

adults with suspected or proven PTE are considered candidates in case of cardiac arrest. The list includes the American [9], the European [3], the English [10] and the Australian & New Zealand guidelines [8]. The European guidelines recommend *pre-hospital* application of fibrinolytic therapy for PTE patients who have been resuscitated out of hospital [3].

There have been reports about PTE patients with cardiac arrest treated successfully using each of the available fibrinolytics. Furthermore, if the diagnosis had been obtained rapidly and cardiopulmonary resuscitation (CPR) had been provided appropriately, the PTE group with cardiac arrest may have a survival rate of up to 75%, as evidenced in the series of 67 patients [11]. In this group, thrombolysis can improve a return of the spontaneous circulation (ROSC) as well as in-hospital survival. Moreover, fibrinolysis in PTE patients with cardiac arrest, may diminish neurologic complications during the long-term follow-up, as found in a meta-analysis [12]. Additionally, results of the recent study suggest that *tissue-plasminogen activator* (TPA) (50 mg, i.e., “safe” or “half” dose) over 1 min can diminish right ventricle pressures and improve the survival in PTE patients with cardiac arrest and PEA (because at 22 months following the discharge, 87% of the patients were alive) [4]. If the first dose of 50 mg TPA is ineffective, a further 50 mg bolus is recommended [13]. Surprisingly, major hemorrhages have not occurred [4].

Presently, the predominantly excellent guidelines, separate PTE patients in the following manner. The 2014 European Society of Cardiology PTE guidelines recognizes 1) high; 2a) intermediate-high; 2b) intermediate-low risk; and 3) low risk [14]. The 2013 Spanish PTE guidelines cite: 1) Non-massive, or low-risk; 2) Standard risk; 3) Sub-massive, or intermediate-risk; and 4) Massive, or high-risk [15]. Today, for important new information and recommendations on thrombolysis in PTE patients with cardiac arrest, one ought to utilize only the guidelines for resuscitation. This is certainly the most appropriate place, in as much as are the guidelines for PTE. Having such information (about fibrinolysis in PTE patients with cardiac arrest) it is also the case that the PTE guidelines may improve the knowledge of the readers – it is the general rationale for writing the guidelines. Considering the prevalence, extensive morbidity and the highest mortality in PTE, it is clear that the learned recommendations for such patients with cardiac arrest ought also to be incorporated within the PTE classification, in as far as the risk stratification is considered.

This can improve and further our understanding of the PTE spectrum and consequently expand the guidance for treatment. Equally, adding the resuscitation group to PTE risk stratification scheme close to the high-risk group (patients with shock – hypotension), may enable better differentiation between the two. For example, the need for concrete, direct comparisons can become more evident: as fibrinolysis should be considered for patients in both groups, should it be TPA preferably? If so, what dose and how quickly should the administration be for resuscitation versus shock – hypotension PTE group? Unfractionated heparin (UFH) is the only concomitant parenteral anticoagulation which has been studied, but what is the optimal timing? Should the approach to UFH be the same for the resuscitation group and shock – hypotension group? Under what circumstances can fibrinolysis be recommended as a pre-hospital treatment?

Conclusion: The resuscitation group of PTE should be incorporated and separated from others in the PTE risk stratification schemes. Reasons for this are the following: the highest mortality in this group, clear distinction from other groups in the clinical presentation, the need for a special diagnostic algorithm and for the sake of the completeness of classification (risk stratification scheme). It is strongly recommended that such a critical group be included hence it cannot be afforded to ignore it within the guidelines.

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YouTube and risky behaviors in adolescents: The “choking game”



Adolescence is a period in which many individuals experiment with risky behaviors and activities. One such activity, the “choking game,” is a strangulation activity in which pressure is applied to the neck/carotid artery to limit blood flow and oxygen, and once this pressure is released, as blood and oxygen rush back to the brain, a ‘high’ or euphoria is sometimes achieved [1]. This pressure can be achieved using ligatures such as belts or neckties, or by utilizing another person’s hands. Estimated participation rates in the choking game range anywhere from approximately 6% to 12% for adolescents, resulting in a CDC estimate of as many as 100 deaths occurring annually [2,3]. Although there is evidence suggesting the choking game has been practiced for years, the creation of YouTube in 2005 enabled dissemination of recorded videos of people

Table 1
Choking techniques (N = 194)

Squat/bend at waist, hyperventilate, stand quickly; choker applies pressure on neck/chest	80 (41%)
Squat, hyperventilate, stand quickly, Valsalva maneuver/hold breath	56 (29%)
Stand, ±hyperventilate; choker applies pressure on neck/chest	31 (16%)
Sleeper hold	15 (8%)
Ligature (towel, belt, rope)	12 (6%)

demonstrating and participating in the practice, propagating and possibly normalizing the behavior [4]. The primary aim of this proposal was to characterize the popularity, pattern, and descriptions of the “choking game,” a high-risk adolescent activity that is easily and often viewed on the video-sharing Web site YouTube.

