

Critical Review:

Is cervical auscultation a reliable and valid measure to identify aspiration in adults when compared to videofluoroscopy?

Courtney Hibbs

M.Cl.Sc (SLP) Candidate

University of Western Ontario: School of Communication Sciences and Disorders

This critical review examines the reliability and validity of cervical auscultation to identify aspiration in adults with dysphagia when compared to videofluoroscopy. Four studies using either between- or within-group study designs are reviewed. Overall, evidence gathered from this review indicate that cervical auscultation could be a reliable indicator of aspiration when used within a clinical swallowing examination. However, it should presently only be used to augment the clinical examination, not in lieu of videofluoroscopy. Recommendations for further research and clinical practice are provided.

Introduction

Dysphagia is a swallowing disorder that occurs secondary to other pathologies including those that are neurogenic, oncologic, psychogenic, surgical, or congenital in nature (CASLPO, 2007). In the United States in 2009, dysphagia was reported to occur in 67% of patients in the acute stages following stroke (Turner-Lawrence et al.). In Canada, 20,000 new cases of dysphagia secondary to stroke arise each year (CASLPO, 2007). According to the College of Audiologists and Speech-Language Pathologists of Ontario (CASLPO), dysphagia puts individuals at an increased risk of not meeting nutritional needs, and for respiratory complications such as aspiration pneumonia. Additional to these physical impairments, dysphagia can negatively affect patients' quality of life and overall well-being (2007).

Since assessment of dysphagia falls under Speech-Language Pathologists' (SLP) scope of practice, it is essential that SLPs are current in their knowledge of dysphagia. It is also important that SLPs are accurate in dysphagia assessment since this area of the scope of practice presents the greatest associated risk of harm for patients (CASLPO, 2007). Videofluoros

Data Collection

Results of the literature search described above yielded four articles that met the selection criteria. These were included in the critical review process. One study was a between-groups study design (Zenner, Losinski & Mills, 1995), and three studies were both between- and within-groups study designs (Stroud, Lawrie & Wiles, 2002, Leslie et al., 2004, Borr, Hielscher-Fastabend, Phil, & Lücking, 2007).

Results

Zenner, Losinski, and Mills (1995) was one of the first research teams to study cervical auscultation. They used a between-groups study design to compare the reliability and validity of the clinical assessment including cervical auscultation to that of videofluoroscopy (VFSS) in 50 male patients who were referred for suspected oral-pharyngeal dysphagia. Two examiners completed a clinical swallowing assessment, which included cervical auscultation, on each of the patients. Two weeks later the examiners completed VFSS with a radiologist. Results of the study indicated that agreement between both assessment methods was statistically significant when determining oral delay ($\kappa=0.440$) and the presence of aspiration ($\kappa=0.520$).

There are strengths to this study that are worthy to mention. The methods of selection of subjects and assessment procedures

experience, or self-proclaimed expertise did not predict his or her reliability.

This study was well designed. The procedures were described in depth and were optimized to ensure that the sound clips were exactly what the SLPs hear when clinically completing cervical auscultation. The sound clips were obtained simultaneously with videofluoroscopy (VFSS) to ensure that cervical auscultation could be directly compared to VFSS. Blinding and randomization was effectively used to decrease the susceptibility of the ratings to bias.

The study sample was moderately small, which necessitates the use of caution when

Laypeople have even been seen to use swallowing sounds to identify aspiration, displaying that people inherently know how a normal swallow should not sound (Borr, Hielscher-Fastabend, Phil & Lücking, 2007). So, as Leslie et al. (2004) and Borr, Hielscher-Fastabend, Phil & Lücking (2007) allude to, deglutition sounds should, in principle, contain information that permit reliable identification of aspiration. Nonetheless, this review demonstrates that these areas are not yet adequately studied. Therefore, cervical auscultation should not yet be used to replace VFSS as the “golden standard”. If used, it should only augment the clinical evaluation.

Future Research Suggestions