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The Case of a Man with Chest Pains



Patient/Family Perspective

This was a patient who came to the resident clinic and was seen by one of my senior residents. In residency, after seeing each patient, a resident precepts with an attending physician who supervises and teaches. The resident then goes back to the patient with final recommendations. This was an eighty-six year old man who came to the clinic out of his wife's insistence. His wife had wanted him to see a doctor for a few years at that stage, because of occasional chest discomfort. He was a retired owner of a landscaping company. During his retirement he attended to their garden, did some rebuilding of their house, and walked to the beach a couple of times per week during the summer to do some fishing. Their house was about a mile and a half away from the beach. From time to time he would get chest tightness while waking fast or going up the stairs. This never lasted more than a few minutes and always went away as soon as he stopped and rested. He'd been having these pains over the previous couple of years, but tried to avoid seeing a doctor and took no medications. The symptoms hadn't changed since he started having them few years back, he did not consider them too bothersome and was generally satisfied with his current state of health. His physical examination and office ECG were unremarkable.

Physician's Perspective

As I heard this resident present the case I recognized, as did the other resident, that this was a case of what we call a chronic stable angina. It is a chronic chest pain usually related to blockages in the arteries supplying the heart muscle. It is quite reasonable to offer a trial of medical management—prescribe a few pills, in a case like this (ACC/AHA 2002 guideline update) and see if symptoms will improve. The range of possible interventions could be from doing nothing (if the patient prefers it that way in spite of a medical recommendation to take a medication) to performing some non-invasive tests such as a stress test (walking on a treadmill or getting an injection of a medication and monitoring the heart) and echocardiogram (ultrasound of the heart), if the patient wanted to go in the direction of aggressive early intervention. Sending a patient to a cardi-

ologist is reasonable too, but arranging for a coronary angiography as the first procedure is an overkill. Coronary angiography is an invasive procedure in which a catheter is introduced into a large artery in the groin and threaded up into the heart to look at its blood vessels—coronary arteries. It is an overkill, because it's an invasive procedure with side-effects. Such a procedure is warranted when there is an indication that the patient is at risk, and that risk outweighs the risk of a procedure. “Primum Non Nocere” (“at first, do no harm”) is a maxim from the Hippocratic oath taken by most physicians.

Non-invasive tests are usually done first, to determine whether the risk of an invasive procedure would be justified. When a non-invasive procedure is negative—the patient is not likely to benefit from the invasive one, while the risks remain. The patient and the physician have to be aware that by accepting a coronary angiography, one gets on the conveyor belt that can lead to other procedures such as angioplasty with placement of stents, or coronary artery bypass surgery. Angioplasty is a procedure whereby a small balloon is inflated inside the blood vessel that has a narrowing thus stretching it back open. A stent, which is a metal spring-like structure, is then placed to prevent the re-expanded blood vessel from closing right back. Coronary artery bypass graft surgery is as major a surgery as one could think of. The chest is sawed open and grafts (either a small artery from the chest or veins from the leg, or both) are used to connect the big artery (aorta) with the heart arteries that are compromised by a narrowing. To do that, the heart sometimes has to be temporarily stopped.

The resident intentionally did not discuss options with the patient, knowing that this was a loaded issue. A patient with a complaint of chest pain, no matter how innocuous, could end up having a heart attack, as can anyone who does not have a chest pain for that matter. But in this case, the doctor can be blamed for not preventing it. The resident accurately enumerated the patient's options. The supervising physician promptly replied—“when this patient has a heart attack and you are in court, what will you say then?” The resident went along with the idea of defensive medicine and proposed to send this patient to arrange for a coronary angiography. For that she called a cardiologist with whom she'd done a rotation earlier and whom she liked. The resident then went back to the patient with the goal of convincing him to do the “right thing.” If the patient would have declined her proposal, she would label him as non-compliant to provide herself with some degree of comfort.

Patient/Family Perspective

This old man didn't want to defy his new doctor and went along. He essentially made up his mind without hearing about the possible side-effects of the procedure, including heart attack, stroke, cardiac arrhythmias, cardiac tamponade (bleeding into the sac that surrounds the heart that leads to rapid heart failure), trauma to the artery caused by hematoma (bleeding around the groin artery), hemorrhage, reaction to contrast medium (a dye injected to visualize blood vessels on X-ray) and others. Generally, the risk of serious complications ranges from 1 in 1,000 to 1 in 500 (MedlinePlus). Coronary artery bypass graft surgery has more dangers, including, among others 1 to 2 % risk of death, risks of kidney failure, stroke, decline in memory and other cognitive functions (Knipp et al, 2004; Hunt et al, 2000; Ho et al, 2004; Mayo Clinic 2004). Successful surgeries are well publicized, such as ones of David Letterman and President Clinton, but people who wake up after a surgery with brain damage usually remain known only to their families.

Even a benign-appearing non-invasive test such as a cardiac exercise stress test, for example, has side-effects. Among patients undergoing this test, eight in 10,000 will have some serious complication such as a heart attack, serious arrhythmia, or death; death specifically occurs in one in 20,000 (Ellestad, 1980).

In the case of our patient, I think it is important to point out that the decision was made without giving the patient the benefit of education and choice. Subsequently, an "informed consent" would be obtained to insure that physician was protected in case something went wrong during the procedure. The dialog I reported between the resident and supervisor is akin to the inner dialog that goes on in the minds of many physicians.

