

Original Article

Clinical Profile of Patients Presenting with Dysphagia in the Emergency Department

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ABSTRACT

Background: Dysphagia is an important emergency department presentation associated with aspiration, pneumonia, malnutrition, prolonged hospitalization, and increased morbidity, particularly among older adults and patients with neurological disease. **Objective:** To determine the clinical profile, etiological distribution, associated comorbidities, and aspiration-related complications among adult patients presenting with dysphagia in the emergency department of a tertiary care hospital. **Methods:** This retrospective observational study was conducted in the emergency department of Lady Reading Hospital, Peshawar, from 1 November 2025 to 30 January 2026. A total of 120 patients aged 18 years and above with documented swallowing difficulty were included. Demographic characteristics, symptom pattern, duration of dysphagia, etiology, comorbidities, and aspiration-related complications were extracted from medical records. Data were analyzed using SPSS version 26. Categorical variables were compared using chi-square test, and mean age between groups was compared using independent sample t-test, with $p \leq 0.05$ considered significant. **Results:** The mean age was 56.8 ± 17.2 years, and 72 patients (60.0%) were male. Neurological causes were most frequent, affecting 58 patients (48.3%), with stroke accounting for 44 cases (36.7%). Structural causes were identified in 34 patients (28.3%). Neurological dysphagia was significantly associated with age above 50 years ($p=0.01$), and patients with neurological dysphagia had a higher mean age than those with non-neurological causes (61.2 ± 14.5 vs 52.3 ± 18.6 years; $p=0.02$). Aspiration-related complications occurred in 26 patients (21.7%), including aspiration pneumonia in 18 patients (15.0%), and were significantly more frequent in neurological dysphagia ($p=0.03$). **Conclusion:** Dysphagia in the emergency department predominantly affected older adults and was most commonly neurological in origin, with stroke as the leading specific cause. Early dysphagia screening and aspiration-risk assessment are essential in emergency neurological presentations. **Keywords:** Dysphagia; Emergency Department; Deglutition Disorders; Stroke; Aspiration Pneumonia; Clinical Profile.

INTRODUCTION

Dysphagia is a clinically important disorder of swallowing that may involve the oral, pharyngeal, or esophageal phases and is associated with substantial morbidity, particularly when airway protection, nutrition, and timely diagnosis are compromised. Its burden increases markedly with age and comorbidity, and acute care settings frequently encounter patients in whom dysphagia is either the presenting complaint or an early manifestation of serious underlying disease (1,2). In emergency departments, dysphagia has particular clinical importance because delayed recognition may lead to

aspiration, pneumonia, dehydration, malnutrition, prolonged hospitalization, and increased mortality, especially among older adults and patients with neurological disease (3–5).

Neurological disorders, particularly stroke, remain among the most important causes of acute dysphagia, as disruption of coordinated cranial nerve, cortical, and brainstem swallowing pathways may impair bolus propulsion and airway protection. Structural causes such as esophageal strictures and malignancy, as well as infectious or inflammatory conditions, also contribute to emergency presentations but often differ in onset, symptom pattern, and associated risk profile (2,3). The distinction between neurological, structural, and inflammatory etiologies is clinically relevant because it influences triage, aspiration-risk assessment, diagnostic referral, and early management decisions in the emergency department (4–6).

The burden of dysphagia is especially relevant in South Asian settings, where cerebrovascular disease, delayed hospital presentation, limited structured swallowing assessment, and constrained access to specialized speech and swallowing services may increase the risk of preventable complications (7–10). In Pakistan, available hospital-based evidence suggests that dysphagia is common after stroke and that aspiration-related complications remain an important contributor to morbidity; however, emergency department-specific data describing the clinical profile, etiological distribution, comorbid conditions, and aspiration-related outcomes of dysphagic patients remain limited (9,10). This gap restricts the development of locally appropriate screening pathways and early intervention protocols.

Therefore, the present study was designed to determine the clinical profile of adult patients presenting with dysphagia in the emergency department of a tertiary care hospital. The study specifically aimed to describe demographic characteristics, symptom patterns, etiological categories, associated comorbidities, and aspiration-related complications, and to evaluate whether age, gender, duration of symptoms, and comorbid conditions were associated with neurological dysphagia and aspiration risk.

MATERIALS AND METHODS

This retrospective observational study was conducted in the emergency department of Lady Reading Hospital, Peshawar, Pakistan, over a six-month period from 1 November 2025 to 30 January 2026. The study used a hospital-record-based design to evaluate adult patients presenting with dysphagia in an acute care setting. Formal ethical approval was obtained from the institutional Ethical Review Committee before data collection, with approval letter number 210/LRH/MTI dated 15 October 2025. Patient confidentiality was maintained throughout the study by anonymizing all identifiers during data extraction, entry, and analysis.

