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ORIGINAL PAPERS

Quality of life after rhinologic surgery

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ABSTRACT

OBJECTIVE: To try to evaluate the efficacy of surgical treatment in chronic maxillary rhinosinusitis in terms of the patient's perception of well being using quality of life questionnaires.

MATERIAL AND METHODS: Sixty adult patients with chronic maxillary rhinosinusitis were prospectively enrolled into a longitudinal, observational study. All patients underwent either radical or functional surgical therapy and were assess pre- and post-therapeutically using Rhinosinusitis Disability Index, Chronic Sinusitis Survey using a Visual Analogue Scale. Each patient had three assessments: before starting the surgical treatment, 3 months and finally 1 year after the surgical treatment.

RESULTS: Statistically significant improvements in QoL were found between baseline and three months follow-up for the total and subscale scores of the Rhinosinusitis Disability Index ($P \leq 0.001$). Significant improvement was found for mean Chronic Sinusitis Survey total scores and the Chronic Sinusitis Survey symptom subscale scores between baseline and three months ($P \leq 0.001$). Also, there were observed important improvements regarding the symptomatology measured using VAS scale. In this regard, there was not found any statistical significant differences between the two groups of patients treated endoscopically or by Caldwell Luc procedure.

CONCLUSIONS: Both endoscopic and external radical treatment of chronic rhinosinusitis significantly improved almost all the parameters of the Chronic Sinusitis Survey and Rhinosinusitis Disability Index ($p < 0.05$), with no significant difference being found between the two groups ($p > 0.05$).

KEYWORDS: quality of life, rhinologic surgery, RSDI score, CSS score

INTRODUCTION

Quality of life (QoL) is a well-recognized outcome measure for assesment of the impact of disease on patients. The results of the quality of life questionnaire must be interpreted with care. A problem with quality of life studies is the clinical relevance of the differences in quality of life scores[1]. The fact that the difference is statistically significant may not be enough.

Speaking about quality of life after rhinologic surgery is rather difficult in a country in which, due to economic problems and people's mentality, this subject was on the last level of medical interests. A long period of time the main objectives of the medical care in Romania were cure rates, number of patients and „performant statistics" for the medical system. Nowadays the things are discussed and assessed in a realistic and correct manner.

Rhinosinusal pathology is one of the most frequent causes of diseases which impairs the quality of life; sometimes patients perceptions find these conditions more important than angina, asthma or chronic pulmonary disease. Clinical studies of rhinosinusitis have traditionally assessed outcomes in terms of physiologic measurements, including rhinometry, CT scans, IgE levels, and complication rates[2]. However, these outcomes do not capture the primary reason patients seek out and evaluate their care - to feel better in terms of their physical, social and work activity, interpersonal relationships, and general psychological well-being.

MATERIAL AND METHODS

Sixty adult patients with chronic maxillary rhinosinusitis, according to consensus guidelines, were prospectively enrolled into a longitudinal, observational study. The patients remained symptomatic after initial medical treatment and were referred either to radical or functional surgical therapy. All patients underwent pre- and post-treatment assessments using Rhinosinusitis Disability Index (RSDI; score range, 0-120) and the Chronic Sinusitis Survey (CSS; score range, 0-120).[3,4] Also for the assessment of the patient's own perception regarding the most frequent symptoms of rhinosinusitis (nasal obstruction, rhinoreea, headache, hyposmia) we used an Visual Analogue Scale (VAS). Each patient had three assessments: before starting the surgical treatment, 3 months and finally 1 year after the surgical treatment.

Radical surgery (Caldwell Luc operation) was chosen in cases of chronic recurrent hyperplasic rhinosinusitis, which could not be treated with other methods such as medical treatment, sinus punctures, endoscopic sinus surgery. In our general rhinosinusitis series the Caldwell- Luc approach was indicated only in 3.5% of the patients.

