Reviewer's report

Title: Swallowing transit times and valleculae residue in stable chronic obstructive pulmonary disease

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Reviewer: Hiroshige Taniguchi

Reviewer's report:

General comments

The purpose of the present study was to evaluate swallowing transit times and valleculae residue characteristics of stable COPD patients. Swallowing was assessed by VF examination in 20 stable patients and 20 healthy controls and the duration of bolus movement through the oral cavity and pharynx, valleculae residue ratio and penetration/aspiration were compared. Patients with COPD presented longer pharyngeal transit times during the ingestion of the liquid consistency and during the ingestion of the paste consistency. Regarding the duration of tongue base contact with the posterior pharyngeal wall, COPD patients also presented longer durations for the liquid and paste consistencies. On the other hand, no significant difference was observed for the distribution of individuals among the different valleculae residue severity levels. From the current results, the authors suggested physiological adaptations as a protective swallowing maneuver to avoid aspiration/penetration of pharyngeal contents in these patients. This study is very interesting, which investigated functional status of swallowing in COPD patient to compare with healthy subjects. Although the authors showed longer swallowing transit time and status of valleculae residues in COPD patients, careful interpretation of the current results is needed in details.

Minor Essential Revisions

Background

Swallowing and respiration are not reciprocal functions. This sentence should be revised.

Methods

Study participants

Why did authors get an interest in BMI? Also, What does TBI represent the authors suggest?

Measures

Although the authors measured both oral and pharyngeal transit times, the results of oral transit time are not shown anywhere else in the text.

Why did the authors record only valleculae residues but not those in the piriform sinuses as the authors discussed? It is obvious that the latter is also important to evaluate the function of pharyngeal swallow.
The reviewer is not sure if the authors were able to accurately measure the area of the valleculae or residues only from Figs 2 and 3. High resolution photographs should be recommended to show. Furthermore, height or width of them must be affected by the posture or angle of neck so that vertical and horizontal axis should be defined at first for accurate measurement.

P11, L8, 9

Scores 7 and 8 should be inserted.

Results

Table 3

Although some valuables are significantly different between the groups, there was no difference in PTT for 3 and 5 ml of Liquid and Solid and TBI for 3 and 10 ml of Liquid and Solid between the groups. In addition, inter-individual variation was larger in control group than patient group. These results should at least be discussed.

Table 5-7

Although the authors showed correlation coefficient between the parameters in both healthy and patient groups, these results have not fully been discussed. For example, why was potential effect of BMI on TBC was detected only in controls, correlation between PTT and VEF1 was noted only for 5 ml liquid in patient group, which suggest that Spirometry (pulmonary function) is not so critical to bolus transport in terms of pharyngeal transit time?

Table 8

Again, there was a large inter-individual variation particularly in both groups. This should at least be discussed.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.