The study population included all patients aged 18 years and above who presented to the emergency department with documented swallowing difficulty during the study period. Dysphagia was operationally defined as patient-reported or clinician-documented difficulty in swallowing solids, liquids, or both, with or without associated coughing during swallowing, regurgitation, hoarseness, weight loss, or clinical suspicion of aspiration. Patients with acute, subacute, or chronic onset were included if the emergency record contained adequate clinical documentation regarding presenting symptoms, provisional diagnosis, relevant examination findings, and associated comorbidities. Patients were excluded if records were incomplete, if symptoms represented isolated odynophagia without true swallowing difficulty, if dysphagia had already been diagnosed and treated without acute worsening, if swallowing difficulty resulted from traumatic injury requiring immediate surgical management, or if the patient was younger than 18 years.

A census-based sampling approach was used, and all eligible records from the defined study period were reviewed to minimize selection bias. Data were extracted from electronic medical records and emergency department patient files using a structured data collection proforma. The extracted variables included age, gender, duration of dysphagia, type of swallowing difficulty, associated symptoms,

comorbidities, provisional diagnosis, etiological category, and documented aspiration-related complications. Duration of symptoms was categorized as acute when symptoms were present for seven days or less and subacute/chronic when symptoms exceeded seven days. Etiology was classified into neurological, structural, infectious/inflammatory, and miscellaneous or undetermined categories based on the attending physician's documented clinical assessment, imaging or endoscopic impressions where available, and final emergency diagnosis. Stroke-related dysphagia was recorded as a neurological cause when dysphagia occurred in association with a documented acute or previous cerebrovascular event.

The primary outcome was the clinical profile of patients presenting with dysphagia in the emergency department, including demographic and symptom characteristics. Secondary outcomes included etiological distribution, associated comorbidities, and aspiration-related complications. Aspiration-related complications were identified from documented clinical findings, radiological impressions, or physician-recorded diagnoses, and aspiration pneumonia was recorded when respiratory symptoms and clinical or radiological evidence supported the diagnosis in the emergency record.

To reduce information bias, data were extracted using predefined variables and standardized coding categories. Records with insufficient documentation for key study variables were excluded. Data consistency was checked before analysis by reviewing frequency distributions, identifying impossible values, and cross-verifying discrepant entries with the source record. Because the study included all eligible cases during the defined period, the sample size was based on complete available case capture rather than formal prospective sample size calculation.

Data were analyzed using SPSS version 26. Quantitative variables such as age were summarized as mean and standard deviation, while categorical variables such as gender, symptom duration, etiology, comorbidities, and complications were presented as frequencies and percentages. The chi-square test was used to assess associations between categorical variables, including age group and etiology, gender and etiology, diabetes mellitus and dysphagia type, symptom duration and structural causes, and neurological dysphagia and aspiration-related complications. Independent sample t-test was used to compare mean age between neurological and non-neurological dysphagia groups. Statistical significance was set at $p \leq 0.05$. Where clinically appropriate, group comparisons were planned to be presented with effect estimates and 95% confidence intervals to improve interpretability. The analysis was performed on available complete records, and no patient identifiers were used during statistical processing.

RESULTS

A total of 120 adult patients presenting with dysphagia were included. The mean age was 56.8 ± 17.2 years, and most patients were older than 50 years (56.7%). Males constituted 60.0% of the cohort, giving a male-to-female ratio of 1.5:1. Acute-onset dysphagia was more common than subacute or chronic presentation, occurring in 61.7% of patients.

Table 1. Demographic and Clinical Characteristics of Patients Presenting with Dysphagia

Variable	Frequency / Mean	Percentage / SD
Total patients	120	100.0
Age, years	56.8	± 17.2
Age >50 years	68	56.7
Age ≤ 50 years	52	43.3
Male	72	60.0
Female	48	40.0
Acute dysphagia, ≤ 7 days	74	61.7
Subacute/chronic dysphagia, > 7 days	46	38.3

Difficulty swallowing both solids and liquids was the most frequent symptom pattern, reported in 52 patients (43.3%), followed by difficulty with solids only in 38 patients (31.7%) and liquids only in 30

patients (25.0%). Coughing during swallowing was the most common associated symptom, documented in 40.8% of cases, indicating a clinically relevant aspiration-risk signal in the emergency setting.

