



## Evidence of bacterial Biofilms in nasal polyposis

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### Resumen

**Introduction:** The pathogeny of chronic rhinosinusitis with nasal polyposis (CRS/NP) has not been elucidated. Bacterial exotoxins have been implicated in many inflammatory chronic diseases, such as chronic otitis, chronic tonsillitis, cholesteatomas, and more recently CRS/NP. We propose that the bacteria in CRS/NP are not only present in a planktonic state, but also occur in microbial communities as Biofilms. **Objective:** To determine and characterize the presence of Biofilms in CRS/NP. **Methods:** We performed a prospective study in 12 patients undergoing endoscopic sinus surgery for nasal polyposis. Ten patients without CRS/NP who underwent septoplasty were included as a control group. Tissue samples were obtained from the inferior turbinate mucosae. The bacteria were isolated and typified and the material was examined in vitro using a spectrophotometer, and in vivo using optical microscopy and confocal scanning laser microscopy. **Results:** Moderate to high in vitro Biofilm-forming capacity was detected in 9 out of 12 patients with CRS/NP (mean [SD] optical density values of between 0.284 [0.017] and 3.337 [0.029]). The microorganisms isolated were *Staphylococcus* (5 patients), *Streptococcus viridans*, *Pseudomonas aeruginosa*, *Enterococcus faecalis* and *Streptococcus viridans/Corynebacterium*. Biofilms were demonstrated in vivo in 2 patients and no Biofilm structures were evident in any of the controls. **Conclusion:** This study demonstrates the presence of bacterial Biofilms in patients with CRS/NP. This chronic inflammatory factor might contribute to nasal mucosa damage, increased inflammatory cells in tissue, and the subsequent hyperplastic process.

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