



Report from IFFGD Research Award Winner:

Adult Neurogenic Dysphagia: Disorders and Conditions that Disrupt Swallowing

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Dr. Hamdy was the recipient of the IFFGD 2005 Junior Investigator, Clinical Science Research Award. His most recent research has focused on understanding the central neural control of GI motor function, with a specific interest in swallowing and its disorders after brain injury.

Introduction

Dysphagia is a disorder characterized by difficulty swallowing. Swallowing is a highly complex process involving both nerve and muscle function.

Swallowing involves more than transporting material from the mouth to the stomach for digestion. It also involves protection of the airway, rejection of harmful ingested substances, and the preparation of foods for digestion. We swallow on average once every minute and this is supplemented by the production of saliva. Swallowing increases dramatically (6–8 times per minute) when we eat. When swallowing is disrupted, the consequences can be devastating, with complications such as malnutrition, entry (aspiration) of gastric or foreign material into the respiratory tract, and the associated problems of being unable to eat. The implications of swallowing difficulty are therefore of considerable medical importance to health workers of all disciplines.

Causes of adult neurogenic dysphagia

Difficulty in swallowing can occur as consequence of disease to either the organs and muscles involved in swallowing, or more commonly to the central nervous system controlling swallowing (neurogenic dysphagia). Anatomical problems, which disrupt swallowing, include many gastrointestinal disease processes from the mouth through to the first part of the small intestine (duodenum). Doctors therefore will want to exclude any disease arising within the gut before making a diagnosis of dysphagia arising from the nervous system in someone presenting with symptoms of swallowing difficulty.

There are many neurological disorders and conditions that can disrupt swallowing. Examples include stroke, multiple sclerosis (MS), Parkinson's disease, muscular dystrophies, and head injury. In addition, it is important to recognize that any pharmacological agent that alters neuromuscular function can produce dysphagia. However, the most common and arguably the most important cause of adult neurogenic dysphagia is stroke, the commonest form of neurological disorder seen on the medical wards.

Assessment of swallowing in neurogenic dysphagia

Dysphagia is arguably one of the most serious deficits in function that can result from neurological damage. The consequences may, at best, hinder a

person's recovery to normal function, and at worst, be life-threatening. In the hospital setting, patients admitted with neurological disorders should all have an assessment of swallowing as a part of routine clinical management. In many hospitals, this is done by the ward nursing staff. To insure optimal therapy, it is essential that all staff who may be expected to perform a bedside swallowing examination are given adequate and appropriate training, as well as guidance on when to make relevant referrals to other medical professions including speech and language therapy, gastroenterology, and dietetics.

Complications of neurogenic dysphagia

Neurogenic dysphagia can lead to complications. Pulmonary aspiration (entry of foreign material into the lungs) is the easiest to identify. Aspiration may manifest itself suddenly or acutely as choking or coughing, respiratory distress, wheezing, gasping or gurgling, loss of voice quality, and rapid heart rate (tachycardia), or chronically (particularly in silent aspiration) as weight loss, hunger, excessive secretions, and refusal to eat. Less well clearly defined are the complications of dehydration and malnutrition.

Management of neurogenic dysphagia

In view of these complications, the management of neurogenic dysphagia becomes critical. Therapy may often include changes in diet, posture and food placement adjustments, as well as methods for altering the swallow reflex. At present, however, there is little data to support any of these approaches as producing benefit to dysphagic patients so their efficacy remains a matter of some controversy. If these methods are unhelpful, enteral feeding may be tried. This involves providing food through a tube placed in the nose, stomach, or small intestine. However, while this may improve the nutritional status of the patient, there is some concern that the risk of pulmonary aspiration remains high, particularly among those with impaired cognitive ability.

Conclusions

Neurogenic dysphagia is a common, often under-diagnosed, problem of major clinical importance. Emphasis on early detection and appropriate treatment is crucial for the well being of the patient, in whom this condition can be distressing and life threatening. Well-trained health care professionals, especially nursing staff, are important if improvements in the management of patients with dysphagia are to be attained. Currently, therapies such as enteral feeding, aimed at improving the patients' nutrition provide a means of delivery. Nonetheless, this does not remove the risk of aspiration and as such the serious risk to these patients remains high.

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