Body Found in Water Investigation

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For the New York City Office of the Chief Medical Examiner

40-hour National Death Investigation Training Program.

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Enabling Objectives

1. List the two most common initial assumptions about COD and MOD for BFIW cases and explain why this often occurs and how does this affect the rest of the investigation
2. List six types of homicidal drowning
3. State the three foundation questions to use for BFIW investigations
4. List at least 6 questions to ask on a bathtub BFIW scene in regards to “does it make sense the decedent was found in water?”
5. List at least 8 questions to ask on a bathtub scene in regards to the state of the decedent and the ‘witness”.
6. List at least 8 questions to ask on an openwater BFIW scene regarding the question “why didn’t the decedent survive immersion?”
7. State at least 5 questions to ask on a pediatric BFIW scene regarding was it “does it make sense the child was being bathed” and delineate which could be red flags of foul play.
8. Describe the “bathing journey” that should be investigated when faced with a bathtub incident.
9. List at least 8 items to examine and document when on a bathtub incident scene.
10. Explain the importance of reflecting skin off the back of decedent’s when investigations raise red flags of foul play.
11. Explain why it is important to accurately document with details how a decedent was removed from water
12. Describe at least three body positions in openwater and bathtubs that are potential red flags for foul play
13. List at least three reasons why a reconstruction may be helpful in determining MOD
14. State at least five questions to ask first responders and medical personnel in regards to how they may have changed the scene and decedent.
15. Describe methods of documenting wetness or lack thereof.
16. List at least five aspects of the external exam of the decedent on scene that are particularly important to document for BFIW cases
17. Describe the relationship between petechial hemorrhages and BFIW cases
18. Define and describe Aquatic Sexual Sadism
19. Explain why pedophilia should be considered in pediatric bathtub BFIW cases.
20. Describe differences gender differences in BFIW incidents
21. List at least four causes of accidental drowning that could initially raise suspicions of foul play

When you think about a body-found-in-water (BFIW) what comes to mind? What are you typically called to in a dispatch for an incident involving a child or an adult in water? The most common answer is a “drowning”. A call comes out for a 2 year old in a bathtub, a submerged vehicle, a woman who fell out of a boat, or a fisherman in a river. To what are most first responders think that they are going? A drowning. When you get there you see no gunshot wound, no stabbing, no significant trauma of any kind, and no obvious cause of death. What then is the assumption on the scene for cause of death? Drowning. And what follows as the assumed manner of death? Accident. Which is especially true when you arrive on scene to see grief stricken loved ones valiantly attempting CPR.

Once we have “drowning” and “accident” in our thought process, we will experience a degree of tunnel vision no matter how much we try to evaluate the scene and incident without bias. We will most likely not evaluate the scene and incident as suspiciously as we would when we have no such assumptions.

The problem of tunnel vision is worsened by the automatic process we have of trying to fit the story to the scene to see if it makes sense. We have repeatedly observed first responders and later arriving investigators look to see if there is anything on the scene to fit the reported story of “accident”, without keeping the critical point in mind that the story often comes from a potential suspect.

We even label incidents with the word “accident” prior to their being any investigation. For example consider dispatches for a “boating accident” or a “motor vehicle accident.” How do we know that the small boat wasn’t purposefully overturned? How do we know that the father accidentally drove into the water, rather than doing so purposefully with the intent of drowning his wife and two children? Language influences how we approach and work an incident. To worsen matters, first responders are often deploying to such scenes in rescue rather than in investigative modes.

The husband says the wife abuses prescription medication and was very depressed lately. Aha, that’s a good history supporting an accidental or suicidal drowning in a residential swimming pool. The father admits to leaving his two year old son alone in the bathtub for three minutes to fold laundry. Well there’s a good reason explaining why the child drowned. A man was known to abuse alcohol while he sat in his backyard Jacuzzi. It’s no wonder that his wife found him submerged and dead, after all the family had been warning him for years against drinking so much while in water.

It makes perfect sense that the middle-aged woman was found by her boyfriend dead in her bathtub. There was no rubber bathmat in the tub, she has a laceration to the back of her head, the house was locked, and there are no signs of foul play anywhere in the home. And he reports that she drank every day. She must have slipped, fallen, hit her head, became unconscious, submerged, and subsequently drowned. Circumstances are benign, toxicology shows a blood alcohol level of 0.08, autopsy findings show only a few minor contusions and the scalp laceration, so the coroner rules it an accidental drowning.

