

Incidence of Gastroesophageal Reflux Symptoms in Patients with Refractory Chronic Sinusitis Upon Clinical Treatment

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SUMMARY

Introduction:

The chronic rhinosinusitis (CRS) is a pathology that has structural and histological alterations. The association between CRS and the gastroesophageal reflux disease (GERD) has been widely discussed in the last years. For this relationship to be confirmed, it is necessary to find evidences that the patients with CRS present a major incidence of GERD, that the physiopathology of both diseases explains the association between them and that the GERD treatment cures or improves the CRS' symptoms.

Objectives:

To evaluate the incidence of GERD in patients with CRS and a level of improvement of the nasosinusal disease symptoms after treatment with protons pump inhibitors.

Methods:

Retrospective study with 30 patients with CRS refractory to the clinical treatment and/or nasal cavity polypoid pathology with indication of the paranasal sinuses functional endoscopic surgery. We applied a questionnaire for evaluation of the symptomatology and previous treatment for gastroesophageal reflux. The data were submitted to statistical analysis by the Chi-Square test or Fisher's exact test with a significance of 5%.

Results:

Out of the patients with GERD, 33% had an improvement of the CRS' symptomatology with medications for treatment of the gastric pathology.

Conclusion:

It is not possible yet to state that the GER is a factor responsible for the CRS and it must be researched as a cofactor or eliciting factor when there is not other evident etiology. However, there are plausible biological mechanisms for such association.

Keywords:

sinusitis, gastroesophageal reflux, association.

INTRODUCTION

The chronic rhinosinusitis (CRS) consists of a chronic pathology of the nasosinusal mucosa, with signs and symptoms present for more than 12 weeks, and causes structural and histologic alterations both in the nasosinusal mucosa and the subjacent bone.

This disease affects 5-15% of the world population and accounts for 11.6 million of medical consultations per year in the United States (1). It occurs equally among the sexes, races and age groups. Several factors are evidently associated with this condition, such as allergy, asthma, immunodeficiency, aspirin intolerance and diminishment of the ciliary function (2). In the last years, another factor has been related to the CRS - the gastroesophageal reflux (GER).

The GER is an well-known entity by the otorhinolaryngologists; and is related to chronic coughing, dysphonia, dysphagia, globus pharyngeal, laryngospasm, subglottic stenosis, benign and malignant lesions of the vocal cords (3). However, its association with CRS is still a controversial reason, as well as its impact on the diseases therapeutic evolution.

The objective of this study is to evaluate the GER incidence in patients with CRS and the improvement degree of the nasosinusal disease symptoms after the medicated treatment of the gastroesophageal disease.

METHOD

Retrospective clinical study in which 30 patients were evaluated, aged between 11 and 68 years old, in the period from January 2007 to November 2008, in follow up for chronic rhinosinusitis and nasal polyposis at the otorhinolaryngology service of the Clinical Hospital - UFPR.

In our sample group, the patients had been selected for the surgery according to a detailed anamnesis, physical and complementary exams. Patients with clinical history of refractory chronic rhinosinusitis in clinical treatment and those with polypoid pathology of the nasal cavity were included in the study, and all of whom had prescription for functional endoscopic sinus surgery (FESS).

A questionnaire was applied for evaluation of the symptomatology of the group studied, the occurrence of previous clinical treatment of CRS, what medications had been used, level of improvement with such medications, previous nasal surgical treatment, presence of previous diagnosis of the gastroesophageal reflux disease,

medications used for its control, level of improvement of the CRS and GER with such agents and whether the patient had already been submitted to high digestive endoscopy and pH-metry.

This study was approved by the ethics committee in research of the Clinical Hospital - Federal University of Paraná.

The data were submitted to statistical analysis by the Chi-Square method or Fisher's exact test with significance of 5%, and a detailed literature review was carried out about the association of Chronic rhinosinusitis and the gastroesophageal reflux disease.

RESULTS

In our study, the sample group evaluation confirmed an association between chronic rhinosinusitis and the gastroesophageal disease in 40% of the patients. Out of the patients with GER, 33% presented an improvement of the CRS' symptomatology with medications for treatment of the gastric pathology.

As for the symptomatology in the patients in study, both CRS and GER symptoms were found.

As for the use of medications, 100% of the patients had already received prior clinical treatment for CRS, and several forms of treatment were mentioned. The use of Budesonide was reported in 90% of the cases. Other medications were mentioned: Amoxicillin, levofloxacin, prednisone etc. The improvement with clinical treatment was partial in 60% of the patients, total in 23% and there was no improvement in 17% of the cases.

In terms of the prevalence of the CRS and GER between the sexes, 20% of the women presented only CRS, while 33% of the men had this pathology separately. However, 30% of the women had association between CRS and GER, while only 16% of the men had the same association.

