Peer Review File

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Reviewer A:

Comments:

This is a retrospective study assessing the effectiveness of radiofrequency reduction of inferior turbinates in an office setting, including 98 patients with follow-up up to 6 months in 57 patients. There are some sentences throughout the paper which seem incomplete, the paper should be carefully proofread and amendments made where necessary.

Overall it shows promising results, if only in the short term. RFA turbinate reduction is intended to improve nasal obstruction so the specific improvement in that symptoms (Q22) should be mentioned earlier than the end of the results section, and should be highlighted in the discussion, as it is rather lost in the general SNOT22 discussion at present.

Reviewer A Comment 1: RFA turbinate reduction is intended to improve nasal obstruction so the specific improvement in that symptoms (Q22) should be mentioned earlier than the end of the results section, and should be highlighted in the discussion, as it is rather lost in the general SNOT22 discussion at present.

Response to Reviewer A Comment 1: From our understanding of the literature on the SNOT 22 tool, it is best not to infer too much meaning from one question. The SNOT survey tool has been validated in total and the rhinology domain block of questions has also been validated, just using Question 22 as a measure of nasal obstruction has not been validated and the statistician on our team said we should avoid inferring much meaning from the data from individual questions. Nasal obstruction would affect answers to many of the questions, it would affect sleep and fatigue. This paragraph has now been moved to line 192: “Participants reported a far greater improvement in their quality of life symptoms (QOL) such as sleeping symptoms (Q11, 12, 13, 14), fatigue and productivity (Q16, 17, 18) and most relevant nasal obstruction (Q22). The clinical improvement observed in Q22 (nasal obstruction) was statistically significant at both 1-month post-operative ($p=0.018$) and 6 months post operatively ($p=0.000028$). Thirty percent of the 98 participants who filled out a SNOT 22 survey ($n = 29$) completed a survey at all three timepoints. Analysis of this subset of the sample is highlighted in Figure 5. and shows a smaller trend towards improved

results, with SNOT 22 scores measured at the 6-month follow up visit indicating a recurrence of symptom severity."

Some areas of the methods/results including tables/figures need clarification please:

Reviewer A Comment 2**: How far into the turbinate is the probe passed?**

Response to Reviewer A Comment 2: The following text was added on line 138: "The RFA probe was inserted submucosally, medial to the turbinate bone approximately 10 mm under the mucosa sliding along the turbinate bone. This can be repeated at multiple entry points (usually 2-3) to cover a larger area of the turbinate. One at the very anterior (head) end of the turbinate and a second probe insertion approximately 10 mm posterior to the head of the turbinate will lead to a reduction of turbinate volume."

Approximately 10 mm of the probe is inserted under the turbinate mucosa. Most often 2 insertions per turbinate. One at the very anterior (head) end of the turbinate and a second probe insertion approximately 10 mm posterior to the head of the turbinate. This will lead to a reduction of turbinate volume of the anterior third.

Reviewer A Comment 3: **How was the procedure funded in an outpatient setting? Was a Medicare rebate received by the hospital and for what item number? How much do the probes cost?**

Response to Reviewer A Comment 3: This has been addressed on line 79 "The funding code is 41689". And similarly, on line 148 "The probes are multi-use with an estimated life span for +500 cycles, and are double the cost of a single use probe".

Reviewer A Comment 4: **One of the exclusion criteria was an initial SNOT22 score of less than 9 but a patient scoring less than 9 is then mentioned in the results section – they should have been excluded up front so the total number of patients with preop SNOT22 scores would be 98 not 99.**

Response to Reviewer A Comment 4: Thank you for highlighting the wording of this sentence. Your comment helped us realise that we were inconsistent in how we described the full sample of 189 and the participants included in the SNOT 22 analysis and have made that clearer throughout the text. Line 159 now reads "Of the total number of 189 participants, 98 completed the pre RFA baseline SNOT 22 survey

and at least one post-procedure SNOT 22 survey and were included in the SNOT 22 analysis." and again on line 99 "Participants who scored less than nine on their initial overall SNOT 22 survey were excluded from the SNOT 22 analysis."

