



Case Study

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Bones; dem bones dem bones dem dry bones: a Case Study

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Abstract

In this article, the author, an octogenarian, shares his personal story of dealing with bone disorders and broken bones throughout his life. He describes ancient history regarding bones and tells how a folk song was written in the 1930s containing the words “dem bones dem bones dem dry bones.” He describes how his father dealt with two broken hips. The author strongly believes that both patients and medical clinicians benefit from hearing personal stories. He offers his viewpoint on both patient’s and physician’s roles in avoiding broken bones among the elderly.

Introduction

Lately, a number of my friends and acquaintances of varying ages have had serious bone issues. A young couple has a newborn baby with a condition where the soft spot in the baby’s head is closing too fast. This condition is called craniosynostosis. The baby will require surgery on the bones in his head within the first three months of life. Fortunately, the surgery is almost always successful (99 percent plus success rate). Another person I am close to who is in her early 50s broke a bone in her foot playing pickle ball. A neighbor in her 70s fell while walking and fractured her hip and femur. The list goes on including feet, knees, hips, and ribs. These real-life experiences caused me to reflect on my own understanding of the human skeleton and my own bone issues throughout my life.

The Human Skeleton

How many bones are there in the typical adult human body (either female or male, they are the same); and how many bones can you name? Healthy bones are vital to good health, yet we tend not to pay much attention to them unless there is a problem. Bones and teeth are the hardest parts of our bodies, and bones tend to do okay without much attention. We don’t even need all our bones to live reasonably well. There is a procedure called a costectomy where a couple of lower rib bones are removed surgically simply for the purpose of changing the waist-hip ratio to create a more desirable looking body.

Some ancient cultures gave bones religious significance as a sign of renewal, vitality, and a connection to the afterlife. In the Old Testament (Ezekiel 37), Ezekiel talks about being in a valley full of bones where warriors had apparently been slain. The bones are described as being very dry, meaning they are old. With Ezekiel’s prophecy, the bones are returned to life inside of bodies with all other human body parts. That piece of scripture forms the backdrop for the popular folksong with the words “Dem bones Dem bones Dem dry bones.”

There is a branch of archaeology involving the study of ancient human bones, and it is called Palaeopathology. By studying ancient human bones, Palaeopathologists can tell a great deal about health and diseases from the past. Today, physicians that specialize in the treatment of injuries and diseases of the musculoskeletal system are known as Orthopedists. Despite their strength, bones are subject to all kinds of disorders, diseases, degenerative diseases, infections, tumors, congenital disorders, arthritis, and breakage, etc. It is estimated that there are 300,000 hospitalizations annually for hip fractures in the United States.

If you said the typical adult human body has 206 bones, you would be correct. We’ll leave the naming of these bones to another time.



Congenital Disorders of the Bones

I was born with three distinct bone disorders. I have a foot disorder colloquially known as Morton's toe. This is where the second toe on each foot is considerably longer than the big toe. Morton's toe has been around for thousands of years but got its name of Morton after an American doctor who first described it. (Interestingly, the Statute of Liberty was made with Morton's toe.) When I was a teenager, my General Practitioner (GP) told me I would have problems with my feet in my old age due to Morton's toe. Actually, I've had foot discomfort since I was a teenager standing for several hours working as a checker in a grocery store.

I've had lower back pain since I was a teenager. I did not find out the true nature of my back disorder until I was in my late 50s. An x-ray showed that two of my facet bones were longer than normal and were pressing against other back bones. The orthopedist who discovered my back problem, showed me on my x-ray where the tips of two facet bones were bright white, meaning they were inflamed. He said this will be extremely painful but not serious. He recommended against surgery to correct the problem, and I have followed his advice. When I get a "flareup," I take anti-inflammatories, and the pain usually goes away in about 10 days to two weeks. Basically, this has been a lifelong condition for me.

