Prognostic factors for the presence of biofilms in sinus surgery

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ABSTRACT

INTRODUCTION

Rhinosinusitis is one of the most common reasons for physician office visits, for lost productivity in the work force and for antibiotics prescription in the USA. According to local and national surveys, rhinosinusitis affects 33 million Americans were affected each year, with an estimated cost of $5.78 billion.

Rhinosinusitis is an inflammatory process classified based on the duration of disease as acute (<2 weeks) or chronic (>2 weeks). and chronic rhinosinusitis could be divided in with (CRSsNP) and without nasal polyps (CRSwNP). CRSsNP is characterized by a predominantly neutrophilic inflammation whereas CRSwNP is characterized by a predominantly eosinophilic inflammation.

Biofilm is a group of adherent micro-organisms irreversibly anchored to a surface and encased in a matrix of primarily polysaccharide material, which can account up to 90% of the biofilm. CRSsNP can be very resistant to inflamed sinusoidal cavity.

Bacterial biofilms can be very resistant to inflamed sinusoidal cavity.

Many theories tried to explain pathophysiology of CRS. Nowadays, biofilm is a very important result because there is a better relationship between endoscopic outcome and clinical symptoms.

RESULTS

Bacterial biofilms were found in 8 (50.0 %) of the 16 CRSwNP patients. Patients with biofilms were younger (median, 34 [interquartile range, 25]) vs (median, 34 [interquartile range, 13]) and Lund-Mackay preoperative CT score (median, 6,5 [interquartile range, 3]) vs (median, 15 [interquartile range, 5]) had a median worse in patients with biofilms in ethmoidal mucosal than in patients without biofilms.

Methods

This study is a preliminary report of a prospective cohort study that has been conducted since 2008, in a tertiary care center. The study group consisted of 16 consecutive patients undergoing endoscopic sinus surgery for CRSwNP. Patients with biofilms were younger (median, 34 [interquartile range, 25]) vs (median, 34 [interquartile range, 13]) and Lund-Mackay preoperative CT score (median, 6,5 [interquartile range, 3]) vs (median, 15 [interquartile range, 5]) and Lund-Kennedy preoperative score (median, 84,6 [interquartile range, 26]) vs (median, 139,4 [interquartile range, 56]) had a median worse in patients with biofilms than in patients without biofilms. Bacterial biofilms were more common in patients with unfavorable evolution after surgery for chronic sinusitis and nasal polyposis. This is a very important result because there is a better relationship between endoscopic outcome and clinical symptoms.

The exact relationship of biofilms presence as a cause of a higher prophylactic resistance to otolaryngologists. Despite the fact that all scores in patients with disease-related nasal mucosa were not established yet and this question deserves more research to be elucidated. It is believed that biofilms have a major role in CRSwNP, but some findings in the field demonstrated that biofilms can only play an active role in CRSsNP.

The main limitations of this preliminary report in the small sample size, which is a major limitation. The larger the study the better it is. Although the findings in this study were preliminary, the study perhaps could approach to the aim to show that worse preoperative scores are correlated with biofilms presence.

REFERENCES

2. Psaltis et al. demonstrated that biofilms were captured to evidence biofilms' presence. Analysis for biofilms was performed. All data were considered nonparametric. For all statistical tests p=0.05 was considered statistically significant.
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