Letter to the Editor

Editor's Spotlight/Take 5: CT Pulmonary Angiography After Total Joint Arthroplasty: Overdiagnosis and Iatrogenic Harm?

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Your *Editor's Spotlight/Take 5* [3] on the issues involved in the diagnosis, overdiagnosis, and management of pulmonary embolism following THA was fascinating. It prompts me to toss two concepts into the discussion.

In reality, there is no specific treatment for pulmonary embolism, except in those rare cases of major compromise of pulmonary function or cardiovascular function. We do not treat the pulmonary embolism that has already occurred. The management is directed against the next embolism. It is a common misconception that we are “treating” the existing embolism. In most cases, we simply let nature take its course with that embolus, and hope to prevent the next one. A perfect example of this concept is the placement of a filter

after a pulmonary embolism. The filter will have nothing to do with the existing pulmonary embolism, but is aimed to prevent another one.

With that concept in mind, the obvious next question is, “Which emboli need to be treated?” While there is no answer to that question, and there probably never will be until we can identify the presence of existing clots so as to really evaluate the risk of the next embolus, having some idea of the true incidence of asymptomatic emboli would be helpful.

We performed that study in patients after total hip arthroplasty [2]. Since the radiation burden of the C¹⁵O₂ scans was so low, we got IRB permission to do them every 4 days. If that test was positive, we followed up with a ventilation/perfusion (VQ) scan; when a patient had a positive VQ scan, we confirmed the diagnosis using pulmonary angiography.

Even though the patients were on one form of prophylaxis or another (aspirin, dextran plus external pneumatic compression, or warfarin), 23% had pulmonary embolism on angiography. Approximately 83% of those with a positive angiography were in asymptomatic patients.

Our study is at the opposite end of the spectrum from the study by D'Apuzzo and colleagues [1]. They assessed data from more than 8,000 patient records, while we studied intently only 73 patients. Nevertheless, I see no reason to think that our experience was unique, although today patients mobilize after surgery more quickly.

Even with that exception, our study was representative of the mobilization protocols of that time, and thus of thousands of patients over those decades. Thus, it clearly identified the very common occurrence of asymptomatic pulmonary embolism after THA.

If we make the reasonable assumption that similar events were occurring in other representative groups of THA

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patients, then—in a way similar to the realization that deep vein thrombosis was 50% or so rather than 10 or 15% after THA in unprotected patients—asymptomatic pulmonary embolism were common then, and are likely to still be common now. In many cases, those asymptomatic pulmonary emboli were never identified, and so were of no clinical significance.

As an aside, when I published my first paper on reducing deep vein thrombosis in hip patients 50 years ago, little did I recognize that we would still be in pursuit of these issues five decades later!

References

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