I was born with a condition known technically as pectus excavatum - also known as tunnel or sunken chest. This is where the breastbone and ribs grow inward. When I was a teenager, my GP told me my case was moderate, and he did not recommend surgery. He recommended that I stretch my chest by taking a deep breath and pulling my arms and shoulders backwards in order to expand the chest muscles. I have done this on a regular basis all my life - dem bones dem bones dem dry bones.

Broken Bones

I have had six instances of broken bones in my lifetime that I'm aware of. The first occurred when I was only seven months old. My parents had set my bassinet on a kitchen table chair and left me alone. I crawled out of the bassinet and fell several feet to the floor breaking my collar bone in two places. I was taken to our family GP the next day and he tried to splint the broken collar bones using tongue depressors and tape. My grandmother later told me I cried off and on for several days. When I was a toddler, I was hit in the lower mouth with a wooden swing seat that cracked the bones holding in my teeth and caused bruising to my teeth that are still visible today. I have to tell dental hygienists not to try and scrape off the yellow spots on my teeth from that accident. When I was in the third grade, I was playing baseball with my classmates. I reached out to home plate to make an out, and a classmate stepped on my right pinkie breaking it. I didn't tell my folks what had happened, and by the time they noticed it, the end of my little finger was pointing noticeably inward. Our GP felt more damage would be done by trying to rebreak the bone, so I have had a "claw" hand since the third grade.

When I was 12, my grandfather gave our family a horse. We rode the horse bareback, and it is sometimes hard to stay on a horse

without a saddle. Horses occasionally develop a condition called barn sour where they really don't want to leave the coral or barn where they are housed. Our horse had a severe condition of being barn sour, and as I coaxed her to leave, she bucked me off and my side hit a metal stake in the ground cracking two ribs. It hurt like crazy, and I was out of commission for several weeks. When I was 21 years old, I was riding a horse at my grandmother's ranch, and the horse fell. I had been trained to get my leg out of the way if a horse ever fell, but I didn't quite make it, and I broke my leg just above my right ankle. It was called a green stick fracture. I was in a cast for six weeks.

I was not riding while my leg was in the cast, but I still drove out to the ranch on Saturday mornings and talked to my grandmother. I asked her if my father had ever had any broken bones growing up, and she said no. I then asked her if he had ever had any close calls, and she said one very close call that she knew of. When he was five years old, his father gave him a Flex Flyer for Christmas. Basically, it was a toy with flat boards and small wheels very low to the ground. It had a limited steering and braking capability. It was light weight so you could carry it easily; or you could put one knee on it and push yourself along with your free leg. It's most exciting (and dangerous) use came in riding it downhill. It could pick up a lot of speed in a hurry on a hill. My grandmother said she thought it was dangerous, so my father was not allowed to ride it unless she was watching. She told me he was riding down a hill near their house when a large trash truck pulled out from an alley right into his path. The driver of the truck did not see my father, and my father was unable to stop his Flex Flyer, so he rode it under the moving truck passing between the front and rear wheels and shooting out the other side. My grandmother said she almost fainted, but it happened so quickly she recovered. She said the driver went on up the street never knowing a kid had just ridden underneath his moving truck. She checked my father over and found some rubber dust from the truck's tire on the heel of his foot. That's how close I came to never joining human life in this world or of being around to write this article.

I've talked to many older folks, and almost all of them have had one or more "close calls" in their lives. Such events were often referred to by older adults as "but for the grace of god." How about you, the reader of this article, what's the closest call(s) you've ever had?

When I was in my late 50s, I was having considerable pain and stiffness in my neck. I was referred by my GP to a physical therapist who looked at the x-rays of my neck and informed me I had been in an accident that had seriously messed up my neck bones. I could remember two occasions as a kid where I got hit in the neck. One was falling off my bike and the other was falling off my horse. On both occasions I was hit hard enough in the neck and lower portion of my head to give me a headache for a couple of days. I suspect one of those events led to my neck issues. Fortunately, the physical therapist gave me a group of exercises and stretches that eventually resolved my neck issues. When I was in my 70s, I had a bone scan showing a cracked vertebrae in my lower back. The cause of this

broken bone is unknown, and it healed, but my bone scans always come with the report of a prior broken back bone - dem bones dem bones dem dry bones.

