

Gasping for relief

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While in the hospital receiving treatment for re-emerging paranoia, Ms. A, age 62, chokes on a hot dog and dies a few days later. How could this have been prevented?



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CASE Food issues

Ms. A, age 62, has a 40-year history of paranoid schizophrenia, which has been well controlled with olanzapine, 20 mg/d, for many years. Two weeks ago, she stops taking her medication and is brought to a state-run psychiatric hospital by law enforcement officers because of worsening paranoia and hostility. She is disheveled, intermittently denudative, and confused. Ms. A has type II diabetes, gastroesophageal reflux disease, obesity (body mass index of 34.75 kg/m²), and poor dentition. She has no history of substance abuse.

During the first 2 days in the hospital Ms. A refuses to eat, stating that the food is “poisoned,” but accepts 1 oral dose of aripiprazole, 25 mg. On hospital day 3, Ms. A is less hostile and eats dinner with the other patients. A few minutes after beginning her meal, Ms. A abruptly stands up and puts her hands to her throat. She looks frightened, and cannot speak.

A staff member asks Ms. A if she is choking and she nods. Because the psychiatric hospital does not have an emergency room, the staff call 911, and a staff member gives Ms. A back blows, but no food is forced out. Next, nursing staff start abdominal thrusts (Heimlich maneuver) without success. Ms. A then loses consciousness and the staff lowers her to the ground. The nurse looks in Ms. A’s mouth, but can’t see what is blocking her throat. Attempts

to provide rescue breathing are unproductive because a foreign body obstructs Ms. A’s airway. A staff member continues abdominal thrusts once Ms. A is on the ground. She has no pulse, and CPR is initiated.

Emergency medical technicians arrive within 7 minutes and suction a piece of hot dog from Ms. A’s trachea. She is then taken to a nearby emergency department, where neurologic examination reveals signs of brain death.

Ms. A dies a few days later. The cause of death is respiratory and cardiac failure secondary to choking and foreign body obstruction. A review of Ms. A’s history reveals she had past episodes of choking and a habit of rapidly ingesting large amounts of food (tachyphagia).

Which of the following are risk factors for choking in mentally ill patients?

- a) poor dentition
- b) tachyphagia
- c) parkinsonism
- d) all of the above

The authors’ observations

The term “café coronary” describes sudden unexpected death caused by airway obstruction by food.¹ In 1975, Henry Heimlich de-

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scribed the abdominal thrusting maneuver recommended to prevent these fatalities.² For more than a century, choking has been recognized as a cause of death in individuals with severe mental illness.³ An analysis of sudden deaths among psychiatric inpatients in Ireland found that choking accounted for 10% of deaths over 10 years.⁴ An Australian study reported that individuals with schizophrenia had 20-fold greater risk of death by choking than the general population.⁵ Another study found the mortality rate attributable to choking was 8-fold higher for psychiatric inpatients than the general population,⁶ and a study in the United States reported that for every 1,000 deaths among psychiatric inpatients, 0.6 were caused by asphyxia,⁷ which is 100 times greater than the general population reported in the same time.⁸

Physiological mechanisms associated with impaired swallowing include:

- dopamine blockade, which could produce central and peripheral impairment of swallowing⁹
- anticholinergic effect leading to impaired esophageal motility
- impaired gag reflex.¹⁰

Multiple factors increase mentally ill individuals' risk of death by choking (*Table 1*).¹¹ Patients with schizophrenia may exhibit impaired swallowing mechanism, irrespective of psychotropic medications.¹² Schizophrenia patients also could exhibit pica behavior—persistent and culturally and developmentally inappropriate ingestion of non-nutritive substances. Examples of pica behavior include ingesting rolled can lids¹³ and coins^{14,15} and coprophagia.¹⁶ Pica behavior increases the risk for choking, and has been implicated in deaths of individuals with schizophrenia.¹⁷

Medications with dopamine blocking and anticholinergic effects may increase choking risk.¹⁸ These medications could produce extrapyramidal side effects and parkinsonism, which might impair swallowing. Psychotropic medications could

Table 1

Risk factors for choking in mentally ill patients

Age (>60)
Impaired swallowing (schizophrenia patients are at greater risk)
Parkinsonism
Poor dentition
Schizophrenia
Tachyphagia (rapid eating)
Tardive dyskinesia
Obesity
Source: Reference 11

increase appetite and food craving, which in turn may lead to overeating and tachyphagia. In addition, many individuals suffering from severe mental illness have poor dentition, which could make chewing food difficult.¹⁹ Psychiatric patients are more likely to be obese, which also increases the risk of choking.

