancy. The Streptococcus found in the urine and in the puerperal uterus were biochemically and serologically identical.

Discussion and conclusions

Streptococci seem to be important in the etiology and the pathogenesis of acute endometritis puerperalis. Even harmless species usually found in the intestine may ascend post partum into the uterus and multiply there. This does not generally result in endometritis and systemic disease. According to the present investigation in about one third of those infections a clinically manifest disorder will result reducing the sow's performance. The question why a species of Sc. intruding the uterus comes in one case to acute endometritis and does not in an other can't be answered clearly.

Not only certain properties of the bacteria and the dose of infection are of influence but also several endogenous and exogenous factors may interfere and finally determine the future of the infection.

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