But what do we really know? Was cause of death really drowning? Is there a definite diagnosis for drowning? I suggest that detectives ask the forensic pathologist performing the autopsy, “doc, if she had been found in bed or in a field, with no history of submersion, would you still diagnose cause of death as drowning?” An honest answer in the vast majority of cases is “no.” And if such is the case, then the death requires a thorough investigation.

There is no universally accepted definitive diagnosis for drowning as a cause of death. Drowning is a diagnosis of exclusion. Drowning victims can have normal weight lungs. Heavy, wet lungs and even foam cones can be present in nonwater-related deaths. A proper diagnosis of drowning by exclusion requires a thorough, educated investigation by law enforcement and medicolegal death investigators (MLI’s), and a thorough autopsy, to prove that other causes of death can be excluded.

 A two year old child could be manually asphyxiated and then dumped in a backyard pool with the grieving caregiver crying that the child must have gotten out of the house through the doggie door, with a resulting negative autopsy. A woman could be incapacitated with a high dose of Ambien, smothered with a pillow and then placed in her bathtub. If law enforcement tells the coroner that there were no signs of foul play at the scene, the diagnosis for cause of death will most likely be drowning with a manner of accident.

The first step in any BFIW investigation is to call it just that – a body-found-in-water. Just as we should use the terms “boating incident” and “motor vehicle incident.” Do not make the assumption of drowning or accident until that is proven. One first step is to determine if the decedent was alive or dead when submerged. If we determine ‘alive’, then the next step is determining if manner of death is accident, suicide, homicide, or is it undetermined if the answer is not clear.

To make things more complicated, we have to consider the possibility of homicidal drowning even when a decedent is found dry on land. An infant can be drowned, dried off, re-diapered and put back in bed to stage a SIDS death. A child can be repeatedly submerged in a bathtub filled with cold water as punishment with resulting aspiration (inhalation of fluid) that causes the child to have respiratory distress after being put to bed that can later result in death. A man tortured with dunking can later die of pneumonia.

Most cases of homicidal drowning or land-based homicide staged as accidental drowning are discovered days, weeks, and even years after the death. Now we have to go back and fix what should have been done on the scene in the first place. And sadly, important scene, victim, and witness evidence is now changed, destroyed, or nonexistent. Accurate determination of cause and manner of death requires excellent scene observations and documentation followed by a thorough, training-based investigation. We need to walk into every death scene with our eyes open and our minds full of questions no matter how benign the incident initially presents. Training-based means that those involved in the investigation need training on aquatic related deaths and scenes. How many of you have had training in investigating deaths by gunshot wounds, strangulation, motor vehicle incidents, sexual assault, fire, child abuse, head trauma, etc? The list is long, and you probably said yes to all. Now, how many of you have had aquatic death investigation training for bathtubs, pools, boats, and open water scenes?

Water-related death investigation is not included in the vast majority of law enforcement training from patrol through detective levels and is rarely covered in a meaningful manner in medicolegal death investigation courses. This is despite the fact that **“Drowning** is the second leading cause of unintentional injury death for children ages 1 to 14 years, and the fifth leading cause for people of all ages” as reported by the CDC.

There are several types of homicidal drowning for which investigators need to be on the alert and that we will begin to cover in this presentation:

1. Punishment or torture by way of water
	1. Quieting a child crying in a bathtub by head submergence
	2. Intentional or unintentional airway submergence of a child or challenged adult when washing them after they did something “bad” that made them dirty (i.e. vomit or defecate on themselves, get food on themselves)
	3. Purposeful dunking in hot or cold water
	4. Torture
2. Negligence
	1. leaving children or challenged adults alone in or near water
	2. operating a boat while intoxicated and hitting a swimmer
	3. driving recklessly with a resulting crash into water with death of a passenger
3. homicide by drowning
	1. purposefully submerging the airway of another or pouring water down the airway of another with the intent of killing that person
	2. honor killing
4. neonatal homicide
	1. giving birth into a toilet or other water environment and leaving the fetus or infant in the fluid with no attempt to save it.
5. Sexual Abuse and Pedophilia
	1. Sexually assaulting a child in the privacy of a bathroom bathtub when it is considered acceptable for an adult to be touching a naked child in the washing and drying process. Such an assault can lead to intentional or unintentional airway submersion of the child.
6. Aquatic Sexual Sadism and Aquatic Erotic Asphyxia
	1. Intentional drowning of another for sexual gratification
	2. Unintentional drowning of another during aquatic erotic asphyxia behavior. Note that death can occur from other breathholding-related causes such as cardiac arrhythmias or acidotic changes that will have negative findings in autopsy.
7. Satanic Sacrifice

