Reflections

Parents' choices

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It was a lovely evening in June 1961. The emergency room (ER) was quiet, and I was relaxed as the medical officer on duty (MOD), at the Langley Airforce Base Hospital. Diane walked in, 18-years-old, daughter of an officer. In a soft voice she said that she was having a headache. Her history revealed no significant family risk factors, no prior headaches and no recent trauma. Physical examination, including neurological and retinal exams, was not significant. I gave Diane an analgesic, sent her home, and asked her to return should the headache persist.

About an hour later, Diane returned to the ER. Her headache was not any better, she was uncomfortable and seemed uneasy. There were no other symptoms and no fever, but I was concerned. This was unusual for her, not having a history of prior headaches and no obvious inciting factors. My re-examination was again not significant, but I decided to admit her for observation and better control of her pain.

The next morning on rounds the nurse reported that Diane had a peaceful night, no further headache, no new symptoms and normal vital signs. I reexamined her. To my shock she had neurological findings that were not previously present: her ankle reflexes were diminished and her lower extremity muscles were weak. I became alarmed, and suspected that she had poliomyelitis, presenting as encephalitis the night before. A plan was immediately made for transfer by helicopter to the larger Navy hospital across Hampton Roads. I was extremely upset by the tragedy that was rapidly unfolding as the result of the choice that Diane's parents had made six years earlier.

In the few minutes for our transfer to be implemented, the situation changed dramatically. Diane became progressively paralyzed. We had to act fast. An iron lung was necessary for her to survive if the ascending paralysis involved her thoracic muscles. Fortunately, Langley had one. Unusual for a small hospital; it was perhaps as a result of the base being the Headquarters of the Tactical Air Command, and as part of a regional program.

The iron lung and polio

The iron lung was a negative pressure sacrophagus-like breathing machine invented by Philip Drinker and Louis Agassiz Shaw at Harvard University in 1927 in response to the need in polio patients. In 1961, at the time of our desperate need, there were approximately 1,200 in the United States. Patients were kept in it usually for several weeks until their weakened chest muscles recovered from the viral attack. It was life-saving, but patients found it extremely uncomfortable. Everything had to be done for them through ports in the sides of the lung, and boredom was only partly relieved by an overhead mirror for viewing surrounding activity.

Diane's breathing started to become labored. We placed her into the iron lung with no time to spare. Her breathing immediately improved. The helicopter was cancelled and ground transportation arranged because of the large piece of equipment. We transported her to the Naval Hospital accompanied by two of us, technicians, and her parents.

Polio epidemics began in 1916, with acute outbreaks in the 1940s and 1950s. Jonas Salk (AΩA, NYU

Grossman School of Medicine 1937) developed an injectable vaccine in 1953 of killed polio virus with antigen intact that was introduced widely in the U.S. two years later. Cases quickly fell from 13.9/100,000 in 1954 to 0.8/100,000 in 1961. Albert Sabin (AΩA, NYU Grossman School of Medicine, 1937, Alumni), introduced a trivalent attenuated oral vaccine in 1960. Both vaccines were shown to be safe in large trials. Polio was considered to be eradicated by 1979.

An attack of paralytic polio carried a mortality rate of five to fifteen percent. Most patients who survive recover in about four to six weeks, but may have residual muscle weakness requiring physical therapy for months or years. Some never recover full function, as in the case of President Franklin Roosevelt.[1]

A burning question recurs over and over again in my mind. Why didn't Diane get the Salk vaccine? She was 12-years-old in 1955 when it became available. I didn't of course raise that question with her parents, who loved her and I'm certain would do everything to protect her. Were they poorly informed of its availability and benefits? Were they afraid of its side effects even though studies demonstrated it to be safe? Was it recommended to them and they made a choice to decline, or was their health care provider reluctant or uninformed.

Lack of being well informed is dubious considering the huge public information campaign at the time. The March of Dimes polio posters were everywhere.

Diane's tragedy brought back memories of my little sister Rita who had developed an ear infection which progressed to mastoiditis and meningitis, from which she died. Rita was eight-years-old, I was five. It was a year before sulfonamides were introduced clinically by Gearhart Domagk. My parents did not have a choice.

COVID

Fast forward from 1961 to the present—with the large numbers of men, women, and children who have not been vaccinated against the current COVID-19 pandemic. The two diseases are different of course, but they share the concept of vaccine protection (for the more severe COVID-19 infections) and long term effects (long COVID-19). There are many reasons, why people choose not to be vaccinated but in the U.S., where the vaccine is widely available people are in a position to make a choice. For underage children the choice is made by parents, as it was for Diane's parents and there are multiple factors that enter into that choice. Parents can make a choice with the considerable information now available. The benefit seems to far outweigh the risk for most ages, as was the case regarding the polio vaccine for Diane.[2]

I think frequently about that young woman whom I had seen in the ER at Langley one lovely summer evening many years ago. I left the service shortly after the acute illness assaulted her that day, and lost track of her. Did Diane survive? I hope so. If she survived, did she recover completely? I hope so. Did she have residual muscle weakness? I hope not.

As a parent, I can only imagine what went through the minds of Diane's parents when the illness struck. They made a choice for their young child. They probably believed that their choice was in her best interest. It's good to have a choice.

References

1. Smithsonian National Museum of American History. What happened to polio. (Online) Dec. 18, 2018. http://American history.Sci.edu/polio. www.worldometers.info.
2. National Center for Immunization and Reporting Disease, Div. Of Viral Diseases. May 24, 2022.

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