

Dysphagia after stroke and its management

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Dysphagia is common after stroke, presenting in 55% of all hospital-admitted patients with acute disease, and, depending on the lesion site and volume, can linger as a chronic problem for years.¹ It is estimated that every year in Canada there are 21 000 new elderly patients with dysphagia after stroke and 200 000 in the United States.² Of these patients, as many as 10 000 in Canada and 100 000 in the US continue to experience dysphagia for months after the initial stroke event. The problem of dysphagia after stroke is expected to increase given the aging of our population.

Dysphagia after stroke is often underdiagnosed.³ Dysphagia needs to be detected early and managed effectively because the consequences of untreated dysphagia could be serious.^{2,4} Dysphagia has been associated with increased length of stay, malnutrition, dehydration and death.⁵ Reports of pneumonia in patients with dysphagia after stroke range from 7% to 33%, with conservative estimates at 18%.¹ Patients with dysphagia after stroke have a 3-fold increased risk for aspiration pneumonia, and this risk is markedly increased to 11-fold in patients with confirmed aspiration on videofluoroscopy after stroke.¹ Aspiration without a cough (silent aspiration) further increases the incidence of pneumonia to 54%.⁶ This is problematic considering that silent aspiration occurs in up to two-thirds of patients with dysphagia after stroke.⁷

Evidence-based tools are now available to detect dysphagia early, even in patients with silent aspiration. New stroke guidelines in Canada are stressing early detection of dysphagia with validated screening tools.⁸ Similar guidelines exist in the US⁹ and the United Kingdom.¹⁰ These guidelines require that a trained clinician screen patients admitted with stroke or suspicion of stroke for dysphagia as soon as the patients are alert and able. A standardized tool must be used.

In an effort to standardize care for patients with stroke across all settings, the Toronto Bedside Swallowing Screening Test was recently developed.¹¹ The test was conceptualized and developed on the premise that earlier detection of dysphagia by screening shortens the time to recovery and also improves overall patient health.²

There is now emerging evidence from one

retrospective study to show that early detection of dysphagia reduces subsequent pulmonary complications in patients with stroke by three-fold.⁴ Although, by design, retrospective data are limited because pneumonia surveillance could not be standardized, the reduction in pneumonia events following screening for dysphagia is compelling, especially because patients with pneumonia after stroke are at increased risk of dying (relative risk 5.4, 95% confidence interval 3.2–9.0) and have a longer length of stay in hospital (mean 14 v. 5 d).⁴ Therefore, a screening intervention that reduces comorbidity and yet is brief and easy to administer, as well as psychometrically sound, is critical for provision of good patient care.

Currently, only 50% of patients with stroke in Canada are reportedly being screened for dysphagia.¹² Considering that aspiration pneumonia is a preventable complication that continues to occur in 5.7% of patients,¹² there is a need to increase the use of screening for dysphagia in the care of patients after stroke.

To maximize recovery and minimize negative consequences, early detection of dysphagia must be followed with proper management.² Several approaches for management of dysphagia have become well established in clinical practice for stroke, including compensatory approaches such as enteral feeding, dietary modifications, posturing for feeding, advice on safe eating, and oral hygiene, as well as behavioural manoeuvres such as voluntary airway protection and effortful swallowing.¹³ The evidence suggests that use of these therapies more frequently would be beneficial. For example, when compared with usual swallowing therapy (5 sessions averaging 16 minutes each), high-intensity therapy (12 sessions averaging 24 minutes each) offered in the acute phase produced greater recovery of swal-

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KEY POINTS

- Dysphagia after stroke is common, presenting in 55% of all hospital-admitted patients with acute disease, yet is often underdiagnosed.
- Undetected dysphagia in patients after stroke increases rates of pneumonia by threefold.
- Early detection of dysphagia with screening followed by proper management reduces comorbidity, such as pneumonia.

lowing ability and return to a normal diet at six months.¹⁴ Swallowing therapies can also focus on improving swallowing physiology through, for example, oral exercises, cold stimulation to the faucial pillars, transcutaneous neuromuscular electrical stimulation or olfactory stimulation.¹³ Therefore, although data on efficacy remain limited, several recent randomized controlled trials have provided emerging evidence that general programs of therapy for dysphagia are associated with favourable outcomes.¹⁵

More recently, there is growing evidence that the neural network for swallowing is capable of experience-dependent plasticity.¹⁶ This in turn has fuelled the development of several experimental interventions for dysphagia. For example, sensory stimulation of the oropharynx with air-pulse trains has been shown to increase resting swallowing rates in tube-fed patients with dysphagia after stroke¹⁷ and activate the cortical swallowing network in controls.¹⁸ Pharyngeal electrical stimulation has been reported to decrease aspiration, and increase cortical excitability, in patients with dysphagia after stroke.¹⁹ Although promising, these therapies are still under study. Randomized controlled trials are required to establish the therapeutic effects of these experimental swallowing interventions in terms of swallowing and stroke outcomes.

Dysphagia is common after stroke, and its presence can have serious consequences, such as pneumonia and even death. There is new evidence to show that early identification from screening and enthusiastic acute treatment will reduce these comorbidities and increase long-term functional recovery.

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