The eighth type of homicide to add to the list is land-based homicides staged as accidental drowning.

After investigating aquatic deaths for more than twenty years, my partner Walt Hendrick, and I have found that three questions can be used as the foundation of all aquatic death investigations:

1. Is it logical that the decedent was in the water?
2. Do the decedent’s and witness/reporting party’s location, posture, and state make sense?
	1. Wetness, PM changes (rigor, livor, algor mortis), injuries or lack of injuries
3. Why is the decedent dead? Why didn’t the decedent survive being in the water?

Let us begin with the first question of “does it make sense that the decedent was in water?”:

. The first question to ask is who saw the decedent in water. If the only witness to see the decedent in water was the reporting party, then we need to investigate that claim. Do the scene and the decedent’s body provide evidence that the decedent had been in water? Do the scene and reporting party demonstrate evidence that the witness removed the decedent from the water?

If the decedent was supposedly found in a bathtub you need to ask questions such as “did the decedent normally or ever take baths”, “was this the decedent’s normal bathing time”, “is the bath set up in the way the decedent would normally take a bath”, and I”s it possible that the drain was closed enough for water to fill the tub?”

For any body of water we need to ask if the decedent could have gotten into the water alone. Is the decedent dressed appropriately for the situation of being in water? What is the decedent’s history with water and does it make sense the decedent would have intentionally entered the water? For example, if a young man was afraid of water would it make sense that he would walk out onto a narrow floating dock alone at night?

 If the decedent entered the water by way of vehicle look for red flags in collaboration with someone who has sufficient experience with vehicles in water and an expert in vehicle fatality reconstruction. Consider the conviction in Ontario, Canada on January 30, 2012 of a couple and their adult son who drowned the couple’s three daughters and the husband’s first polygamous wife as an “honor killing”, put the four bodies in a car, and then pushed the car into a canal to stage the deaths as accidental drowning due to a motor vehicle accident. If the drowning involved a boat make sure to collaborate with a marine patrol officer or a civilian boat incident expert to see if the boat incident itself and the ensuing fatality both make sense. Again, be careful not to use the term “accident “until an investigation proves that that is what it was.

Answering question two will take the most amount of work as it is multi-faceted and involves investigating the scene, the decedent and witness(es). Question two is also time consuming because evidence needs to be collected and documented to such a degree that a useful reconstruction can later be done if deemed necessary. Also keep in mind that your documentation and collection may have to be effective enough to later present to a jury in a meaningful way.

 Do the scene, decedent and witness(es) appear sufficiently wet? If the decedent was supposedly submerged for more than 30 minutes is there any sign of palm or sole wrinkling? If the decedent was reportedly to have been recently removed from the water, does the decedent present with any drying artifact such as tache noir, corneal clouding, or drying of the lips? Do the post mortem findings of rigor mortis, livor mortis, and algor mortis match the scene and witness statements? All of these issues should be well documented with photographs, verbal reports, and other mediums.

Do the decedent’s location and posture make sense? If the decedent was removed from the water prior to first responder arrival you need to find a way to get the witnesses to give you the decedent’s location and posture before they lawyer up or disappear. If you already see red flags, do what it takes legally to lock witnesses into their stories. Always keep in mind that perpetrators often rehearse their lie, but they rarely physically rehearse a re-enactment of their story. And luckily for us, their stories often do not physically work. So once we have the story, and have the scene details well documented, we can perform a reconstruction to show whether or not witnesses are lying.

