



6 Nursing Lessons: A Nurse and Mother Comments on the Untimely Death of her Teenage Son

An Interview With Pamela Parker, BSN, RN, CAPA (January 5, 2016)

Pat Iyer:

Hi. This is a podcast from the Physician-Patient Alliance for Health & Safety. The podcast that we're presenting today is called, "Six Nursing Lessons: A Nurse and Mother Comments on the Untimely Death of Her Teenage Son."

Welcome to our podcast. My name is Pat Iyer. I'm a nurse and I'm talking today with a fellow nurse, Pamela Parker.

Pam, thank you for talking with us today about this difficult subject. Could you tell us what type of nursing care you deliver?

Pamela Parker:

Hi Pat. I've been a registered nurse for almost twenty five years. I'm currently a PACU nurse. I work in the ambulatory procedure unit in a community hospital. Additionally, I have my certification as a certified ambulatory perianesthesia nurse - CAPA.

Pat:

Could you tell us about your son, Logan? Why he needed surgery on July 23rd, 2007?

Pam:

My Logan was a red haired, fair skinned, seventeen year old fun big kid. He had a mild form of autism known as Asperger's. He was very silly and he even embraced the term "goofy" as he loudly sang off key to all of his favorite songs. He was referred to as "Big Logan" because he loved to lead the neighborhood kids in football or baseball in the backyard.

Logan was less than three weeks from the beginning of the senior year. He was falling asleep frequently, and I noticed that he had been obstructing his airway when he was sleeping. I took him to a local ENT for evaluation. He was sent to have a sleep study, which determined that he had obstructive sleep apnea with elements of central sleep apnea. The treatment option that we chose for Logan was surgery. We had waited for about a month to receive insurance approval.

Pat:

Tell me about the setting where he had surgery.

Pam:

Well, because time was limited, we chose to have a surgery at a freestanding outpatient surgery center. He was scheduled for surgery to have his tonsils and his uvula removed, septum and his turbinate repaired. Basically, opening up the airway by removing the tissue in the back of his airway.

Pat:

I know you mentioned obstructive sleep apnea to us. How does that change the risk for surgery?

Pam:

Well, people who have sleep apnea who are undergoing any type of surgery are at an increased risk for developing respiratory and cardiovascular complications in the period following the surgery. Following the surgery, it was later discovered that Logan had moderate cardiomyopathy, which was almost certainly as a result of his sleep apnea.

Pat:

I think we should focus first on the prevalence of obstruct sleep apnea in patients who are undergoing elective surgery. Is this a common condition or is it a rare condition?

Pam:

It actually is very common. Although Logan had been diagnosed with sleep apnea, there are many instances of diagnosed obstructive sleep apnea (OSA) - so much that undiagnosed OSA has been described as an epidemic. The prevalence of OSA is estimated to be twenty five percent among candidates for elective surgery - and maybe as high as eighty percent in high risk populations such as patients undergoing bariatric surgery.

Further complicating matters is a high prevalence of associated conditions such as obesity, hypoventilation syndrome, and chronic hypercapnia. Disturbingly OSA remains undiagnosed in approximately eighty percent of the patients at the time of surgery, which means that many patients might unknowingly be placed at risk. Partially because of the untreated nature of their disease and outcome status for patients are incomplete. Many facilities do use OSA risk assessment screening tools, such as the STOPBang and the Berlin questionnaire.

Pat:

And from what you've talked about it sounds like it's so important to be able to recognize people who are at risk for sleep apnea since it continues to be a hidden problem. Let's talk about the populations that are even at higher risk. Who might those people be?

Pam:

Certainly patients undergoing bariatric surgery. Other factors include obesity, hypoventilation syndrome, and hypercapnia.

Pat:

What you've described, Logan was a big kid but I'm assuming that he was not a bariatric patient. You've described him as having a higher risk of having difficulty after surgery because of those obstructive sleep apnea. Do you think his providers were identifying him as being at increased risk associated with his conditions?

Pam:

Logan's weight was about two hundred and thirty five pounds, and definitely he was a big kid, but he would not be considered a bariatric patient by any means. Logan had a sleep study which confirmed the diagnosis of obstructive sleep apnea. The study also stated he had elements of central sleep apnea. The study was necessary for our insurance approval of his surgery. His sleep apnea was the purpose of the surgery.