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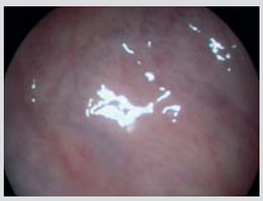
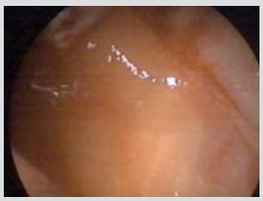
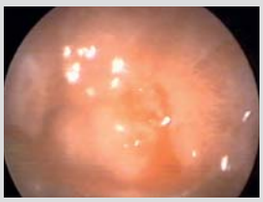
Table 1
Endoscopic features of patients with chronic maxillary sinusitis

Type I mucosal changes – hyperemia, secretions, mild oedema	
Type II changes – type I changes + secretions, oedema, and cystic dilatations	
Type III changes – edematous changes, pseudo-polipoid mucosa, cysts, sero-mucous secretions	
Type IV changes – polyps, hyperplasic mucosa	

There were 30 patients in each group evaluated using the most important symptoms (rhinoreea, headache, nasal obstruction). Baseline disease-specific QoL was assessed by use of RSDI and the CSS. The RSDI is composed of 30 questions in three separate subscales to monitor physical, functional, and emotional status. The CSS is composed of two subscales concerning the impacts of sinonasal symptoms and prescribed medications during the previous eight-week period. Decreases in RSDI scores and increases in CSS scores indicate improvement in QoL outcomes over time.

The patient's indication for surgical treatment (endoscopic or Caldwell Luc) was established using our endoscopic (obtained via maxillary sinusoscopy) (Table 1) and histopathologic score that correlates the macroscopic and anatomopathologic aspects of the mucosal changes in the maxillary sinus[5]. These changes are appreciated endoscopically and the histopathology confirms different features in terms of eosinophils presence, neoformation vessels, fibrosis, density and distribution of the inflammatory infiltrate and intramucosal edema.

Types I and II are reversible with medical treatment or functional endoscopic sinus surgery. Type III changes requires more aggressive endoscopic approaches.

Type IV mucosal changes are irreversible and usually require radical surgical approaches (Caldwell – Luc procedure) or extended radical endoscopic approach.

For choosing the right therapeutic approach, we added to these parameters the CT – scans findings and scores, according to Lund – Mackay score[6].

RESULTS

Preoperatively QoL of the patients was restricted by chronic rhinosinusitis (CRS) in 90% of the cases. Leading symptoms of CRS were nasal obstruction in 95% of the patients and postnasal drip in 90%. Other related symptoms were dry upper respiratory tract syndrome in 70% of the cases, hyposmia in 70%, headache in 65% and asthmatic complaints in 35%.

After the surgical procedure in the endoscopic group, a good QoL was achieved in 86,67% of our patients, no changes in 10 % and deterioration in 3,33 %. Radical external surgery group showed minor differences.

We can not affirm that there are major and important differences in term of perceived QoL between the two groups, but it's obvious that each patient related the things depending on a lot of other factors.

Statistically significant improvements in QoL were found between baseline and three months follow-up for the total and subscale scores of the RSDI ($P \leq 0.001$) (Figure 1).

