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Original article

DEGLUTITION SYNCOPE IN A HEALTHY 9-YEAR-OLD BOY: FIRST OF ITS KIND IN AFRICA. A CASE REPORT AND LITERATURE REVIEW.

Godfrey Wekha[a,b,*], Julius Bruno Mugambe[b], Rebbecca Nabaweera[b], Innocent Ayesiga[b], Elias Musiime[b], Isaac Ebiju[a,b], Primrose Magala[c], Blaise Kiyimba[a]

[a] *School of Medicine, College of Health Sciences, Makerere University, Kampala, Uganda.*
[b] *Ubora Foundation Africa.*
[c] *Moorfields Eye Hospital, UK.*

Abstract

Introduction

Deglutition syncope, also known as swallow syncope is a rear form of situation syncope. It's a neurally-mediated reflex that occurs during swallowing. This condition has been associated with various esophageal disorders such as esophageal spasm, stricture, and esophageal cancer. In other cases, the cause remains unknown.

Case Report

In this case report, we present the timeline of a healthy 9-year-old boy with deglutition syncope, a rare entity, and the first of its kind in the Sub-Saharan region.

Conclusion

Despite its rarity, healthcare professionals ought to consider deglutition syncope as a diagnosis of exclusion especially in the face of unexplained syncope. Because of associated life-threatening bradycardia, knowledge of the clinical manifestation is equally important for early diagnosis, and institution of care to avert death.

Keywords: Syncope, Deglutition, Neuro- cardiogenic, collapse, Submitted: 2023-05-07 Accepted: 2023-06-06

1. Introduction.

Deglutition syncope, also known as swallow syncope is a rear form of situation syncope (1-4). It's a neurally-mediated reflex occurring during swallowing (5-7). Since 1793(3), a number of reports have emerged though the volume is still low (2). What's even more interesting is the rarity of swallow syncope in children. Because of the challenge associated with its diagnosis, patients tend to present to clinicians across multiple disciplines (6, 8). Usually, patients present with symptoms such as dizziness, chest tightness, light-headedness, or an unconcealed syncope (9).

This condition has been associated with various esophageal disorders such as esophageal spasm, stricture, achalasia, hiatal hernia, and esophageal cancer (7, 9). In other cases, the cause remains unknown. Presence of a functional or structural esophageal disorder is not a pre-requisite for diagnosis as suggested in several case reports (10). However, a careful analysis of a patient's symptoms and clinical findings play a central role to the diagnosis, and patient management.

To this day, the pathophysiology of swallow

* Corresponding author.
Email address: wekha76@gmail.com (Godfrey Wekha)

syncope is not well understood. However, in recent literature, it's postulated that this event results from a hypersensitive vagotonic reflex triggered by mechanical receptors in the lower esophagus, resulting in inhibition of the Atrioventricular node (AVN) (11). In this case report, we give an account of a 9-year-old boy with deglutition syncope.

2. Case.

The patient is a 9-year-old boy, previously healthy, with no known familial illness, food or drug allergy brought to pediatric emergency of a tertiary health facility in Luweero district, central region of Uganda, with a history of loss of consciousness after swallowing water. This event was preceded by feeling of lightheadedness, and chest tightness. This was the third episode and it lasted about 60 seconds. On symptoms review, fever, headache, visual disturbance, neck pain, chest pain, shortness of breath, choking sensation, dysphagia, odynophagia, nausea, vomiting, and abdominal pain were absent. He had appropriate fluid intake and there was no recent illness, head trauma, or dietary change.

On presentation, he was fully conscious, had a blood pressure of 96/56 mmHg, heart rate 57 beats per minute, temperature 36.9°C, respiratory rate 20 breaths per minute, and oxygen saturation of 99%. The physical exam was unremarkable except for the bradycardia. A diagnosis of swallow syncope was made basing on temporal relationship between swallowing and syncope. While on ward, he had another episode of syncope lasting 50 seconds while taking porridge in the morning. There was no therapeutic intervention except for encouraging him to avoid the triggers.

3. Diagnostics.

Initial investigations including complete blood count, Blood slide for malaria parasites, and Random blood sugar which were all unremarkable as shown in table 1.

