Autoerotic Asphyxiation: Secret Pleasure—Lethal Outcome?

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asphyxiation, "choking games," hypoxia/anoxia, lethal, masochism/sadism, sexual stimulation, suffocation, suicide

ABBREVIATION
AEA—autoerotic asphyxiation

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WHAT'S KNOWN ON THIS SUBJECT: Centuries old, AEA first appeared in medical literature in 1856. Etiology is speculative, and the majority of reports deal with fatal cases. Distortions of normal development on the basis of psychoanalytic theories are the most prevalent understanding of the disorder.

WHAT THIS STUDY ADDS: AEA is little known beyond forensic medicine and is generally regarded as a curiosity rather than a medical disorder whose onset is in childhood or adolescence. This study adds understanding of causation and provides guidance to pediatricians on recognition and management.

abstract

OBJECTIVE: Voluntary asphyxiation among children, preteens, and adolescents by hanging or other means of inducing hypoxia/anoxia to enhance sexual excitement is not uncommon and can lead to unintended death. This study addresses autoerotic asphyxiation (AEA) with the intent of increasing pediatricians' knowledge of the syndrome and awareness of its typical onset among young patients. AEA is characteristically a clandestine and elusive practice. Provided with relevant information, pediatricians can identify the syndrome, demonstrate a willingness to discuss concerns about it, ameliorate distress, and possibly prevent a tragedy.

METHODS: A retrospective study was undertaken of published cases both fatal and nonfatal and included personal communications, referenced citations, clinical experience, and theoretical formulations as to causation. Characteristic AEA manifestations, prevalence, age range, methods of inducing hypoxia/anoxia, and gender weighting are presented. All sources were used as a basis for additional considerations of etiology and possibilities for intervention.

RESULTS: AEA can be conceptualized as a personalized, ritualized, and symbolic biopsychosocial drama. It seems to be a reenactment of intense emotional feeling-states involving an identification and sadomasochistic relationship with a female figure. Inept AEA practitioners can miscalculate the peril of the situation that they have contrived and for numerous reasons lose their gamble with death.

CONCLUSIONS: Pediatricians should be alert to the earliest manifestations of AEA. Awareness of choking games among the young and, of those, a subset who eventually progress to potentially fatal AEA is strongly encouraged among all primary care professionals who may be able to interrupt the behavior. *Pediatrics* 2009;124:1319–1324

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Autoerotic asphyxiation (AEA) is a clinical syndrome that is classified in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision* as a paraphilia, not otherwise classified.[1] It has been recognized for centuries in many cultures but did not appear in medical literature until 1856[2] and 1866.[3] Little is known with certainty about its etiology or how widely dispersed individuals learn of the practice. It is estimated that there are 250 to 1200 deaths annually from AEA in the United States, although a 7-year retrospective study by Sauvageau in one Canadian province suggested a lower incidence of autoerotic deaths and a higher percentage of female and "atypical" autoerotic fatalities than previously reported in US studies.[4] Estimates are almost certainly inaccurate, however, because the practice is characteristically enacted in secret, most cases do not end fatally (are therefore rarely reported), the activity is usually unknown to family and friends, and it is generally unrecognized by medical professionals. Troubled youth, of either gender, may engage in AEA for purposes of sexual experimentation. Authorities may be importuned by a decedent's distraught family to declare the death a suicide especially if they have discovered the death scene; Burgess and Hazelwood[5] detailed the impact on the family in such cases that calls for professional attention.

The earliest manifestations of AEA may be so-called "choking games" among school-aged children, which seem to be increasing. These activities are known among teachers and educators from elementary grades through high school (T. LeGrow, PsyD, verbal communication, January 2009), and "highs" are also produced by vagal stimulation via a Heimlich-like maneuver (S. Lerfold, MD, verbal communication, February 2009). Anthropologists have recognized them in studies of primitive Celtic culture as well as among certain Native American and Eskimo children who engage in games of risk-taking involving suffocation called "Smoke Out" and "Red Out."[6] Andrew and Fallon[7] noted an increase in lethality among young, risk-taking adolescents who engage in these asphyxial or choking games increasingly by using ligatures in solitary circumstances. These games are suggestively described: Black Hole, Black Out, Flatlining, Funky Chicken, Space Monkey, Suffocation Roulette, Gasp, Tingling, and Knock Out, among others.[8] The authors' series of 24 fatal cases, aged 9 to 16, suggests that when these youngsters see that the activity can be conducted without drugs, they falsely believe that they can create a "safe" high.