Table 2. Presenting Pattern and Associated Symptoms

Clinical Feature	n	%
Dysphagia for solids and liquids	52	43.3
Dysphagia for solids only	38	31.7
Dysphagia for liquids only	30	25.0
Coughing during swallowing	49	40.8
Regurgitation	36	30.0
Weight loss	28	23.3
Hoarseness of voice	19	15.8

Neurological causes were the predominant etiology, accounting for 58 cases (48.3%), with stroke alone responsible for 44 cases (36.7%) of the total cohort. Structural causes were identified in 34 patients (28.3%), while infectious or inflammatory causes accounted for 18 patients (15.0%). Miscellaneous or undetermined etiologies were present in 10 patients (8.3%).

Table 3. Etiological Distribution of Dysphagia

Etiology	n	%
Neurological causes	58	48.3
Stroke-related dysphagia	44	36.7
Structural causes	34	28.3
Infectious/inflammatory causes	18	15.0
Miscellaneous/undetermined causes	10	8.3

Hypertension was the most frequent comorbidity, present in 62 patients (51.7%), followed by diabetes mellitus in 48 patients (40.0%). Both hypertension and diabetes coexisted in 36 patients (30.0%), reflecting a high vascular-risk burden in the study population.

Table 4. Comorbid Conditions Among Patients with Dysphagia

Comorbidity	n	%
Hypertension	62	51.7
Diabetes mellitus	48	40.0
Hypertension and diabetes mellitus	36	30.0

Neurological dysphagia was significantly more common among patients older than 50 years ($p=0.01$). Patients with neurological dysphagia were also significantly older than those with non-neurological causes, with a mean age of 61.2 ± 14.5 years compared with 52.3 ± 18.6 years. The mean age difference was 8.9 years, with an approximate 95% confidence interval of 2.9 to 14.9 years, representing a moderate effect size. Structural causes were more frequent among patients with subacute or chronic symptoms, although this association did not reach statistical significance ($p=0.08$). Gender was not significantly associated with etiology ($p=0.27$), and diabetes mellitus was not significantly associated with dysphagia type ($p=0.11$).

Table 5. Inferential Analysis of Factors Associated with Dysphagia Etiology

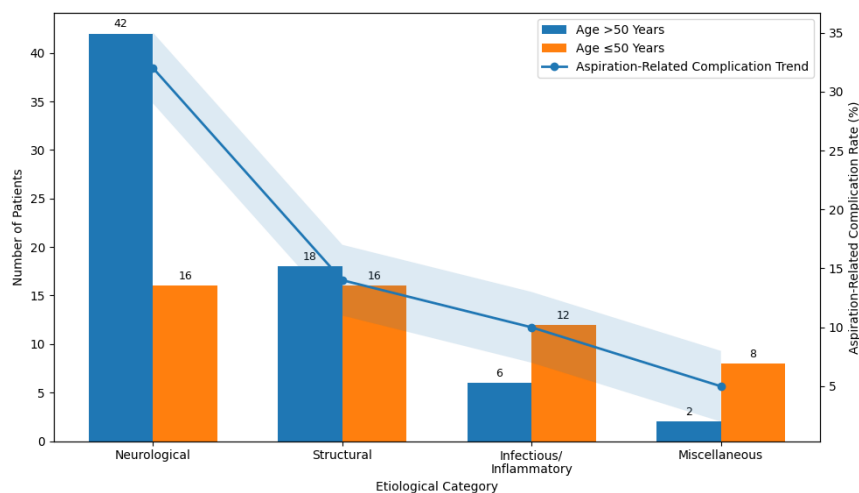
Comparison	p-value
Age group and neurological etiology	0.01
Mean age: neurological vs non-neurological dysphagia	0.02
Duration and structural etiology	0.08
Gender and etiology	0.27
Diabetes mellitus and dysphagia type	0.11

Aspiration-related complications were documented in 26 patients (21.7%), including aspiration pneumonia in 18 patients (15.0%). Patients with neurological dysphagia had a significantly higher frequency of aspiration-related complications compared with other etiological groups ($p=0.03$), highlighting the clinical importance of early swallowing assessment in neurologically vulnerable patients.

Table 6. Aspiration-Related Complications

Complication	n	%	Association Tested	p-value
Any aspiration-related complication	26	21.7	Higher among neurological dysphagia cases	0.03
Aspiration pneumonia	18	15.0		

Overall, the results show that emergency department dysphagia in this cohort was concentrated among older adults, particularly males, and was most commonly neurological in origin. Stroke represented the single largest diagnostic contributor, while aspiration-related morbidity was clinically substantial, affecting more than one-fifth of patients. The significant association between older age and neurological dysphagia, along with the higher aspiration burden in neurological cases, supports the need for early dysphagia screening and aspiration-risk stratification in emergency patients with suspected neurological disease.

