“Suffocation Roulette”: A Case of Recurrent Syncope in an Adolescent Boy

We present the case of a 12-year-old boy admitted with a complaint of recurrent syncopal episodes. A careful history taking revealed the cause of the syncopal episodes to be a dangerous game played by adolescents called “suffocation roulette.” We believe that recognition of this game as a possible cause of syncopal events, together with prompt educative intervention, might prevent adolescent morbidity and mortality and also might eliminate the need for unnecessary medical investigations.

INTRODUCTION

Adolescents have acute and chronic medical problems, but the main sources of disease, death, and disability in this population result from risky behaviors and risky environments. The leading cause of death for adolescents and young adults (age 10 to 24 years) in both the United States and Canada is unintentional or intentional injury, which includes motor vehicle crashes or other unintentional injuries, homicides, and suicides. Together, these 4 causes account for almost 75% of deaths in this age group and for more than 80% of deaths of those aged 15 to 19 years.1

A variety of biological, psychological, social, and cultural factors contribute to the likelihood of involvement in risky behaviors. Health-risk behaviors and risky environmental factors occur together among adolescents.2 Unintentional injuries, including drowning, fires, and accidental firearms deaths, account for a large number of adolescent deaths.3 Alcohol and drugs are thought to be related to a considerable proportion of these fatalities.4 We would like to add to the list of practices causing unintentional injuries in adolescents a new game that causes repeated syncopal events.

We could not find any previous reports of such injurious games in the medical literature.

CASE REPORT

A 12-year-old boy with a medical history of mild asthma was brought to the emergency department by his father because of an episode of unconsciousness that lasted approximately 4 minutes. The patient did not recall any aura before his collapse and did not remember the events preceding his loss of consciousness. According to the history that was provided by his father, the patient collapsed while playing outdoors with his peers, who did not observe any tonic or clonic movements, change of facial color, urine or fecal incontinence, or salivation during the episode. The patient regained consciousness after approximately 4 minutes, walked back home, and was brought to the hospital. The patient stated that a similar episode of unconsciousness had occurred the day before.

The patient denied cigarette smoking, alcohol consumption, and use of illicit drugs or solvent inhalation. He could not recall the events preceding both episodes of unconsciousness and denied physical abuse by his peers. The patient’s older brother provided additional information, stating that the patient was confused and sleepy on returning home from both episodes.

On arrival at the ED, the patient was fully alert, with blood pressure of 128/75 mm Hg, supine pulse rate of 78 beats/min, and temperature of 36.4°C (97.4°F), with normal orthostatic changes. The physical examination revealed right occipitoparietal scalp tenderness with normal neurologic examination results and no other abnormal physical findings. The patient’s CBC count, electrolyte level, serum glucose level, blood urea nitrogen level, and urinalysis results were normal. The ECG was interpreted as normal sinus rhythm with a normal QTc interval.

The patient was admitted with a diagnosis of recurrent syncope for observation and further evaluation. Our primary differential diagnosis included epilepsy, brain tumor, cardiac dysrhythmia, and substance abuse. The primary workup plan included an ECG, head computed tomography, and inpatient consultations with a neurologist and a cardiologist.

On the morning after admission, the patient complained of a worsening headache with no change in his physical examination results. A computed tomographic scan demonstrated mild right parietal subcutaneous tissue swelling, with no evidence of fracture, fresh bleeding, or midline shift.

