

## Biomedical Research Saved My Sister's Life

Biomedical research and its impact, is evidenced everywhere in our everyday lives. For me, it's had a more significant impact when my sister, Caitlin, was diagnosed with a life-threatening disease. My sister was born as a healthy baby, or so it appeared. Shortly after birth, she developed breathing problems throughout the day and night, troubling doctors. Multiple CT scans and ultrasounds showed nothing wrong initially. Follow up visits with her pediatrician continued and more tests were done until an appointment at Phoenix Children's Hospital - then the horror began. A CAT scan showed an abnormality, i.e. a tumor, and surgery was performed less than 12 hours later. This new scan revealed cancer cells deep within her body, surrounding her spinal cord and descending aorta. Biomedical research directly saved my sister by correctly diagnosing and treating her life-threatening illness with an experimental treatment.

My sister had a large tumor surrounding her descending aorta, and at the inferior part of her abdomen. The abnormality was identified as neuroblastoma, Stage IV, because it had metastasized to the liver and lungs. It was a grim prognosis at the time (it is still today, but odds are much better in part due to my sister - there's even a medical journal article about her). The tumor had a fine fibrillary background within. Consisting of varying cells from small immature blue cells (small developing tumor cells) to larger more matured ones. Since neuroblastoma creates pockets surrounding it consisting of tumor cells, it was a challenge to treat. Treating the tumor with aggressive chemotherapy, being the ideal resolve of shrinking the tumor.

Chemotherapy consisted of Carboplatin and Etoposide among other experimental drugs that were ineffective by themselves. Remaining as a disturbing thought, nurses would don large, heavy duty gloves before even looking at the chemicals, then to have it pump into my sister veins, was nothing but troubling. The intense chemotherapy that lasted a total of twelve weeks, was a challenge. Then when her white count began to drastically plummeted, the worry only increased. My sister began another drug, Neupogen. A white blood cell stimulant to raise the

white blood cell count. In turn, Neupogen only increased the number of side effects experienced by my sister. Despite these long trials. The tumor barely shrunk. Then, days before the surgery to remove the cancer, my sister's Broviac catheter port developed an infection. Plus, the surgery was changed to an arteriogram (x-ray of blood vessels). Revealing, the tumor was now directly against, if not in her descending aorta. The surgery then went through the anterior side of the body, the surgeons made a horizontal, approximately 5 inches, cut along her stomach to reach the tumor. From this they had to navigate and cut a few nerves to further expose the tumor for a more complete removal of the tumor; however further damaging the sympathetic nervous system. Now, my sister sweats frequently from her hands and feet. A small price to pay to have my sister.

While we are all afraid of cancer, it is more of an abstract idea, but when someone close to you is diagnosed it is much more real, and therefore scarier. So, when my sister was diagnosed with neuroblastoma, it wasn't just scary, but terrifying. The sole reason for my sister's survival is the experimental treatment she was exposed to. That experimental program was the only chance to treat, and save my sister's life. That experiment was so successful, that it is now the designated standard treatment. Experimental trials are in truth risky because they are unknown of what will occur, but it saved my sister's life. Without the courage to perform such experiments, biomedical research would be so minuscule, to today's technology. Resulting not just in the death of others, but my sister. Thinking about each individual piece from observation, to testing, to prognosis, to diagnosis, until finally reaching treatment. Biomedical research enabled my sister to sit here, next to me today. Each test and each drug were crucial to her recovery, and without it she may not have survived. Without the research performed by biomedical professionals, my sister would be like a leaf in the wind that slowly leaves forever. Now, we wait to see if it is truly ever "over". Even if cancer does reappear, I believe the future biomedical professionals will guide my family, and I, to peace.

Citations:

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