Location and position of the decedent can be critical in determining the veracity of witness statements and manner of death. If the decedent was reportedly found in a bathtub, in which direction was the head pointing – towards or away from the faucet? Was the decedent supposedly found faceup, face down, or on a side? Fully submerged bodies such as those in pools and lakes have a range of postures that is considered typical. If a body is found in rigor mortis in an unusual posture then that raises a red flag signaling an increased need for a thorough investigation. Show photographs of the decedent to experienced public safety divers and ask them what they think of the body position. If the D was floating on the surface document if the body was found face up or face down?

There are calculations that can be used to discover where a decedent should be found on the bottom in a river in relation to a reported descent point. A very useful piece of information is that nonswimmers and drowning poor swimmers cannot make horizontal movement. Dr. Frank Pia demonstrated this in his studies of bathers in the drowning process off Orchard Beach NY just prior to their being saved by Lifeguards. Nonswimmers can bob up and down and can spin, but they cannot move forward, backwards, or side to side. So the recovery location of a nonswimmer can be critical to determining manner of death.

Examine and document the state of the witness(es) and the decedent. Are there injuries or lack of injuries? A man claims he accidentally drove his car off a steep embankment into a river. He got out, but he was unable to get his mother out who subsequently drowned. A very astute responding police officer took the man to the local hospital for evaluation and had him photographed, which documented the fact that he had no injuries. A vehicle fatality reconstructionist later demonstrated that it was impossible for the driver to not either have injuries from a safety belt or more serious injuries if he had not been properly belted. He was subsequently convicted of homicide. He pushed the car off the embankment with his mother belted inside.

 A few days prior to my arrival in Las Vegas in 2010, to teach a homicidal drowning investigation program for the US Parks Police, they received a 911 dispatch from a man stating that his wife fell off a cliff into Lake Meade and drowned. A short while later a second 911 call came in from a woman stating that her husband pushed her off a cliff into the lake and that she was saved by two recreational jet skiers. The husband had told his wife to look over the edge of a cliff to see some fish below and pushed her off the cliff. If the jet skiers had not been there to save the woman, what are the chances this would have been thoroughly investigated as a possible homicide? The key is to always keep a suspicious mind and think out of the box. An expert in fall reconstruction would most likely have been able to show that a fall from that ragged cliff would have resulted in abrasion injures, while a push kept her clear of the rocks, as was proved to be true in this case. But that would require an investigator to have the mindset to consult with a fall expert.

Do the postmortem changes, or lack thereof, make sense with the reported postmortem interval, the scene, and the reported story? Carefully document such items as skin wrinkling or the lack of, bloating, ocular changes, the state of lividity, core temperature – while still on scene. Bodies pulled out of water, particularly cold water, can have dramatic changes from the time they are recovered to autopsy time.

Dispatch your crime scene or forensics unit to process water scenes. You never know what data may be important later to in-order to perform reconstructions that can be used as evidence in court. Here is a small sample of items for CSU and medicolegal death investigators (MLI), who need aquatic scene investigation training as much as all other investigative personnel. Note that it is imperative to document the time that the documentation is done for each of these items as many will change over time. Make sure your camera date and time are set correctly for example.

* Water temperature – take at least two readings over time
* Water depth – take at least two measurements over time
* Air temperature – and note if any changes were made to the environment by first responders or witnesses (i.e. open windows/doors, turn up heat…)
* Weather conditions
* Scene sketch with measurements
* Photograph the decedent’s eyes as they were found and then with upper and lower lids held wide open
* Photograph palms and soles of both hands and feet respectively at level angle in RAW format
* Photograph the decedent’s body posture from several angles and make measurements so that a mock victim could later accurately mimic the location and position.
* Photograph lividity of the entire body and describe it’s quality. Remember that typically this information is only thoroughly provided at autopsy when it is far les relevant.
* Photograph and verbally describe the area under where the body lay when initially discovered and where observed later by the MLI.
* Carefully document rigor mortis, testing the jaw, neck, arms, and legs.
* Document what is wet, damp, and dry by pressing forensic filter paper on the items and then photograph and write verbal description.
* Laundry and washer areas, diaper pails, garbage. Is there a diaper that appears soaked from immersion in water? Does the garbage possibly demonstrate that a child made a mess recently? Are there damp towels when there was no history of anyone bathing?
* Is there a water line in a bathtub – if yes, is it from the displacement loss when a decedent was removed or is the drain leaking or both?