The cause of the recurrent episodes of unconsciousness was revealed on a projective manipulation performed by one of our physicians. During a discussion with the patient’s brother about a neck-choking game played by “children,” the physician suddenly addressed the patient with a question: “Do you know this game?” The patient said that he did, adding, “That is not the correct description of the game.” The patient then described a game in which 1 player takes a deep

224 ANNALS OF EMERGENCY MEDICINE 41:2 FEBRUARY 2003

SUFFOCATION ROULETTE” AND RECURRENT SYNCOPE

Shlamovitz et al
breath and holds it while another participant hugs him
strongly from behind until “I” feel dizzy and pass out.
The patient noticed his slip of the tongue and admitted
that this was the cause of his syncopal episodes and
added that in the current episode, he probably fell down
and hit his head on the floor. He reported at least 4 pre-
vious episodes and added that sometimes the game is
played in a pair and that the “loser” is the one who passes
out first. The patient denied any exhilaration or orgas-
mic sensations during the practice of this game and
stated that the thrill of the game is watching the victim
pass out and then regain consciousness.
A social worker’s interview with the patient and his
family revealed that the patient moved to a new school at
the beginning of this year and was not socially accepted
among his new classmates. The patient’s feeling of being
socially rejected in his new school seems to be the main
reason for his willingness to participate in this danger-
ous game, seeking acceptance into a group of peers.
The morbidity and mortality risks of this game were
explained to the patient, and he was instructed not to
participate in such a game. The headache subsided, and
the patient was discharged with a follow-up by his pedi-
atrician and the municipal social services.
We contacted the Israeli National Association for
Child Protection to learn about the scope of this game.
Only 2 reports were filed with the association about sim-
ilar games. In the first report, the participants used tow-
els to apply constricting force around their necks until
one of them passed out. In the second report, 2 victims
took a deep breath and were then manually strangulated
by 2 other participants. In both reports, all participants
were male, and the victims experienced mild head
trauma from falling and were transported to an ED.

**DISCUSSION**

In the United States, a teenager attempts suicide every
78 seconds, commits suicide every 90 minutes, dies in
an accident every 20 minutes, and is murdered every 90
minutes. Mortality statistics represent only one aspect
of adolescent health status. For every fatal injury,
approximately 41 injuries require hospitalization, and
at least 1,100 injuries are evaluated in an ED. For every
fatality from a motor vehicle crash, there are more than
100 injuries. For every gun-related death, there are 5 to
7 gun-related injuries.1

This case report provides insight about a dangerous
game played by adolescents called “suffocation roulette.”
We hypothesize that the mechanism of loss of con-
sciousness in this case has 2 components. The first
relates to the hypoxia that results from both the breath
holding and the external limitation of chest wall expan-
sion. The second component relates to hemodynamic
depression caused by the increased intrathoracic pres-
sure, which results in both decreased preload and
decreased heart rate that together reduce the cardiac
output to the point of syncope.

On the basis of the hypothesized pathophysiologic
nature of this game, we deduced that its possible com-
plications are similar to those of syncope, hypoxia,
external chest compression, and the resulting fall. We
believe that the more common complications include
soft-tissue injuries and minor fractures resulting from
both the chest compression and the fall.
The characteristics of this game differ from a para-
philia called the syndrome of autoerotic asphyxiation
that can be encountered in adolescents. Autoerotic
asphyxiation syndrome has been described as “eroti-
cized repetitive hanging.” Also known as asphyxophilia
or hypoxyphilia, it is a paraphilia of the sacrificial type
in which sexual arousal and attainment of orgasm
depend on self-strangulation and asphyxiation up to,
but not including, loss of consciousness.6 The fatal vic-
tim of autoerotic asphyxia is typically a single male aged
15 to 29 years. Autoerotic sexual activity is typically
performed in isolation; often there is evidence of repeti-
tive practice. Accidental death usually results when the
safety mechanism designed to alleviate neck compres-
sion fails.7 The game described in this case report is
practiced in a group of peers and not alone, reportedly
does not include sexual contexts, and seems to be
 driven by peer pressure and risk seeking rather than
erotic impulses.
We believe that this dangerous game should be brought to the attention of parents, physicians, educators, and social service personnel. Recognition of this game as a possible cause of syncopal events, together with prompt educative intervention, might prevent adolescent morbidity and mortality and might also eliminate the need for unnecessary medical investigations.

Received for publication July 24, 2002. Revision received August 26, 2002. Accepted for publication September 5, 2002.

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REFERENCES


