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An Audit of the Predictive Value of SNOT-22 Tests in Evaluating Nasal Surgeries Emerson's Green/Devizes NHS Treatment Centres

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Abstract

The Sino-Nasal Outcome Test (SNOT-22) has been widely adopted in clinical practice and has been declared as the most suitable sinonasal outcome scoring system. It is simple disease specific encompassing 22 symptoms reflecting health burden of the rhinological patients.

Introduction

The Sino-Nasal Outcome Test (SNOT-22) has been widely adopted in clinical practice and has been declared as the most suitable sinonasal outcome scoring system. It is simple disease specific encompassing 22 symptoms reflecting health burden of the rhinological patients.

Each item quantifies symptoms severity from 0 (no problem) to 5 (worst symptom). The sum of each item results in a maximum score of 110. High score indicates poor outcome.

The SNOT-22 is a validated questionnaire of disease specific, quality of life related measures of sinonasal function that has demonstrated good reliability, validity, and responsiveness and is been used in various rhinological procedures for example septoplasty, functional endoscopic sinus surgery, endoscopic turbinoplasty.

SNOT-22 is recommended by the European position paper on rhinosinsuitis and nasal polyps EPOS 2012 as the most adequate tool to evaluate the effectiveness of surgery for chronic rhino sinusitis [1].

This audit reflects a single surgeon experience of using SNOT-22 in evaluating a cohort of patients with rhinological disease comparing the preoperative and postoperative scoring to reflect the outcome of various rhinological procedures.

Materials and Methods

A Total of 15 patients were randomly selected who hard various nasal surgeries performed by named ENT surgeon at Emerson's Green/Devizes NHS Treatment Centres in the period from May 2018 to November 2018.

Every patient was seen preoperatively in the outpatient clinic where he/she scored his/her symptoms using the SNOT 22 questionnaire chart, 6 weeks postoperatively he/she scored again her symptoms using SNOT-22 questionnaire unaware of their preoperative SNOT-22 scores.

The cohort age varied from the youngest of 20 years old to the oldest of 65 years old, various rhinological procedures was performed including: Septoplasty with or without turbinoplasty, FESS polypectomy, and endoscopic turbinoplasty.

All patients had a preoperative counselling and received an information leaflet about their nasal procedure in addition to SNOT-22 questionnaire chart. A routine blood investigation, informed consent was signed in the clinic.

Postoperatively all patients received oxymetazoline nasal drops 0.05% 2 drops twice daily for 5 days followed by isotonic sterimar nasal sprays for 2 weeks, A 10 days course of 500 mg clarithromycin antibiotic 12 hourly was prescribed in selected FESS polypectomy patients where signs of active infection was illustrated intra-operatively.

All patients were seen 6 weeks postoperatively to assess their symptoms clinically and by SNOT-22 questionnaire chart.

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Table 1: Comparing the preoperative and postoperative SNOT22 scores of each patient.

Age	Surgical Procedure	Preoperative SNOT22 Score	Postoperative SNOT 22 Score
33 years	Bilat.Turbinoplasty	42	2
70 years	Bilat. FESS Polypectomy	60	0
58 years	Septoplasty/FESS	45	5
41 years	Septoplasty	33	8
50 years	Bilat.FESS Polypectomy	41	1
32 years	Bilat.FESS Polypectomy	42	4
22 years	Septoplasty/Bilat. Turbinoplasty	28	7
61 years	Bilat.Turbinoplasty	49	21
20 years	Septoplasty	51	44
35 years	Bilat.FESS Polypectomy	56	2
54 years	Septoplasty	10	6
64 years	Bilat.Turbinoplasty	33	10
65 years	Bilat.FESS Polypectomy	92	7
34 years	Septoplasty	60	6
30 years	Septoplasty	51	21

The mean Pre-operative SNOT-22 score off all 15 patients was 46.2 and the mean post-operative SNOT-22 score was 9.2 with an overall of 70% improvement in patient's symptoms.

Table 1 summaries the cohort of patients included in this audit comparing the preoperative with the postoperative SNOT-22 scores following each performed surgical procedure.

Results

This audit of a single surgeon experience at Emerson's Green/ Devizes NHS Treatment Centres reveals that SNOT-22 questionnaire is a useful tool in nasal surgeries as it combines both nasal specific and general health questions that reflects patients symptoms both pre-and postoperatively.

Based on this audit it is also recommended to document the scores of SNOT-22 questionnaire pre-and postoperatively in patient's medical record as a validated measure of success or failure of any nasal procedure.

Discussion

The 22-item Sino-Nasal-Outcome Test (SNOT-22) is a widely applied patient-reported outcome instrument used to assess the severity of symptoms associated with chronic rhinosinusitis.

However recent publication suggests that it is also a validated outcome that can measure the improvement of patient's symptoms post nasal obstruction surgical procedures, as septoplasty, turbinoplasty [2]. Kennedy et al. [3] grouped the SNOT-22 questions into 4 main categories:

Nasal related (need to blow nose, sneezing, runny nose, nasal obstruction, loss of smell/taste and post nasal drip). Ear/Facial related (ear fullness, dizziness, ear pain, facial pain and pressure).

Quality of life related (difficult falling asleep, wake up at night, wake up tired, and fatigue, reduced productivity, reduced concentration).

Psychologically related (frustrated/restless, sad, embarrassed), Kennedy et al. [3] concluded that SNOT-22 is helpful tool for quantifying changes in symptoms and can be used to predict extent of post-operative improvement. While all of the components of the SNOT-22 significantly improved after surgery, only runny nose, as well as cough was independent predictors of post surgical SNOT-22 improvement [3].

Harries et al. [4] published an article assessing the usefulness of SNOT-22 test to measure the success of septal surgery. A total of 40 patients were included in the study the mean total pre-operative SNOT-22 score was 36.3 compared to a mean post-operative score of 19.3 with a total of 47% improvement in patient's symptoms. The study considered an improvement is defined as reduction of > one point [4].

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