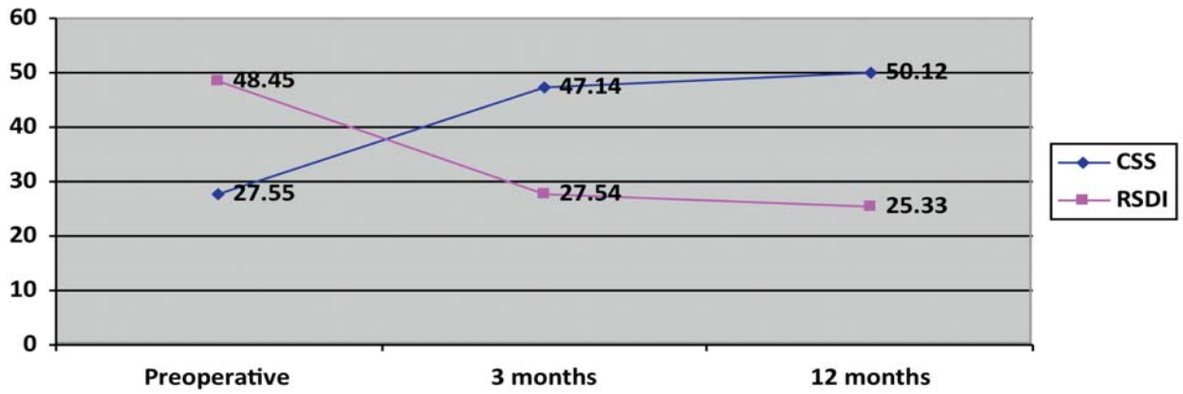


Figure 1 Mean QOL scores for CSS and RSDI. Decreases in RSDI scores and increases in CSS scores indicate improvement in QOL outcomes over time

Table 2
QoL of the patients pre and postoperatively (mesured using visual analogue scale)

Symptoms	Radical surgery (Caldwell Luc procedure)			Endoscopic surgery (antrostomy)		
	Preop.	Postop. 3 month	Postop. 1 year	Preop.	Postop. 3 month	Postop. 1 year
Nasal obstruction	8,73	3,13	2,34	8,61	2,98	2,32
Rhinoreea	8,96	3,78	2,75	9,92	3,54	3,18
Headache	6,86	4,72	4,65	6,14	4,17	3,82
Hyposmia	7,33	4,13	3,41	7,82	4,26	3,81

Table 3
The results regarding the persistence of other complaints impairing QoL after surgery

Symptoms	Radical surgery (Caldwell Luc procedure)	Endoscopic surgery (antrostomy)
Crusting	5 (16,6%)	4 (13,3%)
Scarring	4 (13,3%)	3 (10%)
Recurrence	0	1 (3,3%)

Significant improvement was found for mean CSS total scores and the CSS symptom subscale scores between baseline and three months ($P \leq 0.001$)

Mean scores of the CSS endoscopic surgery subscale did improve between baseline and one year in both groups. Also, there were observed important improvements regarding the symptomatology mesured using VAS scale (Table 2). In this regard, there was not found any statistical significant differences between the two groups of patients treated endoscopically or by Caldwell Luc procedure.

Usually, after the surgery there are still some embarrassing symptoms for the patient, but also for the surgeon. Crusting, excessive scarring leading to impairment of the stoma patency and sometimes the recurrence of the disease are the most important complaints (Table 3).

DISCUSSIONS

Impairment of the quality of life in terms of patient's complaints means, in most of the cases, nasal obstruction, rhinorheea, hyposmia, halitosis, headache, all of them leading to above mentioned dysfunctions of the personal and professional life. Speaking about extended approaches through sinuses to the skull base, orbit and optic nerve means to be face with other possible changes in the perceiving of quality of life of the patient.

The leading complaints within the symptoms profile of patients with sino-nasal diseases are nasal obstruction and nasal drip[5]. Nasal obstruction, primary due to nasal congestion and inflammation, is the main symptom leading to sleep problems, impaired capacity of work, inability of concentration and different complaints due to oral respiration. There are studies which show that nasal obstruction is associated with a rate of insomnia ten times higher than in normal subjects[7]. The nasal airway resistance can be measured by different methods, like rhinomanometry, acoustic rhinometry. However, all these measurements does not always agree with patients perception of nasal obstruction, and its impact upon their day to day life.

Chronic nasal obstruction can lead in time at extranasal symptoms like headache, fatigue, day-time sleepiness, even to obstructive apneea-hipopnea syndrome and thus at a decline of their quality of life[8].

Rhinorrhea is important as parameter of the QoL due to the fact that exposes the patient to embarrassing social and professional situations and determines halitosis or bad smell of the respiration. The impaired sense of smell determines social and personal frustration. Headache implies major problems in the patient's well being starting with the capacity of concentration, professional performances and the ability to satisfy personal hobbies like sports.

