

Danny's Trials

by Jeff Savarino

I do not remember exactly when I first met Danny, but he played a prominent part in my life at Horace Mann Elementary School. Danny and I had a lot in common, but it always seemed like he was better than I was. He was smarter. The teachers liked him better. Captains always picked him first in football at recess. Our youth baseball coach started him as pitcher instead of me. I was never bothered by Danny's success. In fact, I looked up to Danny, and I would continue to look up to him for years to come.

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Osteosarcoma is a cancer that grows in the bones. The disease generally forms around the knee joint, either in the base of the femur, the thigh bone, or the head of the tibia, the shin bone; it can, however, appear in any bone in the body ("Osteosarcoma - Childhood "). The cancer normally presents itself between the ages of thirteen and twenty-three, when bones grow rapidly. Symptoms are not very specific and can point to many different conditions, so a diagnosis cannot be made without imaging scans ("Osteosarcoma - Childhood "). Pain, bone weakness, and swelling can all be present around the tumor area ("Bone cancer").

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My memories of Danny came rushing back to me as I sat in the pew at his funeral listening to his mother's final words. Danny passed away after a two year battle with osteosarcoma, a rare, debilitating form of bone cancer. Through intense treatment, the ailing high school student was given a new chance at life. When the dust settled, however, the treatment proved to be unsuccessful. Danny's hope for survival had slipped through his fingers. His family

and his close friends were forced to accept a fact of cancer that many choose to deny: cancer remains a very deadly disease.

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Like all other types of cancer, osteosarcoma has the ability to metastasize: they have the ability to break apart and travel through the bloodstream where they spread damaged cells to healthy areas of the body ("Osteosarcoma - Childhood "). Children whose original tumor has not spread have a 90% chance at life, while adults in the same situation have an 80% chance. If the cancer has metastasized to one other location, the cure rate drops to somewhere between 20% and 30%; multiple locations mean a cure rate slightly above 0% (Choy). Early intervention is important to survival.

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The end of eighth grade rolled around, and an early dismissal one day left us stuck in the rain; our parents were still at work and unable to bring us home. My friends and I decided to run across town to another friend's house. We crossed the muddied field at the Horace Mann School. I looked to my left and saw Danny running stride for stride with me. This day would mark the last time that I saw Danny run.

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The treatment process is generally standard for most osteosarcoma patients, depending on the progression of the disease upon diagnosis. Typically, patients will immediately begin several weeks of chemotherapy. Soon after, surgeons will remove as much of the tumor as they can while minimizing healthy tissue loss. Surgery is followed by additional chemotherapy (Arndt). This treatment plan cures roughly 70% of patients of their cancerous tissue (Choy). Those that continue to suffer from the disease must go through a more involved treatment path.

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I was sitting in history class during the first few weeks of my freshman year. “Did you guys hear what happened to Danny? He has cancer in his left leg. He’s getting chemo right away.” My classmate’s words echoed in my head. Cancer. Chemotherapy. Was surgery next? Would he be ok?

Within a few weeks, Danny had begun chemotherapy treatment. Around Christmas, he underwent a massive operation. Doctors surgically removed his left femur, the largest bone in the body that runs from hip to knee. The femur was replaced with an extendable titanium rod that would “grow” as Danny grew. Several follow up procedures would further remove the cancerous tissue surrounding the rod. For the next year and a half, Danny’s treatment would alternate between chemotherapy, surgery, and more chemotherapy.

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Chemotherapy and surgery are often considered by medical professionals to be the proper way to effectively treat cancers. In the case of osteosarcoma, chemotherapy often proceeds and succeeds surgery ("Osteosarcoma - Symptoms, Diagnosis, Treatment of Osteosarcoma"). The initial chemotherapy is used to reduce the size of the tumor, maximizing the size of the limb that can be salvaged. If the chemotherapy does its job, there will be enough healthy tissue to avoid amputation ("Osteosarcoma - Symptoms, Diagnosis, Treatment of Osteosarcoma").

A regiment of chemotherapy drugs are also administered after surgery. This bout of treatment is designed to kill any cancer cells located in other parts of the body. If part of a tumor has broken off and traveled through the bloodstream, these drugs will ideally kill it before it has a chance to form another malignant tumor. The chemotherapy is also used to make sure that any cancer cells that were not removed with the rest of the tumor can be killed so they do not form a

new tumor. Combined with surgery, chemotherapy has a good chance of ridding the body of cancerous tissues in patients without metastases ("Osteosarcoma - Symptoms, Diagnosis, Treatment of Osteosarcoma").