Pat:

Let's talk about another factor, which is being opioid naive or not having a lot of prior exposure to opioids. How does that affect the risks of post-operative respiratory depression?

Pam:

As a PACU nurse, I am acutely aware and have constantly observed the effects of IV narcotics and other medications which cause respiratory depression. The response of these medications are variable among patients.

Administration of these medicines should be based upon a patient's response to the medicine. Assess before the administration. Assess after the administration.

Pat:

Had Logan received opioids before?

Pam:

A few years prior to the surgery, he had a urological surgery and briefly took oral hydrocodone - maybe six doses all together. But Logan was a big boy and it would be naturally assumed by many health care providers that he would require larger doses of pain medications to relieve his pain. But, in Logan's case, he was narcotic naive.

Pat:

I'm assuming that you had an opportunity to see him after surgery was over. Where was he at the time that you first saw him?

Pam:

There was only one recovery room area, not a second stage recovery at this facility. He arrived in a recovery room at 11:25. According to the documents, he remained non-responsive to verbal stimuli until 12:30.

Pat:

Do you know about what time you were in to see him?

Pam:

Around 12:45.

Pat:

OK, so he had just become aware and he was beginning to talk. What was he like when you first saw him?

Pam:

When we were allowed to see him, the first words that Logan said were "I made it!" and he gave us each a high five. His father and I each sat beside him on the right side of the bed, and the nurse on the left side the bed, with the monitors on the left side the bed and Logan had a few sips of Sprite and a grape popsicle. So, during this time, Logan's oxygen saturation monitor continued to alarm. The nurse would say, "Take a deep breath" occasionally and change the monitor probe on his finger to another finger.

Pat:

Now you mentioned the oxygen saturation alarm was going off. Did the nurse do anything additional besides that?

Pam:

When I looked at the pulse oximeter that was monitoring Logan, it did not display a waveform as it usually does. It just displayed a number. The nurse said that "his color looks good!" and frequently moved the pulse oximeter probe, and that was pretty much her response.

Pat:

I know that there is a scale that I have heard of called the Pasero Opioid Induced Sedation Scale. Can you tell us about that?

Pam:

This Scale tells us what patient conditions are acceptable or unacceptable, and they set forth the appropriate action to ensure patients safety.

Pat:

Was this Scale in use at the facility the day Logan got his care?

Pam:

There was not any scoring tool used to track his level of sedation during his recovery period. The surgery center only used the Aldrete Score during his anesthesia recovery period. And in reality Logan died in 2007 prior to the common use of the Pasero Opioid Induced Sedation Scale.

Pat:

If that Scale were in use at the time that Logan received his care, what do you think it would have suggested that the staff do in response to his reactions?

Pam:

Based upon the Scale Logan was probably a three. Changing the probe from one finger to another, it might have stopped the pulse oximeter alarm from going off, but it did not address the true problem. It can now be assumed that Logan was already having ventilation issues. According to that to the Pasero Opioid Induced Sedation Scale, Logan's condition was unacceptable and this required a decreased opiate opioid dose - 25 to 50 percent - or notify the prescriber.

Pat:

You've mentioned about Logan being opioid naive. Tell us about what pain medications he received in that recovery room, after surgery.

Pam:

Logan received IV morphine. Two milligrams administered at 12:50, again at 12:53, and again at 13:10. His IV was removed eight minutes later and he was discharged at 13:25, just fifteen minutes after his last dose of morphine.

Pat:

So he received six milligrams of morphine between 12:50 and 13:10, which is about twenty minutes, right?

Pam:

Correct.

Pat:

What happened in terms of his pulse oximeter monitoring?

Pam:

His Pulse Ox was decreasing. The last documented SpO2 was 90 percent and that was taken at 12:50, the time as the first dosage of morphine.

Pat:

I've been doing some reading on the subject and I came across an article by Dr. Chelluri from the University of Pittsburgh School of Medicine. And, he talked about preventable in-hospital cardiac arrests. He talked about in his article that pulse oximeters are a lagging indicator of respiratory compromise and he discussed the use of capnography. Was capnography in use on Logan?