It is very important to document how a decedent was removed from a body of water, no matter who does the removing. Finger pressure from the recoverer(s), for example can cause capillary damage and postmortem extravasation artifact that can look like contusions. There is no definitive test to determine if such ecchymosis is peri or post mortem. Hence, proper documentation can prevent serious mistakes in an investigation. Be wary of anyone who will definitely date a purple, blue, or red contusion-like defect.

Accurate documentation of what may seem irrelevant can be enormously helpful later. For example, most women with long hair put their hair up when taking baths to keep it out of the ‘dirty’ bathwater that may have soaps and other contaminates. If you find a decedent with her hair loose in a bathtub it is important to get a history of how she took baths. If you find her hair in some type of clip or band but in a state of disarray, then that begs different questions.

Is there anything in the decedent’s airway such as foam, vomit, blood, or purge fluid? If the decedent was worked on by EMS and hospital personnel it is imperative to call ahead so that evidence such as vomit, clothing, hair clips, diapers, drawn blood, etc are properly maintained. Consider a case in which a husband claims that his wife emptied a full bottle of Ambien. Toxicology shows levels only mildly elevated from therapeutic levels in blood and vitreous fluids. The claim is made that most of the pills were dissolved or fragmented in her stomach, the contents of which were lost when her stomach contents were evacuated in the emergency room, or when the forensic pathologist failed to maintain a sample of stomach contents. And of course no one wrote a good description of the stomach contents other than “milky white substance”.

Be proactive. Call ahead to prevent the loss of evidence. And as soon as is reasonably possible, ask EMS and other first responders to write a statement of their observations and the chain of events. Ask them to describe the scene as they saw it in detail and to record any changes they made to the scene, such as wiping up a puddle of water on the floor prior to kneeling next to the patient. Ask for observations about the state of the witness(es) including information on what they remember about clothing and footwear. Be careful to avoid asking leading type questions – the goal is to gain the most accurate information possible.

 It is also important to ask hospital staff not to alter the body if the decedent was pronounced in the hospital. It’s not uncommon for a kindly nurse to wash away vomit or other debris, or to remove therapeutic devices such as endotracheal tubes in a toddler so that family members can hold the child in a less stress provoking way. They sometimes even make casts of the hands or feet as a memorial. I remember a case of a 1 year old with white debris on his feet that we could not match back at the scene. A hospital grief counsel explained that she cut a lock of hair and made foot imprints for the parents prior to our arrival.

Make sure to interview emergency room staff to document as accurately as possible postmortem artifacts such as eye and lip drying, rigor mortis, livor moris, and body temperature. Keep in mind that most medical staff are not trained in post mortem artifacts and their main concern resuscitation and treatment. Hence, you will have to ask them questions such as “did you look at the patient’s eyes? What time was that? could you describe the eyes? Did you see anything unusual? Did you make any documentation?” If you get “no’s” to all these questions then you may have to ask a more leading question such as “did you notice an discoloration in his eyes or did they look normal?”.

This can be important. For example, I once arrived to an emergency room for a four year old black male who supposedly was found unresponsive by his mother’s boyfriend shortly after the boyfriend put him to bed. The time from this discovery to being examined by an intake nurse was approximately 20 minutes. When I examined his eyes more than an hour later there were large areas of tache noir and beginning signs of rigor in all limbs. His skin was too dark to get a clear picture of lividity. Even though his eyes were closed during his stay in the emergency room it could not be said that the tache noir developed in that almost ninety minute post mortem interval. I asked the intake nurse to close her eyes and describe for me in detail the decedent’s face to the best of her memory from when she first examined him. She used her mind’s eye and verbally painted a description of the tache noir as I saw it. She had no idea what it was and had never seen it before. This told me and law enforcement that the boyfriend was most likely lying about postmortem interval and thus we had our first red flag that eventually led to a homicide conviction. The lack of air movement from a fan or air conditioner in the child’s sleeping area was also discovered and documented, as that could have accelerated the drying artifact.

