



**Bombay Hospital
& Medical Research Centre**



Comparison of bedside evaluation and FEES in assessment of dysphagia in acute stroke patients admitted at tertiary care hospital in Mumbai.

Mehul Desai, Nirmal Surya², Hitav Someshwar³ (1. DM Neuroresident, 2. Neurologist, Bombay Hospital and Medical Research Centre, 3. Physiotherapist, Surya Neuro centre.)

INTRODUCTION

- Dysphagia is a symptom that refers to pain, difficulty or discomfort during the progression of the bolus from the mouth to the stomach.
- Dysphagia has significant impacts on patients' life quality, life expectancy, and economic burden.
- The benefit to the patient, in terms of improvement in quality of life, cannot be underestimated. Many studies have attempted to assess the utility and efficacy of various methods used to tackle the problem with varying degrees of sensitivity and specificity..
- Bedside tests might be used to identify patients with dysphagia and to identify those who are at risk of aspiration.
- During bedside testing, the clinical indicators of included abnormal volitional cough, abnormal gag reflex, dysphonia, dysarthria, cough after swallow, and voice change after swallow.

AIM

- The aim of this work was to assess the value of bedside tests in comparison with FEES to evaluate aspiration.
- This may help in easy, rapid and accurate diagnosis of aspiration during swallowing, hence better management.

Methodology

- 11 patients were admitted to Stroke unit of a tertiary care hospital for the assessment of swallowing difficulties during the period from January 2020 to January 2021.
- They were 6 males and 5 females
- Mean age of 52 years and range between 20 and 91 years.
- Aspiration correlates were assessed using bedside tests (water swallow test, pulse oximetry and gag reflex).

- FEES was performed to most of the patients to detect sensitivity and specificity in comparison with bedside tests
- The patient was examined in the sitting position or in 45 degrees.
- Some patients were examined in the recumbent position because of difficult positioning.
- The patient was given 5 ml of water, and when the patient could tolerate that amount of water, he/she was given 20 ml followed by 50 ml of water (thin fluid) and assessed for cough/choking during or after swallowing, wet or weak cough after swallowing.
- Also the patient was asked to produce sustained vowel /a/ before and after swallowing of water and voice change after swallowing was observed and recorded.



Comparison of bedside evaluation and FEES in assessment of dysphagia in acute stroke patients admitted at tertiary care hospital in Mumbai.

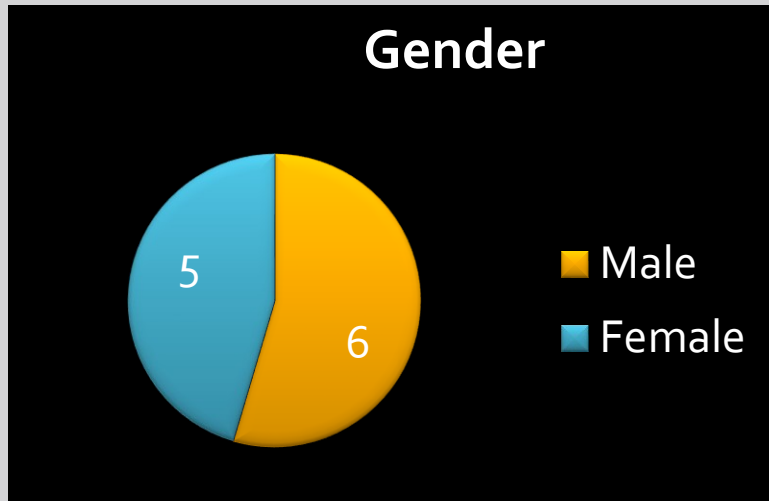
Mehul Desai¹, Nirmal Surya², Hitav Someshwar³ (1. DM Neuroresident, 2. Neurologist, Bombay Hospital and Medical Research Centre, 3. Physiotherapist, Surya Neuro centre.)

Statistical Tests

- The individual bedside tests and combinations of these tests were subjected to statistical analysis.
- To examine, the sensitivity, specificity and positive and negative predictive values (PPV, NPV) were determined. Sensitivity and specificity were calculated using a 2 · 2 contingency table.
- The calculation was based on a comparison between the results of the bedside tests and FEES. A 95% confidence interval was used for testing.

RESULTS

- The bedside tests required an average of 15 min and
- FEES required about 10 min.



- Dysphagia was recorded in 56% of the patients.
- Bedside tests showed 73% sensitivity and 68% specificity when correlated with FEES.
- Moreover combination of voice change and choking/cough results in sensitivity of 86.5% and specificity of 75.2%.