The number of adult practitioners who engage in AEA is unknown, much less the number of children and adolescents involved in asphyxial games. AEA has achieved notoriety in television dramas and "talk shows." There are, in fact, reports of AEA deaths related to such programming.[9] These portrayals are not helpful, because they sensationalize the practice and do not treat it as a little-known but dangerous medical disorder. For these reasons, it is important that primary care professionals and especially pediatricians be informed about AEA, its manifestations and possible interventions.

TABLE 1 Impediments to Identification of AEA

1. Patient embarrassment/shame
2. Anticipation that disclosure will result in the physician's discomfort, provoking judgment, repugnance, condemnation, or rejection (in part, this may represent a projection of his or her own self-condemnation upon the physician).
3. Paraphilic thoughts/behaviors are experienced by the patient as odd but ego-syntonic and thus not a problem.
4. The physician's discomfort in taking a sexual history may stem from concerns involving his or her own sexuality or paraphilic thoughts or behaviors, resulting in distancing from similar behavior in the patient.
5. The patient's view that behavior that others regard as deviant ("abnormal"), whether experienced as acceptable or unacceptable to himself or herself, is a private matter that has no bearing in his or her consultations with physicians for what they regard as purely medical (or even psychiatric) reasons.
6. The physician lacks knowledge of paraphilias and their manifestations, course, and preventive and therapeutic options.
7. The sexual behavior of choking games or AEA may (mistakenly) be regarded as "harmless" or "victimless" by either the AEA practitioner or the physician.

Impediments to revelation of sexual practices (unusual or otherwise) are described in Table 1, and findings that should raise suspicion are listed in Table 2. It would be expedient for pediatricians to be familiar with paraphilias and especially the phenomenon of AEA in order to use a matter-of-fact, nonjudgmental approach when inquiring about it. Development of tolerance and respect for the great variety of sexual experiences, thoughts, and behaviors, often culturally conditioned, on the part of physicians as well as their patients is helpful. Even when no form of AEA is acknowledged, the patient will be comforted by the nature of the questions, which indicate that the pediatrician is informed about, open to discussing, and not repelled by an activity about which they themselves may be curious, troubled, or self-condemnatory; in time, they may be able to disclose their unique story. AEA is a good example of the principle that patients are more likely to reveal what is important to them when they believe that a physician is able to tolerate the information without risking dismissal, disapproval, or condemnation. This is true of many issues that trouble patients and none more so than those

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TABLE 2 Clues for Suspecting AEA

1. Bruises of the neck or recurrent syncopal episodes in a child or an adolescent should prompt the pediatrician to inquire about "choking games" or the more elaborate AEA syndrome. (Physicians may be unaware that choking may engender feelings of pleasure, erection, and even orgasm.)
2. Hesitant/tangential responses to a sexual history (in an adolescent) do not confirm AEA but may warrant additional inquiry (eg, "Do you ever play with death?" "Have you ever experienced giddiness or sexual stimulation if you are temporarily deprived of oxygen by choice or accident when roughhousing, inhaling a substance, or playing a choking game?" "Do you engage in risk-taking related to sexual stimulation or behavior?").
3. Is there evidence in the physical examination that an orifice has been repeatedly subjected to foreign-body insertion?
4. Are there unusual, unexplained urogenital, vaginal, or anal injuries?
5. Does the child or adolescent express concerns about sexual matters?
6. Do abrasions found on limbs, wrists, ankles, or trunk suggest bondage or binding activities during masochistic practices? Is there ornamental piercing of intimate body parts?
7. Are there erythematous or ligature marks on the penis or base of the scrotum?
8. Do family members express concern about choking games that they have observed or heard about whether in their adolescent or their friends?

that involve spirituality, sexuality, or death. The practice of AEA can involve all 3.

METHODS

By accessing PubMed-Medline, I found 112 articles on AEA from 1950 to 2008, most in English, others in world literature. Published principally in forensic medicine/pathology, legal medicine, and toxicology journals, the great majority describe fatal cases (often initially but erroneously considered suicides.) Rare reports from AEA survivors; classics of world literature and drama; discussions with colleagues in general pediatrics, emergency and family medicine, psychiatry, and child psychology; referenced citations; and relevant psychoanalytic literature were all considered. The following representative sample of case reports is illustrative of age range, gender weighting, clinical manifestations, course, and geographic distribution.