Pam:

It was in use in the operative setting. In the inter-operative anesthesia record, his ETCO2 was documented as 56, 53, 43, 63 and 63. So, he left the OR with an ETCO2 of 63. There was no capnography monitoring in the recovery room and no record that it was ever checked again. So, current respiratory monitoring systems available for prevention of secondary cardiac issues. are pulse oximetry and capnography monitoring. Pulse oximetry measures the oxygenation of blood and it is widely used. However, pulse oximetry is a lagging indicator to detect fatigue and respiratory compromise. Capnography measures the amount of carbon dioxide in exhaled breath and is a better indicator of the adequacy of the ventilation of the patient.

Pat:

We've talked so far about how the nurse heard the alarm and moved the probe to different fingers. What's your understanding now as to why the nurse had difficulty getting a valid pulse oximetry reading?

Pam:

She really just didn't believe the SpO2 readings. She believed that because the color of his body had not changed that the pulse oximetry was inaccurate. In reality, I now believe that his ventilatory effort was decreased and was already compromised.

Pat:

You mentioned before that Logan went home at approximately 13:25. What happened when he got home?

Pam:

When we arrived home, he was very weak and sleepy when I helped him out of the car. He appeared to be weaker than when he walked out of the surgery center. I helped him to the love seat in the living room and he went to watch a movie that he received as a gift. I started the movie and he never woke up to see it play. He started to look very pale and I just told him to take a deep breath. So, each successive time that I woke him up, it was becoming more challenging to awaken him because he was so very somnolent. I was afraid to leave him and I

sat on the floor next to him, and I watched him very closely. Because the popsicle had made his lips purple, I looked at his nail beds. I looked at his ears and his nose for his collar.

The last time I woke him up, his eyes opened and he looked past me and asked me quietly, "Where's mom?" I said, "Logan, I'm mom. Take a deep breath." He said, "Oh yeah" and he took a couple of deep breaths then he fell asleep.

I called a friend and coworker who lived close to assist me with taking him to the hospital. As I was sitting next to Logan, I tried to wake him up and have him take another deep breath, but he did not respond. So, I rubbed his sternum very hard and still no response. I put my hand near his mouth and his nose, and I felt soft breathing. After about three breaths, I felt no breathing. No breathing at all.

I moved the coffee table. I grabbed an arm and a leg, and I rolled him onto the floor. And, he landed face down - he landed really, really hard faced down. I just couldn't believe that he didn't wake up. I rolled him on his back and I gave him two rescue breaths.

I called 911 for an ambulance. I checked for a pulse and he had a weak pulse. I could not believe that he was not breathing.

I remember 911 transferring me to another dispatch. I told him that I was doing rescue breathing and that I needed to put the phone down. Meanwhile I was screaming at him between these breaths. The taste of the grape popsicle that filled my mouth, I remember that so vividly.

My friend knocked on the door. Seeing my face, she ran to us on the floor. She checked a pulse and she didn't find one at that time, so she started compressions and at one point she thought that air was going into his stomach. So, I pushed on his stomach, rolled him on his side. I wiped the brown purple stuff coming out of his mouth and started rescue breathing again.

Just like we would at work, we continued to reposition his head while I was rescue breathing. The paramedics came rushing in and took over the rescue attempt, and I was just so thankful when they walked into the house.

I went into the kitchen. I told a fireman all about Logan's medications. When I returned to the living room, Logan had been intubated and they had started an IV on him. The paramedics were doing compressions, and they were using an ambu bag.

When the paramedics said, "epinephrine", I began to further panic. It made me realize that gosh this is real.

Pat:

Well, you were in such an unusual circumstance of being a health care provider, being involved in resuscitation, and then having to participate in one for your own child, so this must have been a very horrifying experience. And, it continued - you arrived back at the hospital. What happened next?

Pam:

We followed the ambulance to the hospital, where we were allowed into the trauma room. And, my mind it was really blurry during that time period, but I later learned that Logan's heart briefly restarted. And, the nurse said, "Doctor his heart rate is decreasing" and the doctor went to Logan's side, he came back to us and said that he wanted us to sit next to him and to talk to him. His father was on his left side and he was just sobbing, and I was on his right side.

