

Case Report: Deglutition test with and without adhesives in complete dentures via videofluoroscopy with barium sulfate contrast

Abstract

This case report presents a series of deglutition tests with and without adhesives for complete dentures by using videofluoroscopy with barium sulfate contrast. The patient is a 94 year old caucasian woman, complete denture wearer and wheelchair user. The videofluoroscopy confirmed the hypothesis of what had been clinically observed that adhesives for complete dentures help both in the chewing and swallowing processes for the patient.

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Case report

Caucasian patient, female, 94 years of age, upper and lower complete denture wearer, wheelchair user. The patient sought the dental office complaining about loose dentures after ischemic stroke in November, 2020, followed by gag and difficulty to swallow. The videofluoroscopy was prescribed in order to assess the deglutition performance with the dental prostheses, without the lower prosthesis, and with the prostheses with adhesives.

The first contact with the patient (home care) took place in March, 2021 after recommendation from the Speech and Language Therapist. Old upper and lower complete dentures – over 15 years of usage according to the patient's account – were slightly worn out; however, it was observed that the ridges and oral mucosa presented normal features. In addition, the patient's complaints regarding pain in a single spot were immediately corrected during the appointment through the conduction of occlusal adjustments.

Significant changes in swallowing patterns for older adults have been identified and help to differentiate presbyphagia from other changes that constitute impairment – e.g. dysphagia.¹ The patient had already been diagnosed as dysphagic, without any cognitive deficit, and had been hospitalized and intubated for two months due to a stroke. Research suggests that dysphagia impacts the patient's quality of life.² Right at the first appointment, the patient and her caretaker were both advised in relation to their oral hygiene, as well as the best procedures to properly clean the dental prostheses. The patient was given a hygiene kit containing a small bag, toothbrush for complete dentures, another regular toothbrush to clean and exercise the tongue, and a thimble to help clean the ridges and oral mucosa.

Furthermore, the patient received Corega Tabs® whitening samples to be used on a daily basis. We suggested that the prostheses should be immersed in water and the product while the patient takes a shower, and that the hygiene should be done subsequently with the product as well. In order to give a better feeling of good hygiene, it was agreed, alongside the Speech and Language Therapist, that a thickener with mint tea could be used to guarantee freshness of the mouth.³ Finally, it was recommended that the patient do motricity exercises with adhesives (Corega®) for the complete dentures.⁴

In April, the patient returned to the dentist's office, this time with a Speech and Language Therapist. At the time, another specialist in Speech and Language Therapy participated in the appointment, helping the team, thus, to come up with a treatment plan through a transdisciplinary perspective.

After that, it was decided that more Speech and Language Therapist appointments were needed in order to strengthen the oropharyngeal muscles. It was clinically observed that, with the use of adhesives, chewing and deglutition both had significant improvement. To confirm the hypothesis that adhesives in fact help in the evolution of the treatment, videofluoroscopy – which has been considered the gold standard in the diagnosis, choice of treatment and follow-up of swallowing disorders⁴ – was prescribed according to the following steps:

Videofluoroscopy

The test was conducted with barium sulfate contrast – nectar consistency – (IDDSI 2 pure barium) in the lateral position.

The patient remained seated on the wheel chair and responded to all the instructions. The food was given by the caregiver.



Figure 1A There was penetration of the contrast in the laryngeal area.



Figure 1B There was residue of the contrast left in the oral cavity.

Figure 1A,1B With the prostheses.



Figure 2A There was less penetration of the contrast in the laryngeal area in relation to the test with the prostheses.



Figure 2B There was less residue in the oral cavity.

Figure 2A,2B Without the lower prosthesis.



Figure 3A There was no penetration of the contrast and almost no residue was left in the oral cavity.



Figure 3B There was no penetration of the contrast and almost no residue was left in the oral cavity.

Figure 3A,3B With prostheses fixed with adhesives.

Discussion

Dysphagia is a condition frequently identified in vulnerable older adults with signs of dementia or other degenerative diseases, and is present between 10% to 33% of the senior population. Its complications are common and may lead to death due to aspiration pneumonia. In order to effectively deal with such a patient, an intervention with a multi professional team is mandatory.^{6,7} Thus, based on the aforementioned evidence, a transprofessional approach in which the Speech and Language Therapist works with the Dentist was fundamental for the success of both diagnosis and treatment plan.

Conclusion

The videofluoroscopy confirmed the hypothesis of what had been clinically observed that adhesives for complete dentures help both in the chewing and swallowing processes for this patient.

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None.

Conflicts of interest

The author declares there is no conflict of interest.

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