**Figure 1 Age-Associated Neurological Dysphagia Burden and Aspiration Risk in Emergency Department Presentations**

The figure demonstrates a pronounced age-associated concentration of neurological dysphagia, with patients older than 50 years contributing the majority of neurological cases (42 of 58 cases). Neurological etiologies showed the highest associated aspiration-related complication trend, approaching approximately one-third of cases, substantially exceeding structural and inflammatory etiologies. Structural dysphagia displayed a comparatively balanced age distribution, whereas infectious/inflammatory and miscellaneous causes were more dispersed among younger patients. The integrated aspiration-risk overlay highlights a progressive decline in complication burden from neurological to miscellaneous etiologies, reinforcing the strong association between advanced age, neurological impairment, and aspiration-related morbidity observed in the study cohort.

DISCUSSION

The present study found that dysphagia among emergency department patients was predominantly observed in older adults, with males representing 60.0% of the cohort and patients older than 50 years accounting for 56.7% of cases. Neurological causes were the leading etiology, comprising 48.3% of all presentations, and stroke alone accounted for 36.7% of the total sample. This pattern is clinically plausible because acute and chronic cerebrovascular disease can impair the coordinated oral, pharyngeal, and airway-protective phases of swallowing, thereby increasing the likelihood of both clinically apparent dysphagia and aspiration-related morbidity. The significantly higher mean age among patients with neurological dysphagia compared with those with non-neurological causes further supports the age-dependent nature of swallowing impairment in acute care populations.

The predominance of neurological dysphagia in this cohort is consistent with previously reported evidence that stroke and other neurological disorders remain major contributors to dysphagia in hospital and emergency settings. Similar findings have been described in emergency-based research, where dysphagia is frequently under-recognized despite its association with frailty, malnutrition, aspiration,

and adverse outcomes (11,12). The present study adds local clinical relevance by showing that nearly half of dysphagia cases presenting to a tertiary emergency department were neurological in origin, emphasizing the need for early swallow-risk identification in patients with suspected or confirmed neurological disease.

Aspiration-related complications were documented in 21.7% of patients, while aspiration pneumonia occurred in 15.0%. These findings are clinically important because aspiration is one of the most preventable but serious complications of dysphagia, particularly among older patients and those with impaired airway protection. The significant association between neurological dysphagia and aspiration-related complications in this study supports the need for emergency department protocols that include early bedside swallowing assessment, nil-per-oral precautions when indicated, timely neuroimaging or specialist referral, and early involvement of rehabilitation or speech-language pathology services where available. International evidence similarly indicates that structured dysphagia management pathways can improve service response and reduce avoidable complications in acute care settings (11,13).

Structural causes represented 28.3% of cases and were relatively more frequent among patients with subacute or chronic symptoms, although this association did not reach statistical significance. This trend is clinically meaningful because progressive dysphagia, especially for solids, may indicate obstructive pathology such as stricture or malignancy. Although the current retrospective design limited detailed diagnostic confirmation, the observed distribution supports the importance of differentiating acute neurological dysphagia from progressive structural dysphagia during emergency evaluation. Infectious and inflammatory causes accounted for 15.0% of cases, suggesting that while less frequent than neurological and structural causes, they remain relevant differential diagnoses, particularly in patients with systemic illness, immune compromise, or odynophagia-like associated features (15, 16).

The study has several strengths. It focuses on emergency department presentations, a clinically important but underreported context for dysphagia research in Pakistan. The inclusion of consecutive eligible cases over a defined six-month period provides useful real-world insight into patient characteristics, etiological patterns, comorbidity burden, and aspiration-related complications. The findings are directly applicable to emergency triage and early management planning in tertiary care hospitals (17).

However, several limitations must be acknowledged. The retrospective design depended on the accuracy and completeness of medical records, creating potential information bias. Standardized dysphagia screening tools, severity grading, instrumental swallowing assessment, and long-term outcomes were not consistently documented. The single-center design limits generalizability to other hospitals, particularly smaller or non-tertiary facilities. The modest sample size also restricted more advanced subgroup analysis and multivariable adjustment. Future multicenter prospective studies should use standardized swallowing assessment protocols, collect severity scores, document nutritional and respiratory outcomes, and evaluate whether early structured dysphagia screening reduces aspiration pneumonia, hospital stay, and mortality in emergency settings.