Sauvageau and Racette[10] in Canada, by using Medline and all possible key words in their search of the literature from 1954 to 2004, found 408 published fatal cases ranging in age from 9 to 77 years. Shields et al[11] found 40 accidental fatalities in Hamburg, Germany, between 1983 and 2003, all male, 13 to 79 years of age. Jones et al[12] in Edinburgh, Scotland, reported 30 deaths from 1984 to 1988, all from plastic bag asphyxiation, aged 13 to 81 years. Byard et al[13] studied 8 rarely reported deaths in females and found distinctive differences vis-à-vis males. Among scant child and adolescent literature, Friedrich and Gerber[14] took extensive histories from 5 adolescent male practitioners; each demonstrated childhood experiences with choking associated with egregious physical and sexual abuse. The terror felt by children and adolescents who, with fading consciousness, suddenly realize that escape mechanisms have failed and that death is imminent is unimaginable.

Herman Melville described the eroticization of hanging in "Billy Budd" as did Heinz Ewers in "Alraune." In Thomas Beckett's "Waiting for Godot," Vladimir and Estragon discussed stimulating ways of alleviating their boredom by hanging themselves while waiting for Godot.[15–17] Marquis de Sade described AEA in the same erotica in which sadism is eponymous.[18]

Curran et al[19] claim that each individual develops his or her own AEA techniques, which become embellished and elaborated over time. Like other investigators, they found that to one degree or another, fatal cases presented a characteristic profile or syndrome (Table 3). They described stages ranging from early "sex play" (asphyxial games) to suspension activities in later adolescence and adulthood, including nudity, and, unlike females, with paraphernalia consisting of mirrors, pornography, bondage, and transvestite/fetishist articles such as female clothing. Atypical features were noted in 10% of cases that did not necessarily involve asphyxiation, including unintentional electrocution (cardiac arrest), whole-body wrapping (hyperthermia), foreign-body insertion (air embolism), and aquatic submersion (drowning). They did not consider asphyxial games as a *forme fruste* of AEA but rather a simpler, less elaborate, nonritualized activity without the need for escape mechanisms, pornography, and cross-dressing, which are typical of fully developed AEA, yet their description of stages suggests a possible link between early and later forms.

DISCUSSION

Areas of Consensus

Investigators agree that autoerotic behavior has a childhood or adolescent onset; that males outnumber females

TABLE 3 Characteristics of Fatal AEA Cases

Partial or complete asphyxiation while often but not always engaged in masturbatory activity
Neck constriction by ligature or rope, asphyxiation by plastic bag and masks often with inhalants (nitrous oxide, trichloroethane, butane, chloroform, and others)
Partial or complete nudity
Binding of head, trunk, extremities, or genitals
Insertion of dildos or other objects per rectum (or vagina)
Pain, real or simulated, associated with occasional evidence of self-mutilation
Pornography or bondage literature
Mirrors positioned so that "victims" may see themselves in the predicament in which they have placed themselves (or were placed in their erotic fantasy)
Transvestic elements, usually fetishist articles of feminine clothing (eg, undergarments, brassieres, dresses)

Adapted from ref 19.

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(as much as 50:1); and that it is a clandestine, often solitary, potentially lethal practice usually without suicidal intent among youthful practitioners. No biological or genetic markers have been identified. Postmortem findings are consistent with cerebral anoxia and physical findings related to its induction (eg, rope, ligature, suffocation). Money[20] suggested, however, that because certain medications have been modestly beneficial in treating paraphilias, there could be an anatomic and neurochemical basis for these behaviors.

Etiologic Theories

Traditional conceptualizations of AEA (and other paraphilias) rely on psychoanalytic concepts related to Freud's theory of psychosexual development. Resnik,[6] for example, described AEA as "eroticized repetitive hanging," noting no apparent wish to die and attempts to ensure that no visible mark would be detectable (suggesting concealment rather than suicidal intent). He reviewed other clinicians' case reports and found common themes that he regarded as "upward displacement of castration anxiety" (ie, from the penis to the neck); others included oral sadism,[21] conflicts over oral incorporation by the mother and issues of separation/individuation, conflicts over bisexuality,[22] identification of the male enactor with the aggressor (mother or a female surrogate) according to Lowenstein,[23] and conflicts or guilty anxiety over masturbation with or without incest fantasies.