As many of you have experienced, 911 calls can be another source rich in information. Sometimes reporting parties supposedly wait to remove victims from the water until they are on the phone with 911. Reconstructions taped by your 911 center while using the reporting party’s phone or the same model phone, can be used to see if the sounds on the original 911 tape make sense. The same is true if the caller performs CPR while on the phone with 911 personnel giving instructions. Is it possible that a 250 pound mother can perform CPR with ventilations in a tiny bathroom for more than 6 minutes without once dropping the phone, while maintaining a steady 1-15 verbal compression count, maintaining a time of less than 1.5 seconds between last compression and first ventilation, while never getting out of breath? Our tests with 6 CPR instructors found this to be not possible.

Listen carefully to what is said by the reporting party on 911 tapes. How could the husband have known that his wife was ‘down for hours’ in the bathtub when he supposedly just got home from work and hadn’t spoken with her since morning? Consider the possible red flag of a father clearly answering all of the dispatcher’s questions except for the three times when she said “do you think he drowned?” in regards to his four year old son who he reportedly found submerged in a bathtub. His response to each of those three questions consisted of a few “ah, ummm, I.”

So far the list of people to interview include all reported witnesses, family and friends of the decedent who can provide the decedent’s history with water or bathing, all first responders, emergency department staff and other medical personnel if relevant. Now let us talk about the forensic pathologist performing the autopsy.

What often occurs is that law enforcement wait for the forensic pathologist to bring up any possible red flags to decide if there needs to be a continued or any investigation, while the pathologist is waiting for law enforcement to present any possible red flags in order to decide what kind of autopsy to perform and how to diagnose cause and manner of death. With each party relying on the other, an unfortunate result is too often that signs of foul play are missed.

When it comes to a body found in water, pathologists are often told that the circumstances were benign, there were no obvious signs of foul play, and the body was found in water. In some counties with budget cuts, or if there is a family objection to autopsy, this could lead to nothing more than an external exam. In other jurisdictions this will result in a standard autopsy that might miss critical evidence.

If the forensic pathologist is not notified of red flags it is extremely unlikely that the pathologist will reflect the skin off the decedent’s back, incise the buttocks, perform a rape kit or do other procedure normally reserved for possible homicides. The first two procedures are performed to look for subcutaneous bruising. If this is not done, you cannot say that there is no trauma. An excellent example to study is the case of Edward Post who drowned his wife in a hotel bathtub in St. Louis Missouri. A competent standard autopsy was performed with no findings of trauma. Against much opposition from the decedent’s family and his own department, one police detective kept the investigation alive and was able to have the body exhumed more than a year later. Numerous bruises were found on the embalmed body and the husband was subsequently convicted.

Most of you who regularly attend, or assist with, autopsies have observed evidence of internal hemorrhage not visible during the external examination. Think about cases of strangulation in which the external exam showed no signs of trauma in the neck area, but one or more areas of hemorrhage were discovered during a thorough strap muscle resection. Or perhaps you have observed internal hemorrhage in child abuse or domestic violence cases when the pathologist incised the buttocks.

Petechial hemorrhages are very rarely found in accidental drowning deaths, but there is evidence that they can disappear in freshwater logged conjunctivae[[1]](#endnote-1). Rao an d Weitli (1988) [[2]](#endnote-2)evaluated 171 drowning deaths and found that only 4.1% showed signs of conjunctival petechiae. And as we know, not all deaths diagnosed as drowning are drowning deaths, and information was not presented on whether or not effective CPR, vomiting, possible history of seizures or other known potential causes of petechial hemorrhages were involved in any of the 4.1%. Petechial hemorrhages should be considered a potential red flag when found in BFIW warranting further investigation.

Do not assume that DNA, other trace evidence, and fingerprints will be lost or destroyed by submersion. Identifiable prints, DNA, fibers and other trace evidence have been used to identify decedents and gain convictions in BFIW cases. \_\_\_\_\_\_\_\_\_\_ Hence, ask the forensic pathologist to perform such examinations and collections as necessary.

Now that you have a very basic idea of how to answer question two, it is time to move on to question three, namely “does it make sense that the D is dead?” Why didn’t the D survive immersion? Let us first consider a 2 year old child in a bathtub. If you have had children ask yourself how many hours did your toddler spend in a bathtub in a year’s time? Just multiply the average number of minutes per day by the number of days per year the child spent in the bathtub. Next, did you have to continuously hold your two-year olds or did you wash them and then let them play while you stayed in the bathroom? Of all those hours in a year, did you ever have to truly save your two-year olds from drowning in the bathtub?

