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IMPLEMENTATION OF SWALLOWING THERAPY IN DYSPHAGIA PATIENTS WITH ISCHEMIC STROKE DIAGNOSIS

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ABSTRACT
Ischemic stroke is the acute onset of focal neurological deficits in vascular territories affecting the brain, retina or spinal cord due to cerebrovascular disease. The symptoms of stroke in general are partial or complete limb weakness, decreased cognitive function, difficulty swallowing or dysphagia, aphasia and dysarthria. Dysphagia is a swallowing disorder in which food and drinks take time to reach the stomach from the mouth. One of the interventions that can be given to patients is swallowing therapy. The purpose of this case study is to provide nursing care for ischemic stroke patients who experience dysphagia to overcome swallowing difficulties. This exercise requires patient participation by giving instructions or directions to patients both verbally and visually about how to swallow to increase swallowing muscle strength. There was one participant in the ischemic stroke patient. The exercise was given for 4 days 3 times a day for 15 minutes each exercise using the Mann Assessment of Swallowing Ability, a standardized instrument with established validity and reliability for dysphagia assessment in stroke patients. The results of the evaluation showed an improvement in the patient' swallowing ability, namely before the intervention MASA 147 and after the intervention MASA 170. The application of swallowing exercises can be used as a nurse intervention in carrying out nursing actions independently for patients who experience swallowing disorders in ischemic stroke patients and can be continued by families at home.

Keywords: dysphagia; ischemic stroke; swallowing theraphy

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INTRODUCTION

Stroke is a pathological condition characterized by neurological changes due to insufficient cerebral perfusion that causes disruptions in the delivery of oxygen and essential nutrients, which ultimately leads to damage to nerve tissue. The onset of a stroke is usually caused by the formation of a thrombus, which blocks blood flow to certain areas of the brain. This obstruction results in damage or necrosis of brain tissue. In general, strokes are divided into two, namely ischemic stroke and hemorrhagic stroke. Ischemic stroke is the acute onset of focal neurological deficits in the vascular region that affects the brain, retina or spinal cord due to cerebrovascular disease (Chugh, 2019). The occurrence of an ischemic stroke due to a blockage of blood vessels that limits the blood supply to the brain due to thrombosis or embolism.

Ischemic stroke can cause permanent brain damage and death. Thrombus (clot) within the blood artery itself, usually the result of atherosclerosis, arterial dissection, fibromuscular dysplasia, or inflammatory disease, blocks blood flow to the brain in thrombotic events (Hui et al., 2024). In the event of an embolism, debris from elsewhere in the body blocks blood flow through the affected blood vessels. Arterial-to-arterial embolism stroke can occur distal from any proximal source, usually the heart, and can be caused by embolism of the proximal artery, such as atherosclerotic plaques in the internal carotid artery (Pierik et al., 2020).

According to the World Stroke Organization (2022) globally, more than 12.2 million or one in four people over the age of 25 will have a stroke or more than 101 million people alive today, more than 7.6 million or 62% of new ischemic strokes each year. Based on the results of Basic Health Research (Riskesdas 2023), it is known that the prevalence of stroke in Indonesia is 8.3%. The incidence of stroke results in various decreases or impairments of neurological function depending on the location of the lesion. One of the clinical symptoms that always appears in stroke patients is swallowing disorders or what is often called dysphagia, and this occurs in 37% to 78% of stroke patients (Chen, 2017). Impaired neurological function and swallowing muscles cause dysphagia. Dysphagia is difficulty swallowing and is objectively defined by doctors as a swallowing disorder that takes time for food or drink to reach the stomach from the mouth. Dysphagia occurs due to obstruction or motility disorders (Azer et al., 2023).

Management of dysphagia begins when acute stroke patients arrive at the hospital. Every acute stroke patient should be checked for dysphagia within four hours of arriving at the hospital, before being given food, fluids or medication. One of the ways of intervention to reduce the complications of dysphagia is to carry out a compensatory strategy by tilting the head, maintaining the body position and modifying the consistency of the food or liquids consumed, with the aim of strengthening the oropharingeal muscles through oral exercises, as well as overcoming swallowing disorders in the oropharynx and increasing sensory input through thermal, tactile stimulation at the base of the tongue and soft palate or magnetic stimulation transcranial. Therefore, this case report aims to describe the implementation of swallowing therapy as a nursing intervention in dysphagia patients with ischemic stroke, including the procedures applied and the patient's clinical response during therapy.

METHOD

Nursing care in a 61-year-old man with a diagnosis of ischemic stroke who was treated for 10 days, with difficulty swallowing mainly liquid food and having difficulty speaking since 1 month ago. The patient's family also said that the patient walked by dragging the right side of the limb because the patient experienced weakness in the body next to food. This case study was conducted after obtaining ethical approval from the relevant Ethics Committee (ethical clearance number SK207/KEPK/USU/2025), and informed consent was obtained from the patient and the patient's family prior to the implementation of nursing care.

Patients were fitted with NaCl 0.9% infusion 20 drops/minute, patients were fitted with nasogastric tubes with a diabetic mellitus sonde diet of 1700 kcal, patient consciousness was compos mentis with blood pressure of 140/80 mmHg, breathing frequency 20 times per minute, pulse rate 89 times per minute, temperature 36.7 celsius, oxygen saturation 99%. The patient had a history of hypertension and diabetes mellitus and took amlodipine 1x10 mg, candesartan 1x16 mg, aspilet 1x80 mg, insulin levemir 1x14 IU. Before the patient had a stroke, the patient had a smoking, fatty diet.