Resnik speculated that the neonate could feel smothered during unrelieved breastfeeding as well as during breath-holding while crying yet both associated with pleasurable sensations. He opined that these might be the earliest determinants of the search for similar sensations in later life (ie, heightened sensual experiences induced by hypoxia/anoxia/hypercapnia by means of neck compression, partial suffocation, or other methods). It is possible that pleasurable sensations in the infant/child from being playfully tossed in the air and caught by an adult (usually father) may also bear a relationship to later sexually stimulating experiences during suspension and hanging.

Resnik theorized that there is a (virtual life and death) conflict for the infant between pleasurable sensations from unrelieved breastfeeding and the threat of suffocation, itself also associated with pleasurable sensations (one individual described recurrent, disturbing childhood dreams to me of being "smothered by white billows"). Resnik did not address nonbreastfed infants; I found no references to AEA among practitioners who had been bottle fed.

Forensic Pathology

Danto[24] noted that up until 1980, there was only one report of a female and suggested that "the perversion reenacts (on an unconscious basis) the male victim's feelings of emasculation by his mother (or via the mechanism of displacement by another dominant-appearing female) who is seen as a powerful woman who controls her son's masculinity: if he "dies" while he is wearing female attire, symbolically and on a fantasy level, his (unconscious) linkage is that it is his mother who "dies" (ie, is put to death.) In Danto's view, the fantasy creator identifies with the victim. I concur with Danto, and an elaboration of this scenario is that when the sacrificial victim becomes the simultaneous murderer of his heartless seducer, the helplessness and powerlessness that he himself once felt is inflicted on her. Wesselius and Bally[26] described just such a case in which hate/rage for both parents was combined with male–female, dominant–submissive, and sadomasochistic themes. It is no wonder that the complexity and persistence of this activity is mystifying to practitioners and its etiology obscure to researchers! Whether a mirror-image of these scenarios occurs with female practitioners is unknown; however, it is important to note that most estimates of autoerotic behavior among females are low (~4% in series of fatal cases), although they may be biased by cultural or societal taboos about acknowledging and reporting autoerotic behavior among women: a clinician would be well advised to include females, young or older, in contemplating the presence of autoerotic behavior.

Core Dynamics

In fully developed AEA, the male enactor assumes the role of a willing—or unwilling—sacrificial "victim" of a female who is perceived as being imperious and indifferent to the victim's struggle to comply with her fantasied demands. AEA can thus be understood as a reenactment (or "acting out") of powerful feeling-states originally related to a female (mother or surrogate). This "plot," dimly understood if at all by the reenactor, may also represent a symbolic death for lustful thoughts and guilt-inducing masturbatory behavior (ie, punishment before pleasure!). In "surviving" the play-acting death ritual, the individual emerges, time after time, sexually gratified and physically intact with a sense of relief, triumph, and contempt/resentment (ie, "You think I have died for you, but actually I killed you!"). AEA also involves a desire for control over the anxiety of life versus death: the closer the reenactor approximates yet cheats death, the greater the sexual excitement. It is indeed a curious state of affairs that the reenactor is the producer, director, choreographer, judge, actors, and witness in his or her unique, personalized

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drama. In essence, AEA reenacts a "life story" of unmanageable childhood trauma/conflicts. In Freud's view, the repetition would be a compulsive but futile attempt to resolve those conflicts.[26] "Learned helplessness" and demoralization could also be temporarily relieved by the exhilaration of AEA.[27]

Vicissitudes

The normal developmental process of separation-individuation from parents can be difficult for a child with a controlling, demanding, or possessive mother and with a father or surrogate who is devalued, ineffective, passive, distant, or hostile. Under such circumstances, the male child's unhappy, unstable (unconscious) identification is with both a powerful, demanding, and intimidating female and a distant, threatening, or devalued male; if the male child witnesses maternal abuse, then the identification with her will also be one of protectiveness. These identifications are repressed, and the child/adolescent is left with an unstable sense of who he or she "really is." Humiliation and debasement also seem important in AEA exemplified by nudity expressing the reenactor's low self-image (accentuated in adolescence but reflecting narcissism and exhibitionism as well) acted out before a female and a fantasied "witness" (father?). The erotic tension is heightened when the reenactor fantasizes that his or her own personal status is either superior or inferior to that of the female images (a dominance–submission scenario). From this perspective, pornography is not only an aid to arousal but also transforms ostensibly bizarre behavior into a veiled and poignant replication of highly conflicted relationships with key figures from that person's past. Practiced long enough, fantasied relationships can erode, replace, or avoid entirely the need/desire for a mature relationship of mutuality with an actual partner.