DISCUSSION

The association between CRS and GER, as well as the importance of reflux in the CRS clinical and therapeutic history have been discussed in the last years. To confirm this relationship, evidences are necessary that patients with CRS have a higher incidence of GER, that the physiopathology of both diseases justifies the association between them and that the GER treatment cures or improves the CRS' symptoms (4).

This association between CRS and GER was present in 40% of the patients in our study. Other authors also reported this association. DiBAISE and cols verified a prevalence of 81.8% of GER in patients with CRS (5). In a questionnaire applied to the community, 56% of the interviewees reported GER symptoms, 75% nasosinusal symptoms and 45% had both symptoms, which reveals this association is very common (6).

For DiBAISE and cols, 78% of the CRS presented GER's diagnostic criteria, according to the pH-metry of 24 hours (7). In a comparative study between 2 groups, 63% of the patients with CRS had an altered 24-hour pH-metry; in the control group the reflux was diagnosed in the exam only in 18% (8).

According to WONG, adults with complicated GER have a higher level of CRS incidence when compared to a control group (9).

FESS is currently the choice surgical approach for refractory CRS to the clinical treatment. It is effective in 89% of the cases, with improvement of the symptoms at long term for up to 98% (10). The possible factors implied in the therapeutic failure are the inadequate surgical technique, irreversible disease of the mucosa, adhesion, allergy, smoking and GER (11). The GER is proved to be a factor that determines a poor response to FESS (12).

In a study published by DELGAUDIO, the CRS cases refractory to FESS presented a higher amount of reflux episodes up to the upper esophageal sphincter and nasopharynx - with a higher degree of acidity (pH < 5) - than the control group (3).

Three physiological mechanisms could explain the association among the three diseases: the direct effect of acid in the nasal mucosa, a dysfunction of the autonomous nervous system and the presence of *Helicobacter pylori* (HP) (4).

It is known the stomach acid contact with the nasal mucosa results in its edema, with reduction of the mucociliary clearance and obstruction of the sinusal draining ostium. For WONG and cols, the acid reflux is an uncommon event in the nasopharynx (5% of the cases), despite a significant part of the patients with CRS (32%) has an altered pH-metry (1). In a study published by PHIPPS and cols, 63% of the CRS cases presented esophageal reflux and 32% of nasopharynx reflux (13).

Autonomic dysfunction - via vague nerve - plays a remarkable role in the asthma and GER physiology. The increase of the vagal tonus may partly account for the hyper-reactivity of the airways to acid (14). A similar

picture may occur in the nasal cavity and paranasal sinuses.

The importance of *Helicobacter pylori* (HP) is proved in the physiology of acute gastritis, active chronic gastritis, gastric chronic and duodenal ulcers, gastric adenocarcinoma and primary lymphoma of the stomach B-cells (1). The HP has recently been identified in the distal esophagus, teeth, saliva, palatine and adenoid tonsils, and it is not confirmed so far whether its presence would result in some abnormality of such tissues (1). DINIS found the same HP incidence in patients with CRS and control group, in an evaluation carried out through PCR and histology (15). For KIM HYU YEOL, the HP plays a limited role in the CRS pathogenesis (16).

Retrospective studies describe an improvement of 69 to 89% of the nasosinusal symptoms after GER treatment (8, 17). PHIPPS, DiBAISE and cols verified a clinical nasosinusal improvement in 80 to 91% of the cases after treatment with proton pump inhibitors (PPI) In a study by PINCUS and cols, 56% presented improvement and 28% resolution of the nasosinusal symptomatology (19). For DiBAISE, the improvement was discreet after 3 months of PPI treatment and complete symptoms resolution was rare (5). In this study we may observe an improvement of the CRS symptomatology in 33% of the patients treated with proton pump inhibitors.

According to AMIN and cols, it is still not possible to state that the GER is a factor to CRS, and it must be researched as a cofactor or an unchaining factor when there is no other evident etiology. Notwithstanding, there are plausible biologic mechanisms for this association (20).

Our study showed that the GER symptoms are very prevalent in the patients with CRS, but the differential diagnosis of these diseases solely through the clinical picture may be a little difficult, since the atypical manifestations of GER may be similar to the symptoms presented by patients with CRS, and vice-versa, that is, CRS symptoms may simulate atypical manifestations of GER.

Faced with this diagnostic challenge that emerges, and to prevent an overestimation of GER, we suggest the performance of complementary exams, when applicable, such as 24-hour pH-metry, so that the precise diagnosis of GER may be made; in case neither exam is available, the therapeutic test with proton pump inhibitors may be very suggestive of the presence of GER in refractory GER patients.

Moreover, other questionings may still be raised regarding GER: Is it a disease that complicates the pathology already installed? Can it be considered an etiological factor?

Further studies are required so that this and other questions may be clarified.

CONCLUSION

This study suggests there may be an association between GER and CRS, which must be recalled in patients refractory to conventional treatment. However, other studies are required to better clarify the association of these diseases.

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