This leads us to the important question of why we accept that the reason a two year old drowned is because the guardian left the bathroom for 1-3 minutes, as is typically the story. If you do not have to hold the child to keep the child from drowning, then what difference does it make whether you are in the room or outside it? I am not by any means saying that two-year olds should be left alone in bathtubs, but I am saying that negligently leaving one alone in a bathtub is not an explanation for the child dying.

Could a child experience a cardiac arrhythmia or a first seizure in the 3 minutes that the guardian left the child alone in the tub? Sure, but the statistical probability of that is so tiny that a very thorough investigation is warranted. This becomes increasingly more salient as children become older.

And that brings us to the point of adults. Neurologically intact adults, with negative past medical histories and toxicology should not accidentally drown in bathtubs. The accidental “slip , fall, hit one’s head, lose consciousness and as a result drown” manner and cause of death chain of events of such adults and even children just don’t seem to occur in any numbers that make such a chain of events reasonable as compared to other explanations.

Be very careful about what defense experts, or even law enforcement or death investigators will say when they are prone to proving an accident manner of death. The slip and fall defense is common. For example, I once read testimony given by a forensic aquatic expert who had worked on hundreds of aquatic death and accident cases who stated in a bathtub homicide trial that as a lifeguard she “had seen people fall on a daily, even hourly basis,” and testified that head injuries were the most common resulting injuries. This outrageous statement was not contested by anyone because there was no one with aquatic expertise on the prosecution team who could do so. If people fell on a daily /hourly basis a single pool, what hotel in this litigious society would have an unguarded pool, or any pool at all? This was only one example of the incorrect testimony made by this credible sounding witness. A hung jury was the result. In the second trial the prosecution was armed with an aquatic expert, a useful reconstruction, and a new strategy, and the ex-police chief/retired detective was convicted of drowning his wife in their outdoor spa.

So why might a toddler be found dead in a bathtub? Is it because the child’s airway was forcefully submerged or held under a running faucet? Was the child sick and therefore unusually fussy that day? Had the child dumped spaghetti on himself and his baby sister? Did the child vomit on himself? Or perhaps the mother’s boyfriend, who was babysitting and smoking weed, became enraged when the child got diarrhea in his pajamas just after the boyfriend had given him a bath and put him to bed.

Think about it, when children do things that are “bad” it is not uncommon for them to need to be washed. The child or infant may already be crying or may sense the adult’s anger and may start to cry. What happens to the sound of crying in small enclosed room? How can the adult get instant quiet? Submerge the airway. The intent may not be to kill the child, but that may be a direct or later result. Or death might be the intent.

There are natural processes that can make a BFIW incident look suspicious when in reality the manner of death is accidental. For example, a very healthy member of the high school swim team could be found dead on the bottom of a swimming pool. Autopsy and toxicology are negative. I first want to know if the D had any history of breath holding activity in the water that may include anaerobic underwater swim training or simply sitting on the bottom for extended periods of time. Did the D have any history of fainting or familial history of cardiac channelopathy genetic disorders such as the Long QT syndrome? Is there any possibility of electrocution from faulty wiring? In boating incidents that do not involve crashes one should consider having the D tested for carbon monoxide poisoning.

Be wary of ‘drowning’ deaths associated with intoxication that are assumed to be accidental because the toxicology was enough to cause incapacitation or loss of consciousness. If a perpetrator intended on drowning a person who was large or strong, it would make sense to first incapacitate the victim with alcohol or drugs.

Be equally cautions about using seizures as an explanation for why someone is dead in a bathtub or other water arena, which is particularly true for children and challenged adults. Hypoxia and brain injuries can cause the onset of seizures, hence child abuse or domestic violence that involves head trauma or asphyxia could be part of the D’s past and current situation.

The last topic we will touch upon is what I have termed “aquatic sexual sadism” and “aquatic erotic asphyxia”. The latter has also been called “aquatic eroticum” in two case history papers[[3]](#endnote-3).