3.1. Patient perspective.

The parent perceived that the boy could have some spiritual attacks due to some family related wrangles. No medical perspectives were offered.

4. Discussion.

As it has been documented in several case reports, swallow syncope is indeed a rare syndrome whose etiopathology is not well understood. What is certain are the trigger factors including solid foods, liquids, or both. In majority of cases due to liquids, carbonated beverages (11) are implicated. In addition, temperature, eating habits, pastiness of foods could also act as the triggers (12-14). In our case, the triggers were water and porridge. Swallow syncope has been described in relation to many disease conditions especially those affecting the esophagus like esophageal stricture, hiatus hernia, esophageal spasm, and esophageal cancer (15). Pharmacologic agents have also been implicated in exacerbation of the syndrome (16). These agents include; Cardiac glycosides (Digoxin), β-Blockers (e.g., Propranolol), Calcium channel blockers (e.g., verapamil), and ACE Inhibitors. Cardiac conditions such as an inferior wall myocardial infarction, rheumatic myocarditis, and an aortic valve calcification have also been found in common with swallow syncope (13, 14, 17). In our case there was no evidence of an esophageal or cardiac disease as noted in the relevant histories, and the physical examination findings.

Despite the diagnostic challenge, a carefully recorded history has proven central to the diagnosis especially when the relationship between syncopal symptoms and swallowing is demonstrated (18, 19). Holter monitoring and provocation tests, esophagogastroscopy or barium study, and ECG/Echo can be adopted to exclude gastroesophageal or cardiac disease. Because of limited resources, we weren't able to do any of the above investigations. However, we based on the relationship between swallowing and the presyncope/ syncopal symptoms to make the diagnosis in absence of any other plausible explanation to the child's symptoms. In this instance, despite the high probabil-

Table 1: **CBC Complete Blood Count, WBC White Blood Cells, HGB Hemoglobin, PLT Platelets.**

Investigation	**Results**
CBC	12.18 g/dL
a) WBC	$2.26\times10^{9}/\mu L$ $332.2\times10^{9}/\mu L$
b) HGB	
c) PLT	
Blood Slide for malaria parasites	No malaria parasites seen
Random Blood Sugar	5.1 mmol/L Range (3.9-7.8)

CBC Complete BloodCount, WBC White Blood Cells, HGB Hemoglobin, PLT Platelets.

ity of the diagnosis being the otherwise because of limited resources, we could only depend on our clinical skills to intervene.

When it comes to treating swallow syncope, there is no definite guideline. However, correction of esophageal pathology (20, 21), discontinuation or reduction of aggravating medicines, use of vasopressors (e.g., epinephrine, isoprenaline), placement of a permanent pacemaker (21, 22), and avoidance of carbonated beverages are among interventions being recommended (15). Though some of these interventions especially pharmacological agents are poorly tolerated because of adverse effects.

5. Conclusion.

Despite its rarity, healthcare professionals ought to consider deglutition syncope as a diagnosis of exclusion especially in the face of unexplained syncope. Because of associated life-threatening bradycardia, knowledge of the clinical manifestation is equally important for early diagnosis, and institution of care to avert death. Additionally, a well recorded history, detailing the temporal relationship between swallowing and presyncope/ syncopal symptoms is paramount. Health care workers especially those involved in the care of children should be made aware of this disease entity.

6. Limitations.

The major limitation of this case is the difficulty in establishing the case-causal relationship.

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8. Abbreviations

CBC	Complete Blood Count
ECG	Electrocardiography
ACE	Angiotensin Converting Enzyme
HGB	Hemoglobin
PLT	Platelets
AVN	Atrioventricular Node

9. Conflict of interest

The authors declare no conflict of interest

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11. Author Biography

Godfrey Wekha is an early career researcher with a bachelor's degree in medicine and surgery from Makerere University, Uganda. He has special interests in Emergency medicine, Surgical oncology, patient centered care, minimum access surgery, and public health.

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Author biography

Godfrey Wekha Godfrey Wekha is an early career researcher with a bachelor's degree in medicine and surgery from Makerere University, Uganda. He has special interests in Emergency medicine, Surgical oncology, patient centered care, minimum access surgery, and public health.