A few weeks later, I heard about this patient again. He underwent coronary angiography and some blockages were found. It is not at all surprising that an eighty six year old person would have some blockages in the coronary arteries, regardless of whether they have any chest pains or not. What made this case stick in my memory was that not only was the first angiography in my opinion unnecessary but now he was going for a second one. This was because the cardiologist to whom he was originally sent could perform only diagnostic procedures because of the kind of facility he worked at (his hospital did not have a backup of a cardiothoracic surgeon). To actually fix the problem, this old man now had to go to another cardiologist who had to repeat angiography and fix the plumbing—

blockage in one of the blood vessels of the heart. This “fixing” however was not of any proven benefit. Medical scientific evidence shows that opening blood vessels works in an acute heart attack, and in unstable (worsening) angina, but not in chronic stable angina in an 86 year old patient.

Physician’s Perspective

The New York Times magazine presented an interview of two top heart experts by Gina Kolata in March 21, 2004 (Kolata, 2004, excerpted with permission from the New York Times magazine). They were Dr. David Brown, an interventional cardiologist at Beth Israel Medical Center in New York and Dr. David Waters, a cardiologist at the University of California at San Francisco. The reporter says, “...the old idea was this: Coronary disease is akin to sludge building up in a pipe. Plaque accumulates slowly, over decades, and once it is there it is pretty much there for good. Every year, the narrowing grows more severe until one day no blood can get through and the patient has a heart attack. Bypass surgery or angioplasty — opening arteries by pushing plaque back with a tiny balloon and then, often, holding it there with a stent — can open up a narrowed artery before it closes completely. And so, it was assumed, heart attacks could be averted.

But, researchers say, *most heart attacks do not occur because an artery is narrowed by plaque. Instead, they say, heart attacks occur when an area of plaque bursts, a clot forms over the area and blood flow is abruptly blocked. In 75 to 80 percent of cases, the plaque that erupts was not obstructing an artery and would not be stented or bypassed. The dangerous plaque is soft and fragile, produces no symptoms and would not be seen as an obstruction to blood flow.*” (my emphasis)

“[...] Instead, recent and continuing studies show that a more powerful way to prevent heart attacks in patients at high risk is to adhere rigorously to what can seem like boring old advice — giving up smoking, for example, and taking drugs to get blood pressure under control, drive cholesterol levels down and prevent blood clotting.”

Since this was not my patient, I did not hear about him again but do hope that no harm came to him. The physicians were made to feel better by reassuring themselves that they did “all that could be done” and safer by knowing that after all the procedures, even if the patient died of a heart attack, no one could blame them since they carried out the standard rec-

ommendations, and involved a specialist to give this patient every possible “advantage.”

Here I would like to speak of some of the reasons that the specialists agree to give these kinds of “advantages.” A succinct answer comes again from the New York Times article mentioned above (Kolata, 2004) “... Dr. David Hillis, an interventional cardiologist at the University of Texas Southwestern Medical Center in Dallas, explained: ‘If you’re an invasive cardiologist and Joe Smith, the local internist, is sending you patients, and if you tell them they don’t need the procedure, pretty soon Joe Smith doesn’t send patients anymore. Sometimes you can talk yourself into doing it even though in your heart of hearts you don’t think it’s right.’

“Dr. Topol said a patient typically goes to a cardiologist with a vague complaint like indigestion or shortness of breath, or because a scan of the heart indicated calcium deposits — a sign of atherosclerosis, or buildup of plaque. The cardiologist puts the patient in the cardiac catheterization room, examining the arteries with an angiogram. Since most people who are middle-aged and older have atherosclerosis, the angiogram will more often than not show a narrowing. Inevitably, the patient gets a stent.”

“‘It’s this train where you can’t get off at any station along the way,’ Dr. Topol said. ‘Once you get on the train, you’re getting the stents. Once you get in the cath lab, it’s pretty likely that something will get done.’”

“Even more disquieting,’ Dr. Topol said, ‘is that stenting can actually cause minor heart attacks in about four percent of patients. That can add up to a lot of people suffering heart damage from a procedure meant to prevent it.’”

“‘It has not been a welcome thought,’ Dr. Topol said.”

Patient/Family Perspective

Now what of our patient, what would I want him to have done if he was my loved one, a family member or a friend? I think that first he needs to start with an attitude that a doctor is someone who can provide information and opinion but not someone to rely upon in making decisions. One can see a physician like a painter whom one hires to paint one’s house. A painter can give his expert opinions and advice but cannot make the final decision. Why not? Because he does not know who you are as a human being, what is important to him may not be important to you. And if you really want to paint your bedroom purple, you’ll do it even if your

painter finds it distasteful. We need not discount our nature and what is important to us in life and relegate decision making to a physician. We know ourselves better than anyone else can know us.

He should have approached this as any other decision in his life, asked what options there were. If not satisfied with the options given to him, he could have asked for more options. He needed to know about the risks and benefits of doing the procedures, of taking medicines alone, or of doing nothing at all. He should have asked about the accuracy of the test. In my opinion, when nothing seems like a good option, it is better to do nothing than to rush in. Asking for another opinion and looking for other alternatives may be appropriate. No doubt he would have encountered some resistance from his doctor because of the numerous reasons discussed above. But he would be able to make a better decision for himself.

