Frontal sinus balloon sinuplasty for the management of CRS-related facial pain.

Our experience, effectiveness, limitations and literature review.

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Purpose of the study:

Frontal sinus CRS-related headache (FSH), is one of the most prevalent secondary headaches [1]. The purpose of our study was to assess the effectiveness and limitations of balloon sinuplasty in its management.

Materials and methods:

30 patients, ages 14-80, with CRS-related FSH as defined by AAO-HNSF criteria were treated with balloon sinuplasty as standalone or in combination with FESS as a day case under GA.

SNOT 22 and a VAS pain scores were collected pre-operatively and at 6 month FU and used as an outcomes measure. Patients were subsequently monitored with patient-initiated FU for 7-42 months (mean 27).

Results:

Patients' SNOT 22 score improved from 33-93 (mean 57) pre-operatively to 0-61 (mean 21) post-operatively at 6 months. Poor responders' cases are presented and discussed along with the effectiveness and limitations of the technique.

Discussion:

Most of the published evidence on balloon sinuplasty comes from observational studies that do not separate the individual sinuses and often include balloon sinuplasty as an adjunct procedure in addition to ethmoidectomy, septoplasty, or turbinate reduction.

As a result, there is lack of formally agreed upon criteria [2]. A series of studies have reported similar patency of the frontal sinus ostium at follow-up between the hybrid and conventional frontal sinustomy approach [3] and equivalent improvement of SNOT 22 scores and

patient satisfaction [4] while major adverse events such as orbital injury and cerebrospinal fluid leak are reported to be less frequent in relation to FESS [5,6].

In the current study, we present our data on the outcomes of 30 patients with clinical symptoms and radiological findings of CRS related frontal headache managed with frontal balloon sinuplasty. In our experience, the technique has been proven effective in the vast majority of patients (case 1) allowing us to avoid more extensive surgery, with positive effects on post op recuperation time, post op scarring, reduced operating time and thus improved theatre utilisation and reduced number of FU outpatients reviews/treatment.

Case1. Successful balloon sinuplasty as demonstrated on FU CT for concurrent osteoma monitoring.

In a small number of cases lack of post op clinical improvement lead to FU CT scans that reveal persistent frontal recess obstruction noting the limitations of the technique especially in cases with complex frontal recess anatomy (cases 2,3)

Cases 2,3. Unsuccessful sinuplasty attempt (case 2,3) due to complex frontal recess anatomy (Kuhn type 2 and intraseptal sinus cells) as demonstrated in post op CT.

Conclusion:

Frontal balloon sinuplasty is an effective technique in the vast majority of patients with CRS -related FSH. Further research is required to define clear universally agreed indications and potential limitations.

References:

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