We conducted a retrospective content analysis study. Using YouTube's search engine, data was collected by searching for videos on YouTube using 36 different terms for recreational partial asphyxiation, such as “space monkey,” “choke out,” “elevator,” “fainting game” and “funky chicken.” We did not analyze videos without sound, duplicate content, news reports, or public service announcements. Videos were identified and viewed between November and December 2014. Results were sorted by the number of views using YouTube's sort function (i.e., from most to least viewed).

Videos were examined across a number of key quantitative and qualitative descriptive variables, including the length of the video, number of views, and video quality. Standardized abstraction forms were used to guide data collection. Three abstractors were trained using a set of “practice” videos; the training consisted of initially reviewing videos with respect to each variable and discussing coding guidelines. One of the investigators (JSJ) met frequently with abstractors to resolve questions. Descriptive statistics and frequency tables were used to describe research findings. Interrater reliability was determined using the Kappa score.

During the 2-month study period, 194 YouTube videos of the choking game were identified. The videos were collectively viewed 1,671,642 times on YouTube with the mean number of views per video being 8601. These videos were marked as a “favorite” a total of 6178 times with an average of 31.8 times per video. Ninety-four videos (49%) documented a group event with several participants concurrently choking themselves but the other 100 videos documented a single asphyxia event. In total, 620 participants or observers were identified in the videos; most were male (78%). Fifty-one percent of people identified in the videos appeared to be Caucasian; 29% appeared to be African-American, and 16% appeared to be Hispanic. The estimated age of participants was 11 to 15 years in 65% of the videos. The activity usually took place in a private setting (161 videos, 83%) with the remaining 33 undertaken in a public location. The choking technique used varied considerably (Table 1). The most common practice involved the subject squatting or bending, followed by standing rapidly. Then the choker applied pressure to the chest or neck until consciousness was lost. Some variant of this technique was employed in 79 videos (41%). Neurologic sequelae following asphyxia were loss of consciousness (92%) and hypoxic seizures (28%). Participant's reaction upon recovery included behavioral changes (41%), confusion/disorientation (31%), euphoria (13%) and hallucinations (2%). Interrater reliability was calculated across 30 videos using the Kappa score (Kappa = 0.83).

YouTube has enabled millions of young people to watch videos of the “choking game” and other dangerous activities. With over 1.3 billion people using the website, and 300 h of video being uploaded each minute, the scope of the dissemination of information is staggering [5]. Seeing videos demonstrating or relaying information about the “choking game” may normalize and reinforce the behavior among adolescents. Parents, teachers, and health care professionals need to be aware of the scope of this activity and its prevalence on YouTube. Frank discussions

and open communication with adolescents about both long- and short-term dangers of partial asphyxiation, including chronic headaches, short-term memory loss, seizures, concussions, stroke, brain damage and death, should be communicated [3]. Further work is needed to identify effective prevention efforts that can be integrated into existing health curricula, as well as to inform parents, teachers and health professionals of signs and signals to look for if they suspect children may be participating in this dangerous and sometimes deadly behavior.

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A time of day for aggressive behavior? Possible insights for ED personnel



To the Editor:

Todd et al. recently demonstrated that aggression propensity exhibits a circadian pattern, with a peak in the evening, and this daily variability is directly modulated by a circuit of hypothalamic nodes, mediated by GABAergic subparaventricular zone (SPZ^{GABA}) transmission [1].

What, will you wondering, has it to do with the emergency department (ED) activity?

Aggressive behavior has different forms and definitions. Animals express proactive aggression, a low arousal, calculated behavior intended to obtain a reward. Humans, more frequently exhibit reactive aggression, characterized by high arousal and impulsivity, as a response to a potential threat. This latter type of aggressive behavior represents