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On a fall day in 2007, the students in my sophomore English class collectively turned their heads to look at the door just as class was beginning. Danny walked into the classroom; he needed a walking cane to move confidently. His red hair had fallen out and his bare head was covered with a faded Boston Red Sox hat. His skin was pale, but his characteristic freckles remained as prominent as ever. He beamed a huge smile as he hobbled to his seat right next to mine. For the next few months, while he felt well enough despite his chemotherapy treatment, he would come to class as often as he could. Every day he was there, I would make it a point to spend time talking with him, about sports, about school, but never about his struggle. I knew he wanted somewhere he could go where he could be a normal kid. After a few months, Danny stopped coming to class all together. We found out how badly treatment was taking its toll on him. Some days, he would frequent the class via webcam, but soon Danny became too weak even for that.

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Several different surgical options exist depending on how far within the body the osteosarcoma has spread. Surgeons try their best to avoid amputation of the diseased limb ("Osteosarcoma - Childhood "); they must get as close to the tumor as they can to ensure that as little healthy tissue is removed as possible. Cancerous bone and some surrounding muscle tissue are removed. Often, however, not enough tissue is resected and the cancer has an increased chance of returning, making follow-up surgery necessary (Grimer).

Surgeons should be able to adequately reconstruct the limb from which the tumor was removed in order to make limb-salvage surgery successful (Grimer). Techniques such as “bone grafting and reconstructive surgery” are used “to help the child keep use of the limb and to give the limb a more normal appearance” (“Osteosarcoma - Childhood ”). If part of a bone, or even the whole bone, is removed, doctors will replace it with plastic or metallic substitutes, or with bone from other parts of the body or from deceased organ donors (Grimer).

If the tumor is too large to remove while preserving functionality, however, amputation is considered. Removing part of a limb or the whole limb can cure patients whose tumors are unresponsive to chemotherapy (Grimer). Sometimes, standard chemotherapy and surgery are not viable options for extreme or late term cases.

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Danny’s voice projected through the radio during the WEEI Jimmy Fund Radio Telethon on August 15, 2008. Despite feeling ill, he wanted the opportunity to talk about his condition, to stress the importance of the telethon, and to be able to lobby for donations for cancer research. “It did spread to my lungs, and, um, it has also spread to my right knee and my right leg and also my spine. So, right now it’s at a point where unless people donate money and find more clinical trials, there’s nothing much else that’s out there to do or try” (“D&H with "Flat Dan" Williams”).

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Clinical trials offer treatments that differ from standard treatment options, either in medicine used, surgery done, or the order in which treatment is given. They are often very selective in order to show favorable numbers, implying the new treatment plan is more effective than the standard one (“Osteosarcoma - Childhood ”).

Several clinical trials are currently available for patients suffering from osteosarcoma. One such trial involves the inhibition of a protein found in the body: by inhibiting the protein IGFR, doctors hope to prevent cancer cells from growing without negatively affecting healthy cells. Another trial monitors two different groups of patients. Each group receives normal chemotherapy, but one group receives an additional drug which sometimes kills cancerous bone tissue (Choy).

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On Saturday, October 25, 2008, I woke up to my dad's knock on my bedroom door. "Danny passed away last night. The funeral is Wednesday." My dad's words pierced me like daggers. My invincible friend was no more. I did not want to believe it.

On the day of the funeral, I stood at the end of the pew. I was surrounded by students from Horace Mann who shared the same bond with Danny that I shared. Gail Williams stood up to eulogize her son. For fifteen minutes, she made us laugh, cry, and reminisce about the time we spent with Danny. Gail's final words still fill my ears with grief to this day: "Goodnight, baby boy, sleep well."

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These trials both have the potential to help thousands of osteosarcoma patients around the world, but they cannot run without public funding. Several treatment options exist for osteosarcoma patients, but the disease remains complicated. Only through the continued funding of research and clinical trials will doctors be able to cure osteosarcoma effectively.

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Even now I think back to Danny's voice and words, to the day of the radio broadcast. It will take me forever to process those words. Here was a sixteen year old kid telling national

audiences that he was going to die, but that they could still help the millions of other families that had a chance. Danny's mother, Gail, claimed that these realizations had never been discussed with his parents. For the first time, I realized that the kid I looked up to so much was far from invisible, but he was doing all he could to help others. He needed a clinical trial, but realistically, his cancer had progressed too far for this to be possible. Most researchers would not accept a patient like Danny because his chance of survival was so small. Danny implied that if money was donated earlier, before his tumor had spread, then a clinical trial could have been open to him, allowing him to receive the experimental treatment that could have saved his life. He knew that he probably would not live for much longer, but he wanted to give others a chance to do what he could not: beat cancer.

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