We have defined aquatic erotic asphyxia (AEA) is defined as:

*death during sexual activity involving voluntarily induced submersion-asphyxiation meant to be brief and reversible…an unexpected fatality results from failure to cease the submersion prior to death.*

This activity can be done by one person or two or more people, which we call aquatic autoerotic asphyxia and aquatic erotic asphyxia respectively. The distinction is important as the manner of death for the former is accident, while the latter could be considered homicide. So just as for all erotic asphyxia type deaths do not automatically label it “auto” until you have done enough of an investigation to prove that only the D was involved.

Our definition of aquatic sexual sadism (ASS) is:

*death caused by involuntarily submersion-asphyxiation meant to cause fear, pain, struggle, unconsciousness, and possibly death with the purpose of sexual gratification for the perpetrator. This is a form of aquatic torture performed to sexually gratify the sadist.[[4]](#endnote-4)*

A problem with AEA is that the participant cannot have self-release mechanisms as land-based erotic asphyxia participants sometimes build for themselves to prevent a loss of conscious from becoming fatal. And when more than one person is involved, there is no way for the person doing the “holding down” to know when the breath holder needs to surface, because typically there are no signs and symptoms for the cardiac arrhythmias and acidotic mechanisms of death that can be caused by extended breath holds.

ASS perpetrators can use children adults as victims. A thorough investigation into their background, computer, and DVD’s will be necessary. They are no different than any other lust killer. They merely use water as the tool of torture.

In regards to all BFIW incidents those involving children and women should typically red flagged. Males are on average 4-5 times more likely to be found as a BFIW as are females, depending on the study, for accident, suicide, and undetermined manners of death cases. But, when it comes to homicide the tables are reversed, with a male:female ratio of 4:6.[[5]](#endnote-5)

In summary, use unbiased language such as “BFIW” instead of “drowning”, or “incident” instead of “accident”, until an investigation provides enough information to properly diagnose cause and manner of death. Document as much as possible, carefully collect evidence, and when in doubt, call in your crime scene unit to process the scene. Likewise, when in doubt, ask the forensic pathologist to carefully look for subcutaneous hemorrhages and look for/collect trace evidence. MLI’s should carefully and thoroughly document post mortem artifacts and the D’s location and posture. Examine possible suspects for injuries and wetness or dryness.

Use the three foundation questions on every water-related scene, and remember to consider the possibility of homicidal drowning staged as a land-based accidental or natural death. Use a form so to help guide you since most of us do not frequently work water-related deaths.

And lastly – every time you have a BFIW case- ask yourself “if this child or adult was found dead in bed, in a basement, in a field, what would I be doing now?” Treat aquatic scenes with the same suspicious mind and with the same care as you would a land-based death. If you would not drag a body, or even just carry a body, 100 feet before bagging it, then why would we find it acceptable to put a rope around a “floater’s” waist and drag it a mile to shore? O r let divers bring a body to their boat before it’s bagged? Treat bodies found in water with the same professionalism as you do bodies found on land.

Comments and questions on this article or on your aquatic-related cases are welcome:

lgs@teamlgs.com (845) 657-5544.

If you are on a scene working an aquatic-related death you can call us 24 hours a day for a probono phone consultation. For this service you can use the following contact numbers:

Walt Butch Hendrick 914-474-6474 Andrea Zaferes 914-388-1729. Please only use these numbers when you are actually on a scene.

1. Betz, P., Penning, R., Keil, W., The detection of petechial haemorrhages of the conjunctivae in dependency in the postmortem interval. *For. Sci. Intl* , 64 (1994) 61-677 [↑](#endnote-ref-1)
2. Rao, V.J., Weitli C.V., The forensic significance of conjunctival petechiae. *American J of For Med and Path*. 9(1):32-34 (1988) [↑](#endnote-ref-2)
3. Sauvageau, A. & Racette, S., “Aquatic Eroticum”, J Forensic Sci, January 2006, Vol. 51, No. 1 [↑](#endnote-ref-3)
4. The exact wording of both definitions was written by Dr. Kari Reiber, Chief Medical Examiner for Dutchess County NY. [↑](#endnote-ref-4)
5. Lucas J, Goldfeder LB, Gill JR. Bodies found in the waterways of New York City. J Forensic Sci 2002;47(1): 137–141 [↑](#endnote-ref-5)