

Allegheny General Hospital Neurosurgeon

September 30, 2007 -- Dr. Raymond Sekula is a neurosurgeon at Allegheny General Hospital in Pittsburgh. Dr. Sekula has treated many Chiari patients and has published on the subject. When he approached Conquer Chiari saying he wanted to help our cause, we of course took him up on his offer.

As a first step, we put Dr. Sekula In The Spotlight...

About how many Chiari patients do you see each year?

I see more than 150 patients referred with "Chiari malformation" each year.

Surveys have shown there is a lack of agreement in the surgical community on when surgery is required, what is your criteria for recommending surgery?

There is a lack of agreement in the neurosurgical community because many surgeons are uncomfortable with Chiari malformation. Ignorance in this area persists. In time, surgeons will acknowledge the heterogeneity of complaints referable to Chiari malformation and begin to treat patients rather than imaging studies.

Approximately what percent of patients that you evaluate end up having surgery?

Approximately 50%.

There is also a great deal of variation among surgeons regarding the specifics of the Chiari surgery, how would you describe your standard surgery?

I believe that there are multiple procedures appropriate for patients with Chiari I malformation. Some may do well with bony reduction only while others may do well with tonsillar reduction alone. My standard surgery involves a one inch incision -within the hairline - with a small amount of bone removal (preventing later "cerebellar sag"), bilateral tonsillar reduction with or without a duraplasty.

What are the advantages of performing the surgery in this way?

Ease of postoperative recovery, better cosmetics, and I believe improved long-term outcomes.

How do you define a successful surgery, and what percent of patients with Chiari only (no syrinx) have a favorable outcome?

A successful surgery is one in which a patient obtains marked improvement in symptoms if symptomatic. If a patient is asymptomatic, radiographic improvement (ie. resolution of syrinx) is critical. More than 90% of patients without a syrinx will have improvement in their symptoms.

Can patients with a syrinx ever expect to be symptom free?

For patients with syringomyelia, resolution of symptoms can be expected if surgery is performed early in the course of the disease, for example a patient with a few years of symptoms.

What advice do you give patients on recovering from surgery, returning to work, etc.? Do you recommend physical therapy after decompression surgery?

My patients spend the night after surgery on the regular nursing floor, and I discharge them on the first or second morning following surgery. They can wash the hair and incision on the third postoperative morning. They may return to work in three weeks. I do not recommend physical therapy for fit individuals.

Many people are now describing Chiari as a problem with the size of the posterior fossa, do you agree with this? Do you think this applies to most/all Chiari patients or only a subset of cases?

Marin-Padilla published an influential report in 1981 entitled "Morphogenesis of the experimentally induced Arnold-Chiari malformation." In that report, they induced a small posterior fossa with vitamin A and caused a Chiari malformation.

You published a paper which showed that patients with minimal herniation, but with Chiari-like symptoms, had similar skull dimensions to Chiari patients with larger tonsillar herniations. Do you think this validates the concept of Chiari 0?

Well, maybe. Jerry Oakes published an interesting paper entitled "Analysis of the posterior fossa in children with the Chiari 0 malformation" which indicated these patients have a smaller posterior fossa. In addition to only evaluating six patients, there were other shortcomings to the report, as there were with our morphometric paper.

Research has shown that the traditional definition of Chiari is not really that good, do you think Chiari should be redefined? If so, how?

Absolutely. Tonsillar descent is only one indicator of a posterior fossa problem. This will be resolved in the next decade and the key is morphometric analysis of the posterior fossa.

Why do you think some people develop syrinxes and others don't?

I cannot answer this.

The Piston Theory states that the movement of the cerebellar tonsils, as driven by the cardiac cycle, creates a pressure wave of CSF which forces the fluid into the spinal tissue to form a syrinx. Do you agree with this theory?

I like this theory, but it is a theory - this is one reason I feel it is necessary to perform a tonsillar reduction rather than a large duraplasty. I prefer to treat directly rather than indirectly.

Are you working on any research at this time that you can discuss?

Yes, I am working on posterior fossa morphometrics and outcome analysis.

How do you see Chiari surgery evolving over the next 5-10 years and do you think there will ever be a non-surgical alternative for treatment?

Although I am a surgeon, I would very much like to see a non-surgical alternative for Chiari I malformation. If Marin-Padillas' mesodermal underdevelopment theory is validated in the future, perhaps we can make a difference at the developmental stage during pregnancy as folic acid has for neural tube defects.

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