Surgery of the nose and sinuses involves changes in the quality of life due to specific stress factors as admission in a hospital, the type of anesthesia, the administration of the medication and the risks of the surgical procedure[9]. It is obvious that all these aspects require a detailed and fair explanation which is part of the preoperatively meetings of the surgeon with his patient.

Another stress factor is related to the expectations of the patient regarding the significant changes in the quality of life after the surgical procedure. Sometimes a longer period of recovery due to excessive crusting or postnasal drip determines a poor perception of the QOL after the surgery. This is why it is very important to correlate the symptoms intensity with nasal endoscopic aspects and CT findings to determine the correct surgical procedure.

When we are speaking about the type of surgery it is mandatory to make the patient understand that the chosen procedure is the most appropriate for the disease. Generally speaking there are two major types of surgical procedures used for the rhinosinusal diseases – external approaches (ra-

dical or non functional surgery) and endoscopic procedures.

Endoscopic sinus surgery it is typically reserved to documented rhinosinusitis, based on history, complete physical examination and CT scan.

Nowadays endoscopic approach could be divided in three categories: the functional endoscopic sinus surgery techniques (Wigand's concept), the radical endoscopic sinus surgery (Jankowski) and the extended approach "through" the sinuses to the skull base, orbit and optic nerve. Each type of approach means generally the same problems related to the quality of life but specific conditions are described due to each surgical procedure[10].

External approach could increase the negative perception of the patient due to packing, drains, aesthetic impairments and the prolonged period of admission. The necessity for a long period of medical treatment could add some problems for the patients (side effects, etc).

Endoscopic surgery means first of all well-known advantages but there are also a lot of related problems. Crusts and scarring seems to be the main problems to deal with.

According to American's Academy of ENT&HNS, the concept known as "the global period from FESS to zero" is defined so that otolaryngologists would perform the necessary debridement of infection, scar tissue and recurrent polypoid tissue in both the immediate post-op period (30-45 days) and afterwards depending on the case. Many patients require meticulous long-term care after the immediate post-operative period, especially those with chronic diseases including fungal sinusitis, bacterial chronic infection, recurrent polyposis and Samter's triad. Some of these patients may at certain times even require daily or weekly debridement. The physician should concurrently prescribe a complete medical regime to control the chronic disease process and to decrease the need for frequent debridements, which are an adjunct to medical therapy.

Quality care is expensive. Many insurers around the world have gotten around the zero global periods by allowing care to be rendered by their contracted providers every 90 days[11]. Insurance carriers have made physicians feel guilty about billing for it, labeling them as „overutilizers„. Similarly, others performed the procedure but didn't bill for it. This is unfair to the patients that need and are not receiving follow-up debridement as their quality of life will probably be diminished, they may be at increased risk of complications of sinus disease and they may have an increased need for revision surgery in the operating room. Furthermore, it should actually decrease the costs of care long term and significantly improve the quality of life for the patient.

In Romania the things are still unclear as there are no private insurances. We usually prolonged the period of debridement and follow-up depending on the evolution of each case and with no fees.

CONCLUSIONS

Rhinosinusal pathology has a greater impact on certain aspects of QoL than conditions such asthma, angina, chronic pulmonary disease. Health related QoL is useful for rhinosinusal diseases where the objective tests correlate poorly with disease severity and outcomes.

Patients with rhinosinusitis disease have significant decrease in the quality of life parameters. The restriction in QOL is mainly due to nasal obstruction and postnasal drip which can be improved in a good fashion by endoscopic surgery.

Radical surgery offers almost the same results but leads to another kind of complaints from the patients due to the aesthetic defects, packing, longer period of admission, etc.

Patients with rhinosinustis disease need a correct evaluation, surgery indication and most of all a correct follow-up to make the patients feel better in terms of their physical, social and work activity, interpersonal relationships and general psychological well-being.

Both endoscopic and external radical treatment of CRS significantly improved almost all the parameters of CSS and RSDI ($p < 0.05$), with no significant difference being found between the two groups ($p > 0.05$).

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