Factors Influencing Surgical Intervention in Adult Cystic Fibrosis Patients

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ABSTRACT

Purpose: To identify characteristics of adult cystic fibrosis patients that predict surgical intervention with endoscopic sinus surgery (ESS).

Methods: Patients were identified in a tertiary sinus center by ICD-9 code 277.00-277.03. Charts were reviewed for cystic fibrosis gene mutation, Lund-Mackay Score (LMS), SNOT22 score, number of previous ESS, and need for ESS after presentation. Fisher’s exact test was used to compare the need for ESS based on presence or absence of previous ESS. A t-test was used to compare mean LMS and SNOT22 between the groups of previous ESS or no previous ESS. Analysis of variance was used to compare mean LMS, SNOT22 score, and previous endoscopic sinus surgery (ESS) on the likelihood of needing further ESS.

RESULTS

100 patients met the inclusion criteria for the study. 43/100 of patients had undergone ESS prior to presentation at our institution, while 57/100 had not undergone previous ESS. 29/100 underwent subsequent ESS after initial presentation to the Sinus Center, and of those 11 had not undergone ESS previously at another institution. 46/100 patients never underwent ESS at any institution. Patients that had undergone previous ESS were more likely than patients that had not to require an additional ESS after presentation (p=0.01). Even though LMS was not significantly different between the groups of previous ESS and no previous ESS, Analysis of variance was used to compare mean LMS, SNOT22 score, and previous ESS status on the likelihood of needing further ESS.

DISCUSSION

CF is an uncommon disease that often presents to the otolaryngologist because of the high rate of CRS in this population. Management of this disease can be difficult due to the underlying disease process and these patients sometimes require surgery for their disease.

Previous work has suggested that more severe mutations, including the most common mutation, delF508, can lead to more phenotypically severe CRS, with higher LMS, and decreased aeration of the frontal and sphenoid sinuses. The current study suggests that a history of previous surgery and the presence of a delta F508 mutation may predict the need for future or further surgery.

METHODS AND MATERIALS

A retrospective chart review was performed after IRB approval (Massachusetts Eye and Ear protocol 778969) at a tertiary care institution. Patients were included in the study if they presented to the institution’s Sinus Center, were treated by the senior author (STG) between January 2001 and January 2015, and carried an ICD-9 code of 277.00-277.03 (Cystic Fibrosis). Patients were excluded if the chart did not include a diagnosis of CF. Charts were reviewed for CF gene mutation, SNOT22 score, LMS, number of previous ESS, and need for ESS after presentation.

Fisher’s exact test was used to compare the need for ESS based on presence or absence of previous ESS. A t-test was used to compare mean LMS and SNOT22 between the groups of previous ESS or no previous ESS. Analysis of variance was used to compare mean LMS, SNOT22, and need for ESS, between mutation groups, homozygous for delF508 mutation, heterozygous for delF508, or other mutations requiring ESS (p=0.04).

CONCLUSIONS

Surgical intervention in adult CF patients is predicted by previous surgical intervention, and status of the delta F508 mutation, but not LMS or SNOT22 score.

REFERENCES


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