Reviewer A Comment 5: **The number of patients who completed the SNOT22 at different time points is given in the first paragraph (98 pre, 97 at 1 month and 57 at 6 months) but those numbers are different to the ones given later in the results section when the MCID is discussed. Please clarify:**

Response to Reviewer A Comment 5: To calculate the MCID we only analyzed those participants who had filled out at survey at the two timepoints. We have tried to make this clearer in the text outlined in the answer to the next question.

Reviewer A Comment 6: **"Of the 59 participants who had completed both pre and 1 month post RFA surveys 34 achieved MCID with 25 not achieving MCID. Similarly, in pre and 6 month post RFA 18 achieved MCID and 21 did not. In the 43 patients that completed RFA surveys post op and 6-months post op 11 achieved MCID and 32 did not."**

The sentence has now been amended on line 186 "Overall, a clear clinical improvement in symptoms was observed between baseline and 1-month after the RFA procedure. Of those participants who completed both the baseline and 1-month survey (n= 59), 34 (58%) had experienced a MCID. Of the participants who completed both the baseline and the 6-month follow up survey (n = 39), 18 (46%) had experienced a MCID."

Reviewer A Comment 7: **It is not clear what the last sentence is referring to – the difference between 1 month and 6 month postop or something else?**

Response to Reviewer A Comment 7: This last sentence referred to a comparison between the survey scores of the 1-month follow up with those of the 6-month follow up. However, we have since decided to remove these data as they are gratuitous.

Reviewer A Comment 8: **Table 3 – the MCID for the SNOT22 is 8.9 and does not change. Does Table 3 perhaps show the average change in SNOT22 scores between each time period?**

Response to Reviewer A Comment 8: Thank you for raising this point of clarification. You correctly note that table 3 shows the overall mean SNOT score

differences between two time points. The legend now states "**Table 3**: Clinical score differences between time points and statistical significance of overall mean SNOT scores at various time points in treatment with RFA." On page 21. The heading of the column is also changed to SNOT score difference

Reviewer A Comment 9: **Fig 1 – the y-axis gives 2 time points for each pair of bars, not a single time point as per the legend. Is it showing the number of patients who achieved/did not achieve the MCID (8.9) based on the difference in their SNOT22 scores between those 2 time points?**

Response to Reviewer A Comment 9: The legend has been amended to reflect the data more clearly: "**Figure 1. Figure 1.** Number of patients showing an MCID significant improvement or not (<8.9) based on the difference in SNOT scores between baseline to 1 month or 6 months after the RFA procedure"

Reviewer A Comment 10: **Intro: In a paper assessing the outcome of radiofrequency reduction of inferior turbinates, I am not sure what the relevance is of the number of Australians diagnosed with CRS (introduction) – could the authors provide the data for rhinitis instead?**

Response to Reviewer A Comment 10: Thank you for this feedback. We agree that we were remiss to omit data on rhinitis. We have added these data alongside the data on chronic sinusitis since it is common for both conditions to lead to symptoms of nasal obstruction. We have amended line 31 to read as follows:

"In 2017-2018 an estimated 19% of Australians (1 in 5) suffered with allergic rhinitis and in 2012, approximately 1.9 million Australians were diagnosed with chronic rhinosinusitis [3, 4]"

Reviewer B:

Comments:

This paper is a well written and research topic that is of importance to practicing clinicians.

What is unfortunate, however, is that the is no statistical significant improvement beyond 1 month due to a lack of follow up.

Reviewer B Comment 1: **Line 19 – suggest "RFA offers a clinically effective and at least a short term economical short term**

Response to Reviewer B Comment 1: Thank you for this feedback, line 22 has been amended to: "Conclusion**:** RFA offers a clinically effective and at least a short-term economical alternative to surgical treatment of nasal blockage."

Reviewer B Comment 2: **Line 34 – remove "logical"**

Response to Reviewer B Comment 2**:** In Line 36, logical has been removed and the sentence now reads "However, in cases of structural abnormalities such as turbinate hypertrophy, medical treatment only works temporarily and surgical intervention is often the next progression".

Reviewer B Comment 3: **Line 84 – could the authors clarify how long were INCS used?**

Response to Reviewer B Comment 3:

We have not been able to reliably control for how long INCS was used. However, patients reported dissatisfaction with the clinical outcome of INCS prior to being accepted for RFA-IT.