Chris, a 30-year-old triathlete, came to see me a couple of months ago with an interesting complaint. “Doc, here’s the problem,” he said. “I’m pretty much fine when I’m hanging around, work is no problem and I can run and swim without difficulty. But when I’m on my bike, especially in the aero position, I get this shooting pain down my arm into my fingers.”

He came in wondering whether there was a problem in his arm or his shoulder.

Referred pain, or pain that is referred from a part of the body other than the part where it is felt, is a more common problem than many people realize. The most common site of referred pain is in the shoulder or arm, as was the case with Chris. And like Chris, most athletes who experience this problem come into the doctor’s office thinking the shoulder or arm is the problem.

So, what are the clues that pain is referred from someplace else? In Chris’s case, although he told me his arm was the problem, when he used his arm during daily activities, it didn’t really seem to hurt him. Helpful clues that his shoulder wasn’t the cause of pain included the fact that swimming didn’t hurt, and when he moved his shoulder and arm, nothing seemed to bother him. This told me...
the pain was probably referred from somewhere else. Statistically, the most common site of origin for referred pain into the upper extremities is the neck.

The most important clue was the fact that the pain emerged most often when Chris was in the aero position. In this position the neck is extended, which can cause a condition known as cervical radiculopathy: When Chris's neck was extended, the cervical nerve roots (offshoots of the cervical spinal cord that supply both motor and sensory function to the upper arm) were being pinched when they exited the cervical spine.

During his physical examination, I had Chris bend his neck forward and backward. This didn't bother him. When he rotated his head left and right, again there was no problem. But when he rotated his head and put his ear back toward his shoulder blade, a bolt of pain shot down his arm.

The next step in these situations involves taking x-rays of the neck to make sure the bones are aligned properly. Sometimes an MRI can also be useful to check for a cervical disc herniation. When this happens, the disc may pinch the nerves, causing a shooting pain down the arm. This is classified as referred pain because the impingement on the cervical nerve root causes a shooting pain to refer into the arm.

Physical therapy and anti-inflammatory medicines are the mainstays of initial treatment. Sometimes a short course of oral steroids can help with the initial stages of nerve-related pain. Occasionally, the symptoms don’t go away, and a steroid injection is needed. Rarely, surgery is required to fix the symptoms.

Of course, not all pain referred into the arm comes from the neck. Sometimes, pain comes from other places, such as the heart or the abdomen. A physician should be able to help figure out the cause by listening to the patient’s story, performing a physical examination and occasionally using further diagnostic tests such as an MRI or EKG (heart test) to help figure out the cause of pain.

After examining Chris, I suspected that the pain in his arm was coming from his neck. An MRI showed a herniated cervical disc compressing the cervical nerve root at the sixth cervical vertebra. We started him on medicine, put him in physical therapy and he was asymptomatic within four weeks.

If referred pain is suspected, some good detective work can help determine the place it is coming from and provide clues on how to fix it.

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