Having had a number of bone issues myself, I always marveled that my father had never had any himself. At least that's what I thought until I began reflecting upon bone issues he had in his later life.

My father's Broken Bones in Later Life

My father lived to be 100 years old. In his early 70s, he was having sciatica pain so severe he could not take more than a few steps without stopping to put his leg up on a chair or bench to relieve the pain. He had surgery to scrape away the bone that was pressing on his nerve, and that surgery was 100% successful.

In his mid-80s, it was determined he needed heart bypass surgery, and his physicians entered his chest through his sternum. In his early 90s, his mental acuity was good, and he was active enough to walk around his condo grounds picking up trash. Also, he would walk about a block to the senior center where he volunteered to serve lunch to people much younger than himself. During his mid-

90s, he had two falls; each fall came with a broken hip. After his first broken hip (left side) he needed to use a walker to get around, but he was reasonably mobile following surgery and physical therapy. After the second broken hip (right side), he was much less mobile even with his walker. Following surgery to repair the broken hip, he was exhibiting mental confusion, but that cleared up in a few weeks. At first after each fall, he did not want to believe his bones had betrayed him, and he insisted he did not have a broken hip. His Orthopedic Surgeon explained to him that "When you're lying on the gurney and one leg is three or four inches longer than the other after a fall, it's a pretty good indication that a bone is broken."

The first time my father broke a hip was when he tripped over a rug in his house. It was too painful for him to move, and he lay on the floor for most of the day until my brother found him that night after he did not answer his phone. I was sorry that I was not able to protect him better in his old age. The second time he broke his hip, his caregiver explained that he jumped up from a sitting position and started to walk without his walker, apparently thinking he was still in his 20s. He went down hard on dem bones dem bones dem dry bones.



Figure 1: The author of this article (age 7 months) with splints made from tongue depressors and tape for broken collar bone, as grandmother watches over. (Photo taken July 1941.) Dem tiny bones, dem tiny bones.

Lessons Learned

Even though my father's case is anecdotal, we know from the statistics that he was not atypical, and that older people's bones break more easily than those of younger people. We also know that older people tend to suffer more than younger people when they do fall. I'm in my 80s, and I don't want to follow in my father's footsteps when it comes to broken bones -- especially hips and femurs.

There are things that medical clinicians can do to help their older patients avoid broken bones. These include not prescribing progressive eye lenses. Progressive eye lenses make the floor come up to you when you look down and older patients wearing progressive lenses often miss the last step on the stairs and go down hard. Caution your patients about walking dogs. Often the leash gets wrapped around a person's leg or the dog lunges and pulls an older person down. Caution patients not to climb up on stools or ladders. Falls from ladders are often fatal even if the distance is not too high. Review a patient's prescribed medicine(s) and supplements. Often older patients keep taking a drug they no longer need but no one

has told them to stop. Some medications can cause light headedness. Older patients may have lost weight or process medications differently than younger patients, and their medications should be adjusted accordingly. Older patients should be advised to get rid of throw-rugs and the like to avoid tripping and falling. Older patients should be encouraged to walk and lift mild weights to improve bone strength. Older patients should be encouraged to eat a healthy diet such as a Mediterranean diet. This is my list. I'm sure you can add others to your list of helping older patients avoid broken bones.

My latest bone scan showed I had osteoporosis in my left femur. This is no doubt a result of the medications I take for my prostate cancer. I know that I'm at higher risk for a broken bone if I fall. I look to my medical practitioners for tips on avoiding any broken bones, and I keep my fingers crossed.

I know my case is anecdotal, but I believe it helps patients and medical practitioners to hear stories about how the average person has dealt with bone issues throughout their life - dem bones dem bones dem dry bones.