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**My experience as a patient with subarachnoid hemorrhage.**

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*AJNR Am J Neuroradiol* 1990, 11 (2) 229-230

<http://www.ajnr.org/content/11/2/229.citation>

This information is current as  
of April 19, 2024.

## My Experience as a Patient with Subarachnoid Hemorrhage

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At approximately 11 o'clock on the morning of January 14, 1989, while at home with my wife and son, I experienced a sudden severe pain in the right side of my neck after mild exertion. Within minutes it progressed to a severe, unilateral, violent headache. I had never had one like it before, but I ignored it for about 3 minutes until I began to have nausea and persistent vomiting. When the vomiting turned to "dry heaves," it occurred to me that I might be suffering a subarachnoid hemorrhage. I asked my wife, Peggy (who is also a radiologist), to call a neurologist friend of ours and request that he come to our home immediately.

He was just completing his morning rounds at the hospital and said he was "on his way over." The pain had by now become bilateral, diffuse, and constant. I felt as if the top of my head had been blown off. As we waited, the house was quiet, and the sound of each passing car raised my hopes that it would be our friend. Because I was vomiting, I could take no oral medication, and as we kept no narcotics at home, I had nothing to ease the worsening pain.

The neurologist arrived 20 minutes after we had called, and his first words to me were, "We're going to make you feel better." He immediately gave me some IV Demerol. This provoked more vomiting, which he treated with Vistaril and then more Demerol for pain. Then Peggy and my son, Martin, somehow got me to the car, and in 12 minutes we arrived at the Loma Linda Medical Center Emergency Room. There I was relieved to see the face of my longtime neuroradiology colleague, Joseph Thompson, who was waiting with a wheelchair to rush me up to the CT scanner (but not before a nurse insisted on getting some preliminary information about me and strapping an identification bracelet on my wrist).

By this time I was well sedated, and don't recall having the CT scan, but I do remember Joe showing me the scans and saying, "Well, it looks like there's blood in the suprasellar cistern." At that time, there was also blood in the connecting cisterns, including the prepontine, but no hemorrhage was seen in the cisterna magna or ventricles.

I replied, "Well, I guess we've got to do an angiogram." My memory is sketchy, but I later learned that the operative permit was signed by Peggy after the need for it and its risks were discussed with her. By this time, it was already Saturday evening, and Peggy had called our friend, Derek Harwood-Nash, a neuroradiologist in Toronto, to obtain the telephone number of Dr. Charles Drake of London, Ontario. She planned to ask him to fly to Loma Linda and assist in my care if the angiogram revealed an aneurysm of the tip of the basilar artery.

That night I had a complete cerebral arteriogram via a right transfemoral approach. To be a patient experiencing a cerebral angiogram when you are quite cognizant of what is involved is a unique situation. Even though I was heavily sedated, I was aware of what was transpiring. My experience probably differed from that of the average patient because I was in my own department with people around me whom I loved and trusted. The fact that the study was performed by my dear friend and partner, Joe, greatly relieved my apprehension about the discomfort of the procedure and its potential complications.

After the local anesthetic was applied to the groin, I felt a pleasant numbing that alleviated any fear of a subsequent needle puncture. When the needle actually pierced the femoral artery, I vaguely sensed and heard the "pop." The insertions

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of the guidewire and catheter were painless, and I had no sensation that indicated the level of the examination. I decided not to look at the fluoroscopic monitor so that Joe would not think I was trying to do his job. While trying to stay alert despite the sedation, I concentrated on holding my breath during the filming.

The test injections with nonionic agents were barely perceptible and did not cause a reaction. During selective injection of the internal carotid arteries, I had a clear sensation of warmth and a slight burning involving the supraorbital distribution of the ophthalmic artery, and I saw a series of bright streaks that resembled falling stars. During selective injections of the vertebral arteries, I felt a diffuse warmth and burning in the muscles of the neck and scalp and had an occasional brief transient sense of dissociation. The relief from the painful warmth in a few seconds ameliorated a sense of foreboding.

A neurosurgeon, whom I knew well, walked by during the angiogram. I remember his saying to me that they suspected that the arteriogram would show an aneurysm of the posterior communicating artery. "If so, we'll do a craniotomy right here," he said, as he traced a circle with his index finger over my right temple. Though this is the kind of comparing of notes that is productive among colleagues working on a case together, I can see, from the patient's perspective, why it is essential not to transmit incomplete results, nor any false hopes. It is imperative that we wait until the problems are truly resolved before anything is discussed with the patient.

As it turned out, Joe came over and said, "I've got good news. We could not identify any aneurysm." I recollect saying to the technicians and nurses as they transferred me from the angiography table to the cart, "Make sure there are four people lifting so you don't drop me."

Although the likelihood of any surgery was decreased, to my relief, by the results of the angiogram, it was decided to obtain an MR scan immediately to eliminate the possibility

that there might have been bleeding from an angiographically occult vascular malformation. More sedation was offered before the imaging, but I declined it. However, several minutes after it began, I was overcome with nausea followed by panic and feeling that I might aspirate in the confines of the scanner. The imaging was stopped, and I was taken out and resedated. I subsequently slept through the rest of the procedure. The scan showed isointense soft tissue (blood) in the prepontine and suprasellar cisterns but neither aneurysm nor malformation.

During the next 10 days, I had two arteriograms, both of which failed to identify any source of bleeding. By now, the breakdown products of the subarachnoid blood caused migrating pain, which moved progressively, over 7 days, from my eyes to the area of the cisterna magna to the cervical spine to the lumbar spine and finally to my thighs before it completely disappeared.

On the 10th day, I was discharged to my home for an extended period of rest. I returned to part-time work in 2½ weeks and to a full work schedule in 3½ weeks. I have been free of symptoms since that time. A follow-up MR angiogram is planned for the near future.

In retrospect, my ordeal differed from that of the usual patient in that I was not nearly as concerned about the performance of the procedures or their complications as I was about the prospect of what they might show and what treatment might ensue, knowing all too well what the possibilities were. Although I had some anxiety about the sensations and pain during the procedure, it was minor. Even so, the experience certainly has increased my empathy toward the fears that my patients have when undergoing these procedures. I would say that constant reassurance as to the progress of a procedure is indispensable, as are clear statements disclosing what will happen next. Performing these techniques in an efficient and painless manner now has a different significance and importance for me.

The reader's attention is directed to the commentary on this article, which appears on the following pages.