Lawsonia intracellularis infection in the large intestines of pigs - DTU Orbit (28/07/2019)

In this study we examined the proliferative enteropathy, caused by the obligate intracellular bacterium Lawsonia intracellularis, in colon of naturally infected pigs, using immunohistochemistry, in situ hybridisation and scanning confocal laser microscopy. When 396 pigs submitted for routine laboratory examination were investigated, large intestinal gross lesions were seen in 93, including 74 cases of L. intracellularis colitis (proliferative enteropathy). Fifty-one pigs without recorded colonic gross lesions revealed L. intracellularis colitis microscopically. In four cases, L. intracellularis was only revealed in colon. Fifty-seven pigs were positive for L. intracellularis in the small intestines only. Thus, the overall prevalence of colonic infection in L. intracellularis-positive animals was as high as 69% (125 out of 182). In comparison, the large intestinal pathogens Brachyspira hydysenteriae and Salmonella enterica were only isolated from 5 and 4 of the 93 cases, respectively. Morphologically, an unforeseen severe involvement of the subepithelial mucosa with multiple L. intracellularis found free and within large macrophages was observed in areas with acute infection. The distribution of whole L. intracellularis organisms was confirmed by in situ hybridisation and scanning confocal laser microscopy. The significance and possible role of subepithelial infection in the proliferative enteropathy is discussed. In conclusion, the study shows that L. intracellularis is a prevalent cause of naturally acquired colitis in pigs.