I pleaded with Logan to try harder and to hang on. I even promised to have him meet Peyton Manning, if he would just try harder. I rubbed his face and his arms. I told him how much I needed him, and that I needed him to try, to try very hard.

I was completely stunned with all of this happening. When the doctor came to us and said that he was very sorry that it was not anything that they could do to make his heart start again.

I let out a very loud wail that frightened me. The doctor then put his hand on my shoulder and he told me that now is the time that we need to tell him good bye. And, I snapped into being myself and I told Logan, "Now you're entering the kingdom of heaven." And, I told him that I loved him and I mentioned to him everyone's name that I could possibly think of who loved him.

Then, I looked up at the nurse who was giving him compression, and she stopped. And, then I walked over to the sink in the trauma room and I threw up.

Pat:

Wow. I'm assuming that an autopsy was done because this was a sudden and unexpected death. Do you know what the results were of the autopsy?

Pam:

I do. Actually, it took four months to get a death certificate. It was very challenging for the coroner. The coroner is very limited in their evaluations. They're really limited to just the pathology findings. Obviously, they cannot measure oxygenation. So, the coroner's cause of death for Logan was hypertrophic cardiomyopathy, complicated by sleep apnea.

So, we were stunned to discover that Logan already have moderate cardiomyopathy. We now know that this is probably because of his significant history of sleep apnea. Ironically, this is what we were trying to correct with the surgery.

Pat:

Pam, you share a very important and emotional story with us about this terrible day in your family's life. I know that our listeners want to know what we can do differently as a result of what happened to Logan. What are the lessons?

Pam:

Thank you for asking. There are several very important lessons.

Lesson one - all patients receiving opioids should be assessed for risk for over sedation and respiratory depression.

Lesson two - clinicians must recognize the signs of respiratory compromise.

Lesson three - all patients receiving opioids should be continuously electronically monitored.

Lesson four - do not rely upon pulse oximeters, monitor with capnography.

Lesson five - all patients should be monitored for an extended period in an un-stimulated environment prior to discharge.

And, lesson six - medical interventions should not be based upon human heroics, but should be based upon a process and process improvement.

We can do better.

Each health care provider needs to consider the risk of respiratory compromise in planning a patient's care, and this includes all clinicians involved in creating and implementing a plan, including the surgeon, the anesthesiologist, and the nurses. And, it should entail frequency of respiratory assessment and the types of monitors being used. Capnography should be used on all patients who are at risk for increased carbon dioxide.

Other considerations include minimal usage of medications that increase respiratory depression, such as phenergan and benadryl. Additionally, the patient should receive full reversal medications by anesthesia at the end of surgery. Clinicians must create a better plan for the at-risk patient.

I am a recovery room nurse, and yet I did not have the tools and I could not save him.

After discharge, his deterioration was already rolling down too an accelerated path.

We must do better. Screen our patients for risk. Know the signs of deterioration in a timely manner with a thorough, a thorough nursing assessment and intervene earlier. I firmly believe that the appropriate monitors have been used - specifically capnography - and if he had received additional and longer monitoring in an un-stimulated environment, July 23rd of 2007 would have had a different ending.

Hypercarbia, otherwise known as CO2 narcosis - it can be deadly to our patients. As a health care provider, ask yourself - What does this look like? What do we need to do in order to intervene for these patients who are high risk or diagnosed OSA?

Logan's deaths occurred prior to any knowledge that I had on CO2. Probably the nurse caring for him was also unaware of these dangers.

The recent guidelines for respiratory depression have come after his death. Unfortunately, it often takes a bad outcome to create a better process. Logan's bad outcome was absolutely heart wrenching and devastating for our family. Now, now is a time for process improvement.

Do not just use capnography, use it and use it well. Understand it. Use it to become a better nurse in your assessment of your patients. Do not be a task oriented health care provider. Thoroughly assess your patient's respiratory status. Look at the big picture.

Remember this story. Remember that if the seventeen year old boy could die from complications of sleep apnea, anyone can.

Pat:

Thank you for joining us today, Pam. This has been a very moving and very important topic for our listeners.

Pam:

I'm very thankful for you to allow me to share this very personal story with other health care providers. Thank you.