البحث الخامس (بحث مشترك – منشور)

<u>اسم البحث باللغة الانجليزية:</u>

Measurement of Pharyngeal residue from lateral view Videofluoroscopy

<u>اسم البحث باللغة العربية:</u> قياس بقايا البلعوم بالتنظير المرئي الجانبي.

<u>المشاركون في البحث:</u>

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<u>مكان وتاريخ النشر:</u>

Abstract

The field lacks consensus about preferred metrics for capturing pharyngeal residue on videofluoroscopy. We explored four different methods, namely, the visuoperceptual Eisenhuber scale and three pixel-based methods: (a) residue area divided by vallecular or pyriform sinus spatial housing ("%-Full"), (b) the Normalized Residue Ratio Scale, and (c) residue area divided by a cervical spine scalar (%(C2–4)$_2$). Method: This study involved retrospective analysis of an existing data set of videofluoroscopies performed in 305 adults referred on the basis of suspected dysphagia, who swallowed 15 boluses each (six thin and three each of mildly, moderately, and extremely thick 20% w/v barium). The rest frame at the end of the initial swallow of each bolus was identified. Duplicate measures of pharyngeal residue were made independently by trained raters; interrater reliability was calculated prior to discrepancy resolution. Frequency distributions and descriptive statistics were calculated for all measures. Kendall's τ_b tests explored associations between Eisenhuber scale scores and pixel-based measures, that is, %-Full and %(C2–4)$_2$. Cross-tabulations compared Eisenhuber scale scores to 25% increments of the %-Full measure. Spearman rank correlations evaluated relationships between the %-Full and %(C2–4)$_2$ measures. Results: Complete data were available for 3,545 boluses: 37% displayed pharyngeal residue (thin, 36%; mildly thick, 41%; moderately thick, 35%; extremely thick, 34%). Eisenhuber scale scores showed modest positive associations with pixel-based measures but inaccurately estimated residue severity when compared to %-Full measures with errors in 20.6% of vallecular ratings and 14.2% of pyriform sinus ratings. Strong correlations ($p < .001$) were seen between the %-Full and %(C2–4)$_2$ measures, but the %-Full measures showed inflation when spatial housing area was small. Conclusions: Generally good correspondence was seen across different methods of measuring pharyngeal residue. Pixel-based measurement using an anatomical reference scalar, for example, (C2–4)$_2$ is recommended for valid, reliable, and precise measurement.

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