Interventional Options

Although it is unrealistic to expect general pediatricians to become experts in the management of complex biopsychosocial disorders such as AEA, familiarity with this paraphilia will be helpful in identifying and discouraging child/adolescent choking games that can progress to fully developed AEA. Uva,[28] for example, recommended preventive strategies such as including AEA in national or state electronic injury data systems, including such practices in school sex education programs for students and parents, and discouraging television producers from sensationalizing AEA. She would also teach mothers of newborns how to breastfeed infants properly to avoid partial asphyxiation and the hypothesized suffocation cycle (a technique generally taught to mothers who are breastfeeding).

In some adult male paraphilics, reduction of the sex drive with an antiandrogen, such as medroxyprogesterone acetate (to lower testosterone levels), has been used successfully.[20] selective serotonin reuptake inhibitors, amyl nitrite, and lithium carbonate have been used with modest benefit in some adult paraphilics, perhaps most effectively when attention-deficit disorder, a comorbid mood disorder, or obsessive/compulsive disorder is present.[27,29] It is not recommended that any of these treatments for AEA be used in children or adolescents, because no large-scale double-blind studies have been conducted on medication use for that purpose.

Educational content about AEA should be included in medical, nursing, and psychology curricula and for residents in primary care fields, psychiatry, and emergency medicine. It should be emphasized that choking practices are capable of causing unconsciousness in 7 seconds with as little as 7 pounds of pressure on the carotid sinus or carotid arteries.[30] Literary works such as "Waiting for Godot" and "Billy Budd" could be used in schools as incidental vehicles to discuss the peril associated with asphyxial games (in a manner that does not encourage experimentation but that would be no more "suggestive" than instruction on "safe sex" and condom use in primary grades). When opportunities present, pediatricians should be encouraged to speak to youngsters, parents, and teachers about choking games in the course of advocating other healthy lifestyle choices such as those on nutrition, immunizations, exercise, avoidance of addicting substances, and routine helmet and seatbelt use.

Comorbidities of mood, anxiety, or substance abuse disorders can "unmask" paraphilias (AEA) and should be treated. Although anlage of AEA are most likely found among unmanageable early childhood conflicts that deflect and disturb the usual developmental course, they may be repressed by unconscious defense mechanisms. Intercurrent scholastic, peer, or family stressors (including violence and abuse) and pubertal hormonal changes together with idiosyncratic factors in the child/adolescent can overwhelm defenses, and AEA would then be manifested. Perhaps these are among the reasons that some asphyxial gamers develop the full AEA syndrome and others do not.

Beyond consciousness-raising and educational opportunities, pediatricians would be well advised to consult with child psychiatrists or child psychologists who have experience in treating sexual disorders if additional therapeutic interventions are thought necessary. Interruption of a progression from choking games to fully developed AEA may require not only medication for comorbidities but also attention to Burgess's aforementioned psychoso-

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cial dimensions of issues for survivors and those who have observed autoerotic behavior but do not know what to do about it. Longer term treatment may consist of individual psychotherapy for the child/adolescent as well as psychoeducation and family psychotherapy. This is indicated when one or both parents deny the behavior, feeling embarrassed and defensive when confronted by this disturbing problem in their offspring. Therapeutic interventions must be employed skillfully lest parental anger and rejection aggravate the problem, driving the practitioner deeper into his or her solitary reenactments—or worse.

CONCLUSIONS

I believe that AEA represents a compulsion to reenact and thereby discharge (act out) intense feeling-states derived from distortions of very early development. Whenever and however it begins, sexual exhilaration produced by hypoxia/anoxia/hypercapnia, identification with females by cross-dressing, sadomasochistic scenarios, humiliation, and debasement, as well as "plot" embellishments and paraphernalia, seem to be characteristic of AEA, especially in males, more so with advancing age.

The momentary exhilaration that AEA provides often leads to a lifetime of shame, mystification, self-condemnation, self-isolation, and hopelessness that can end in suicide. In recognizing AEA and when possible interrupting its course, a pediatrician may save a young life or at least alleviate a secret burden. It has been suggested that educational efforts to lift the veil of silence on these practices would not be preventive but rather would lead to imitative experimentation by thrill-seeking, troubled children or teens. That premise seems unrealistic, because AEA seems to be more common than previously thought and, like other high-risk activities among this age group, should be discouraged by medical professionals.

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