Bed Side Test	Sensitivity %	Specificity %	PPV %	NPV %
Cough/chocking	74.29	70	69.66	68.7
Change of voice	80.3	73.3	79.3	72.6
Gag reflex	50.4	57.8	60.3	51.7
Pulse oximetry	48.3	55.6	46.7	57.2
Cough+change of voice	86.5	75.2	80.2	74.9

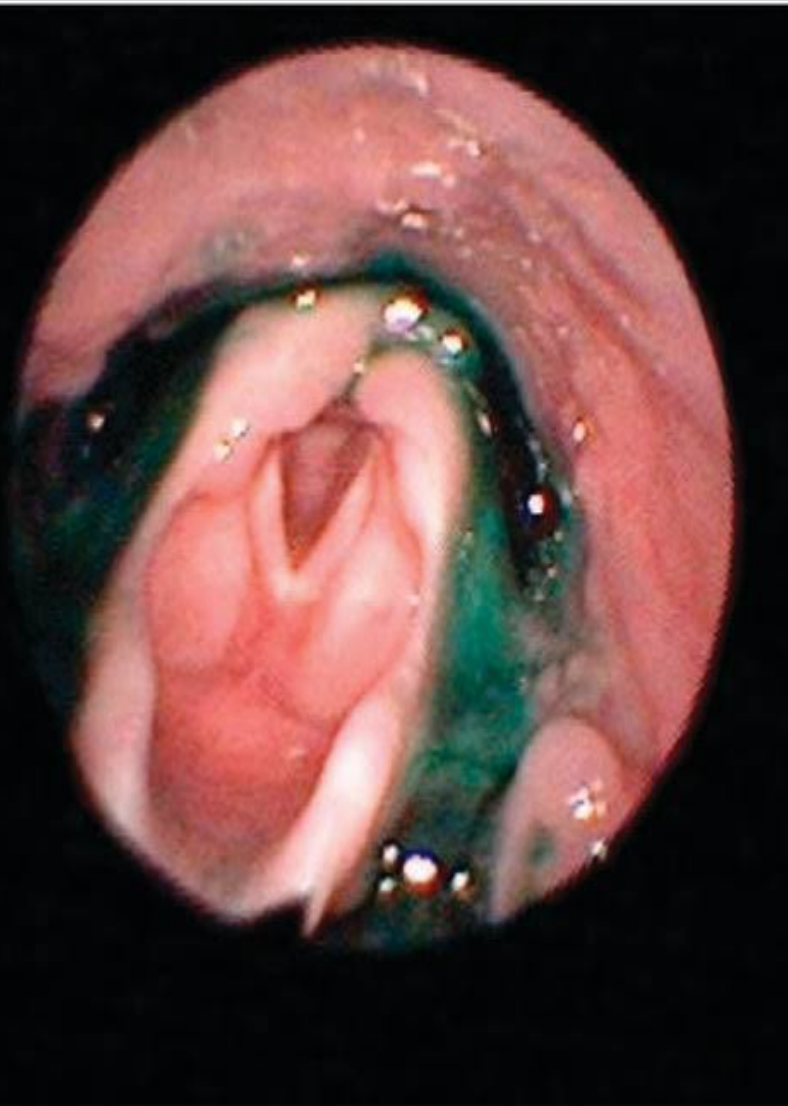
Table 1- Comparison of bedside tests with FEES%.



Bombay Hospital
& Medical Research Centre



Comparison of bedside evaluation and FEES in assessment of dysphagia in acute stroke patients admitted at tertiary care hospital in Mumbai.
Mehul Desai¹, Nirmal Surya², Hitav Someshwar³ (1. DM Neuroresident, 2. Neurologist, Bombay Hospital and Medical Research Centre, 3. Physiotherapist, Surya Neuro centre.)



Discussion

- Diagnosing and treating swallowing disorders represent a major challenge in everyday clinical practice.
- The most common diagnostic procedures for oropharyngeal dysphagia are fiberoptic endoscopic swallowing examination (FEES) and videofluoroscopy. Because these procedures are technically demanding, the tendency in everyday practice is to try to obtain meaningful information on a patient's swallowing ability by using standardized simple clinical tests.
- This is primarily achieved using swallow tests with water, modified in a variety of ways.

Conclusion

- Bedside tests can be considered as an important, easy, sensitive and specific for the detection of aspiration.
- Combination of choking/cough and change of voice as parameters of aspiration compared with FEES showed high sensitivity and specificity.
- Further research is needed to establish the most effective combination of bedside tests to detect silent aspiration.