

Streptococcal infection complications in laryngology and dentistry-review

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Abstract

Oral and pharyngeal biofilm formed by oral bacterial flora, is comprised of over 700 microbial species forming a human-oral microbiome. Most oral microorganisms are non-pathogenic opportunistic commensals to maintain oral health condition. Streptococci, the first microorganisms colonizing oral surfaces and dominant in the human mouth, are the physiological flora of the oral cavity. However, they may spread to other areas of the facial skeleton and cause serious complications inter alia: otitis media, sinusitis, encephalitis, cerebral abscesses, purulent craniofacial infections Streptococci, as a component of the biofilm in dental plaque, are often responsible for dental problems such as: caries, pulpitis, endodontic problems, periapical lesions around teeth roots, periimplantitis and periodontal diseases involving tissues supporting the teeth: bone, ligaments, root cementum, gingivae. There is a strong relationship between caries, root canals biofilm, periodontal diseases and facial skeleton complications, but also a significant impact of dental and periodontal problems on the overall health of patients. Pathogenic factors from oral Streptococci such as extracellular polymeric substances, proteins, nucleic acids and toxins affect the development of inflammation and consequently, various systemic diseases, such as infective endocarditis, atherosclerosis, cardiovascular diseases, diabetes, intestinal inflammation, aspiration pneumonia, autoimmune diseases, as well as bacteraemia.

However, the pathogenicity of Streptococci is still not fully understood and is the subject of further studies. An important problem is the increasing resistance of streptococci to antibiotics as well as their ability to produce virulence factors. They are often treated as commensal bacteria, which delays and worsens further diagnostics and contributes to serious complications.

Literature data indicate that Staphylococci and Streptococci are the most common microorganisms in intracranial complications. The presence of anaerobic bacteria

Publications:

1. Nowicki B, Sledzinska A, Samet A, Nowicki S. Pathogenesis of gestational UTI: Urinary obstruction vs. immune adaptation and microbial virulence. BJOG. 2011 Jan; 118(2):109–12. <https://doi.org/10.1111/j.1471-0528.2010.02706.x> PMID: 21182597
2. Goluszko P, Moseley S, Truong LD, Kaul A, Nowicki S, Nowicki B. Development of experimental model of chronic pyelonephritis with *Escherichia coli* O75:K5:H-bearing Dr fimbriae: mutation in the dra region prevented tubulointerstitial nephritis. J Clin Invest. 1997; 99:1–11.
3. Kostakioti M., Hadjifrangiskou M., Hultgren S.J. Bacterial Biofilms: Development, Dispersal, and Therapeutic Strategies in the Dawn of the Postantibiotic Era. Cold Spring Harb Perspect Med. 2013; 3(4).
4. Zhao L, Gao S, Huan H, Xu X, Zhu X, Yang W, et al. Comparison of virulence factors and expression of specific genes between uropathogenic *Escherichia coli* and avian pathogenic *E. coli* in a murine urinary tract infection model and a chicken challenge model. Microbiology. 2009; 155:1634–44. <https://doi.org/10.1099/mic.0.024869-0> PMID: 19372154

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