The results of the non-contrast brain Ct scan showed the presence of infarction in the left thalamus, the right caudate nucleus accompanied by senilis cerebral atrophy, left maxillary sinusitis. Complete blood laboratory results hemogoblobin 12.4 g/dL, leukocytes 9,290/µL platelets 247,000/µL, hematocrit 38.3%, urea 40 mg/dL, creatinine 1.21 mg/dL, sodium 142 mmol/L, potassium 3.9 mmol/L, blood sugar (current): 222 eGFR: 68 ml/min/1.73 m2.

Swallowing technique training interventions were implemented for 4 days and carried out 3 times a day before meals including: 1) Observing the patient by measuring the patient's vital signs, 2) Adjusting the patient's position to a sitting position with a pillow with a weak body position, 3) Performing oral hygiene, 4) Teaching oral movement exercises by opening and closing the mouth, raising the tongue by touching each corner of the right/left mouth using the tongue, 5) Teach the

patient to swallow water with the strength of the neck and pharyngeal muscles, when swallowing the tongue presses the palate strongly, 6) Teach the patient to feel the movement of the hioid bone, and swallow as usual and feel the hyoid bone move and hold before finishing swallowing. This case study was conducted after obtaining ethical approval from the relevant Ethics Committee (ethical clearance number SK207/KEPK/USU/2025), and informed consent was obtained from the patient and the patient's family prior to the implementation of nursing care.

RESULT

The results of nursing care obtained by the patient will be described at each stage. On the first day of swallowing exercises, the patient appears to have difficulty following the instructions given, difficulty chewing food, not being able to remove the tongue properly, moving the tongue to the right and left and touching the upper and lower lips, and vomiting when given water. From the Mann Assessment of Swallowing Ability, a score of 147 was obtained with 20 statements assessed.

On the second day, the patient was unable to perform swallowing exercises well, could only follow a few instructions and tongue movements remained vibrating when ejected, slowly swallowed food > 5 seconds with a MASA score of 155. On the third day, the patient began to understand how to turn the head to the weak side by holding the jakun while swallowing food, even though the lips were still not symmetrical with a score of 168. On the fourth day, the patient was able to perform swallowing exercises well and was able to touch the right and left lips even though they looked asymmetrical, the way of speaking had begun to be clear from a few words to sentences, coughing only occasionally when swallowing food and drinks, and was able to move fast food from the previous day with a score of 170. Based on the results of the case study, it is shown that the administration of swallowing technique exercises in ischemic stroke patients given is effective in increasing the muscle strength of chewing, the reflex of swallowing food and changing the patient's swallowing physiology directly and indirectly. This is seen from the Mann Assessment of Swallowing Ability, which is from moderate to mild severity.

DISCUSSION

The swallowing technique in ischemic stroke patients with swallowing disorders increased before and after the intervention

Research by Choi et al., (2017) said that the effect of swallowing exercises in stroke patients with dysphagia, namely in the form of tongue muscle strength training and efforful swallowing maneuvers carried out had a significant impact on increasing swallowing function and reducing aspiration. Similarly, research by Parimala et al., (2022) said that exercise therapy is swallowed in patients with cerebrovascular and this therapy is to effectively reduce the risk of aspiration and improve the quality of life of patients with dyspagia. Based on Tarihoran's research, (2019) said that there was an increase in swallowing ability in stroke patients with dysphagia after swallowing exercises. Research (Afrida, 2018) shows that the effect of swallowing exercises on dysphagia in stroke patients by providing rehabilitation for swallowing exercises three times a day before meals on, during the day and at night for seven consecutive days. In Tumanggor's study, Meszadena (2023) that patients were instructed to swallow and push their tongue against the ceiling hard. The results of screening of stroke patients have been carried out previously showing that this therapy has positive dysphagia results. The patient also shows the ability to cough independently, and is willing to be a responder, able to follow commands and cooperative with the awareness of the compos mentis. The intervention was carried out for 10 days and every day 2 training sessions were carried out within 30 minutes in the morning and afternoon.

Research by Xu et al., (2024) said that swallowing therapy with swallowing rehabilitation training can improve the movement of the genioglossus muscle, improve swallowing function, and prevent the occurrence of swallowing-related complications after stroke ($p<0.001$). Research (Jongprasitkul & Kitisomprayoonkul, 2020) says that conventional swallowing therapy is an effective treatment

for acute stroke with dysphagia by providing 50 minutes of therapy a day for 3 days per week (p=0.001). Research (Hu et al., 2024) said that there was an improvement in swallowing function, quality of life, and patient satisfaction in ischemic stroke patients (p<0.005). Therefore, as a nurse, it is very important to provide education and teach swallowing technique exercises, to speed up the patient's healing process. And after returning from the hospital, the patient can do the exercise independently.

CONCLUSION

The results of the case study show that swallowing exercise therapy can improve swallowing ability, muscle strength in dysphagia patients. This needs to be done by nurses in hospitals as one of the interventions for families and patients when they have returned from the hospital.

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