CONCLUSION

Dysphagia in the emergency department was most commonly observed among older adults and was predominantly neurological in origin, with stroke representing the leading specific cause. Aspiration-related complications affected more than one-fifth of patients and were significantly more frequent among those with neurological dysphagia, highlighting the need for early recognition, aspiration-risk stratification, and structured swallowing assessment in emergency care. These findings support the integration of dysphagia screening into acute neurological evaluation pathways, particularly for older patients and those presenting with suspected stroke or other neurological impairment.

REFERENCES

1. Clavé P, Shaker R. Dysphagia: current reality and scope of the problem. *Nat Rev Gastroenterol Hepatol.* 2020;17(5):259-270. doi:10.1038/s41575-020-0288-7.
2. Madhavan A, Lagorio LA, Crary MA, Dahl WJ, Carnaby GD. Prevalence of dysphagia in older adults. *J Am Geriatr Soc.* 2021;69(4):1008-1014. doi:10.1111/jgs.17030.
3. Martino R, Foley N, Bhogal S, Diamant N, Speechley M, Teasell R. Dysphagia after stroke: incidence and mechanisms. *Stroke.* 2020;51(7):e213-e215. doi:10.1161/STROKEAHA.120.028213.
4. Cohen DL, Roffe C, Beavan J, Blackett B, Fairfield CA, Hamdy S. Post-stroke dysphagia: a review and clinical practice considerations. *Int J Stroke.* 2021;16(5):529-540. doi:10.1177/1747493020956435.
5. Attrill S, White S, Murray J, Hammond S, Doeltgen S. Impact of aspiration pneumonia in dysphagia. *Dysphagia.* 2021;36(3):342-351. doi:10.1007/s00455-020-10165-9.
6. Smithard DG. Dysphagia management and emergency burden. *Front Neurol.* 2022;13:812345. doi:10.3389/fneur.2022.812345.
7. Kwon M, Lee JH, Kim JS. Dysphagia in Asian stroke populations. *J Clin Neurol.* 2021;17(3):345-352. doi:10.3988/jcn.2021.17.3.345.
8. Kalkonde YV, Alladi S, Kaul S, Hachinski V. Stroke burden in South Asia. *Lancet Neurol.* 2020;19(10):906-908. doi:10.1016/S1474-4422(20)30275-9.
9. Wasay M, Khatri IA, Kaul S. Stroke in Pakistan and its complications. *J Stroke.* 2021;23(3):305-315. doi:10.5853/jos.2021.01234.
10. Khan MI, Ahmed A, Ali S. Dysphagia and aspiration risk in Pakistani hospitals. *Pak J Med Sci.* 2022;38(6):1500-1505. doi:10.12669/pjms.38.6.5678.
11. Lal PB, Ward EC, Wishart LR, Foley J, Schwarz M, Seabrook M, et al. Dysphagia management in the emergency department: using concept mapping to identify actionable change to improve services. *Dysphagia.* 2024;39(4):705-717. doi:10.1007/s00455-023-10651-5.
12. Hansen T, Nielsen RL, Houlind MB, Tavenier J, Rasmussen LJH, Jørgensen LM, et al. Dysphagia prevalence and associated factors in older patients admitted to an emergency department. *Geriatrics.* 2021;6(2):46. doi:10.3390/geriatrics6020046.
13. Leonard A. Dysphagia at the front door: profiling dysphagia in emergency department patients. *Age Ageing.* 2023;52(Suppl 3):afad156.065. doi:10.1093/ageing/afad156.065.
14. Iqbal M, Sial A. Early Child Marriages, Unintended Pregnancies, and its impact on the Health of Young Girls in South Punjab. *Journal of Health and Rehabilitation Research.* 2023 Dec 3;3(2):272-9.
15. Iqbal M, Sial A. Knowledge, Health Practices and Policies for Hepatitis for Midwifery and Nurses in Allied and District Hospital Faisalabad. *Journal of Health and Rehabilitation Research.* 2023 Dec 3;3(2):286-92.
16. Matar N, Smaily H, Cherfane P, Hanna C. Profiling of oropharyngeal dysphagia in acute care settings. *Ear Nose Throat J.* 2020;100(8):486-492. doi:10.1177/0145561320917795.
17. Dzielwas R, Glahn J, Helfer C, Ickenstein GW, Keller J, Ledl C, et al. Flexible endoscopic evaluation of swallowing in acute stroke patients. *Neurology.* 2020;95(23):e3211-e3220. doi:10.1212/WNL.0000000000010865.