Which strategies could help prevent choking in patients with schizophrenia?

- a) training staff on the proper use of abdominal thrusts (Heimlich maneuver)
- b) prescribing injectable antipsychotic medications
- c) using 2 antipsychotic agents to address psychotic symptoms
- d) educating mentally ill patients at risk for choking about safe eating habits

OUTCOME Prevention strategies

New Hampshire Hospital's administration implemented a plan to increase the staff's awareness of choking risks in mentally ill patients. Nurses complete nutrition screens along with the initial nursing database assessment on all patients during the admission process, and are encouraged to contact registered dietitians for a nutrition review and assessment if a psychiatric patient is thought to be at risk for choking. Registered dietitians

Clinical Point

Schizophrenia patients may exhibit impaired swallowing mechanism and pica behavior, which increases the risk of choking

Clinical Point

Ensure that all staff who care for patients are trained regularly on emergency first aid for choking victims

Table 2

American Red Cross guidelines for treating a conscious, choking adult

Send someone to call 911
Lean person forward and give 5 back blows with heel of your hand
Give 5 quick abdominal thrusts by placing the thumbside of your fist against the middle of the victim's abdomen, just above the navel. Grab your fist with the other hand. In obese or pregnant adults, place your fist in the middle of the breastbone
Continue giving 5 back blows and 5 abdominal thrusts until the object is forced out or the person breathes or coughs on his or her own
Source: Reference 20

work with nursing staff to promptly complete nutrition assessments and address eating-related problems.

Direct care staff were reminded that all inpatient units have a battery-powered, portable compact suction unit available that can be used in a choking emergency. The hospital's cardiopulmonary resuscitation instructors emphasize the importance of the abdominal thrust maneuver during all staff training sessions.

The hospital's administration and staff did not reach a consensus on whether physicians should attempt a tracheotomy when other measures to dislodge a foreign object from a patient's throat fail. Instead, the focus remains on assessing and treating the clinical emergency and obtaining rapid intervention by emergency medical technicians.

The authors' observations

The following recommendations may help minimize or prevent choking events in inpatient units:

- Ensure all staff who care for patients are trained regularly on emergency first aid for choking victims, including proper use of abdominal thrusts (Heimlich maneuver) (Table 2).²⁰
 - Educate staff about which patients may be at higher risk for choking.
 - Assess for a history of choking incidents and/or the presence of swallowing problems in patients at risk for choking.
 - Supervise meals and instruct staff to look for patients who display dysphagia.
 - Consider ordering a swallowing evaluation performed by a speech therapist in patients who manifest dysphagia.
 - Avoid polypharmacy of drugs with anticholinergic and/or potent dopamine blocking effects, such as olanzapine, risperidone, or haloperidol.
 - Teach safe eating habits to patients who are at risk for choking.
 - Contact outpatient care providers of patients at risk for choking and inform them of the need for further education on safe eating habits, a dietary evaluation, and/or a swallowing evaluation.
- Implementing these measures may reduce choking incidents and could save lives.

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Bottom Line

Patients with serious mental illness—especially those who are elderly, have poor dentition and eating habits, or take antipsychotics with anticholinergic and/or dopamine blocking effects—are at increased risk of death by choking. In inpatient settings, institutional measures and increased staff training could reduce the risk of choking in psychiatric patients.

Related Resources

- Hwang SJ, Tsai SJ, Chen IJ, et al. Choking incidents among psychiatric inpatients: a retrospective study in Chutung Veterans General Hospital. *J Chin Med Assoc.* 2010;73(8):419-424.
- American College of Emergency Physicians Foundation. What to do in a medical emergency. Choking. www.emergencycareforyou.org/EmergencyManual/WhatToDoInMedicalEmergency/Default.aspx?id=224.

Drug Brand Names



Aripiprazole • Abilify
Haloperidol • Haldol

Olanzapine • Zyprexa
Risperidone • Risperdal

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