Medical Imaging Northwest News

Technology in touch with you…

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Often Unrecognized Clinically...Pulmonary Embolism (PE)

David A. Davidson, M.D.
Board Certified Radiologist

Dr. David A. Davidson, Medical Imaging Northwest radiologist and Medical Director of Covington MultiCare Radiology Department met with Dr. Calvin P. Wallace, OB/Gyn Covington MultiCare, to discuss a patient that had a normal chest X-ray, yet complained of chest pain and shortness of breath. Dr. Davidson said that he suspected that the patient may have a pulmonary embolism as a result of her recent hysterectomy. A CT of the chest, using pulmonary angiogram protocol, was recommended to confirm his suspicions. Within thirty minutes of his consult, the patient had a CT scan.

Calvin P. Wallace, MD
OB/GYN Physician
MultiCare

"My patient needed a pulmonary CT to rule out embolism. I was ready to send her to the hospital, when I talked with Dr. Davidson who said the Radiology Department could get her right in to perform the test. I was impressed that we had the technology right here at MultiCare Covington. They had her in for a CT within 10 minutes and Dr. Davidson determined that she had a Pulmonary Embolism."

Image 1: Bilateral Pulmonary Emboli

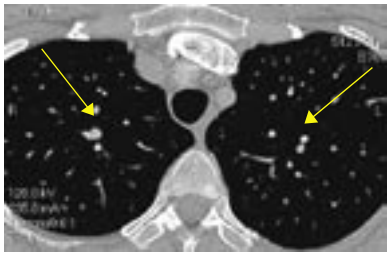
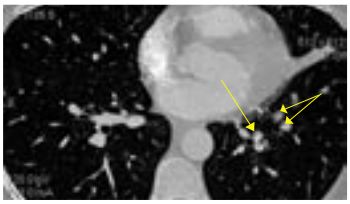


Image 2



Findings:

While the main pulmonary artery trunk and the right and left main pulmonary arteries appear normal, there are a number of peripheral vessels seen bilaterally with filling defects consistent with the presence of multiple pulmonary emboli. There is an area of linear atelectasis in the lower lung. The lungs are otherwise clear bilaterally within the field of view obtained. No hilar or mediastinal adenopathy or mass is identified.

Impression:

Positive CT pulmonary angiogram study for multiple small bilateral pulmonary emboli in tertiary vessels, as described above.

Pulmonary embolism (PE) is an extremely common and highly lethal condition that is a leading cause of death in all age groups. About one-third of people with undiagnosed and untreated pulmonary embolism don't survive. A good clinician actively seeks the diagnosis as soon as any suspicion of PE whatsoever is warranted, because prompt diagnosis and treatment can dramatically reduce the mortality rate and morbidity of the disease. Unfortunately, the diagnosis is missed more often than it is made, because PE often causes only vague and nonspecific symptoms.

Signs and symptoms:

The symptoms of pulmonary embolism can vary greatly, depending on how much of the lung is involved, the size of the clot and overall health — especially the presence or absence of underlying lung or heart disease.

Common signs and symptoms include:

- Sudden shortness of breath, either when you're active or at rest.
- Chest pain that often mimics a heart attack. The pain can occur anywhere in the chest and may radiate down the shoulder, arm, neck or jaw. It may be sharp and stabbing or aching and dull and may become worse when the person breathes deeply, coughs, eats, bends or stoops. The pain will get worse with exertion and won't go away with rest.
- A cough that produces bloody or blood-streaked sputum.
- Excessive sweating.
- Rapid heartbeat (tachycardia).
- Lightheadedness or fainting (syncope).

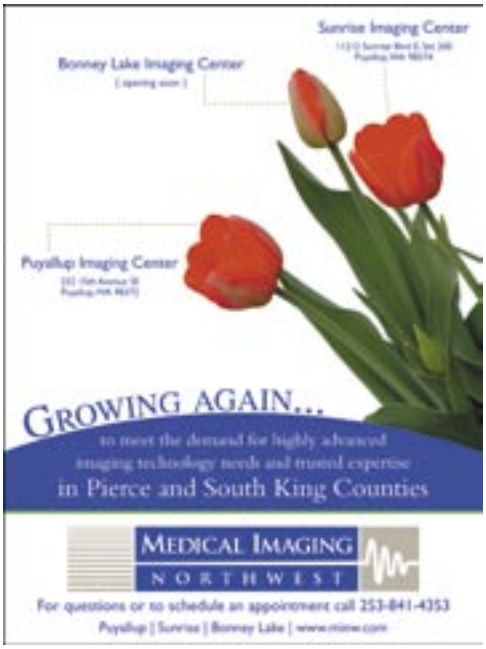
The most sobering lessons about PE are those obtained from a careful study of the autopsy literature. Deep vein thrombosis (DVT) and PE are much more common than usually realized. Most patients with DVT develop PE and the majority of cases are unrecognized clinically. Untreated, approximately one third of patients who survive an initial PE, die of a future embolic episode. This is true whether the initial embolism is small or large.

Although PE often is fatal, prompt diagnosis and treatment can reduce the mortality rate dramatically.

Risk Factors for Pulmonary Embolism

Age > 60 yrs
Atrial Fibrillation
Cigarette smoking (including passive smoke)
Estrogen receptor modulators
Extremity trauma
Heart Failure★
Hypercoagulability disorders★
Antiphospholipid antibody syndrome
Immobilization★
Indwelling venous catheters
Malignancy★
Obesity
Oral contraceptives/estrogen replacement
Pregnancy and post partum★
Sickle cell anemia
Surgery within past 3 months★

★*One of the most common risk factors*



222 Professional Center
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Evening Appointment Hours:
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Mammo | Mon-Fri Last Appointment 6:50pm

Sunrise Imaging Center
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Evening Appointment Hours:
MRI | Mon-Fri Last Appointment 7:00pm

Medical Imaging Northwest News is a monthly publication designed to tell the community about our physicians' expertise and imaging studies done at Medical Imaging Northwest's outpatient centers and partner sites.

If you have questions, comments or ideas for future publications, you may contact Vicki Brown, Marketing Communications Manager at Vbrown@minw.com 253-841-4353.

Thank you for your interest.

Need an MSK Consult? Call 253-446-3978!

If you need an MSK consult, you can call a member of our team directly. We are ready to accommodate your musculoskeletal exam needs.

Jill M. Dobbins, MD
– MSK Fellowship from the University of Florida Medical Center, Gainesville Florida; Fellowship in Emergency Radiology, Massachusetts General Hospital, Boston, MA

David A. Davidson, MD
– Body Imaging Fellowship, University of Massachusetts, Worchester, MA, emphasis on MRI, CT and Ultrasound. Trained with David Stark and Dick Waite in Body and Musculoskeletal MRI respectively.

Jorge M. Medina, MD
– MSK Fellowship from Indiana University, IN; Body Imaging Fellowship from Boston University Medical Center, Boston MA. Trauma and sports related injuries are of special interest.

Helen H. Shigemitsu, MD
– MSK Fellowship University of California, San Diego, San Diego, CA

David E. Shook, MD
– Cross Sectional Imaging Fellowship, Mayo Clinic Rochester, MN

Imaging, Evaluation and Treatment of the Wrist and Hand

Dr. Shigemitsu explains that computed tomography (CT) allows evaluation of the osseous structures of the wrist for fracture, erosions, and scleotic or lytic changes which can be related to a variety of disease processes including trauma, degenerative disease, or metastatic processes. In addition, joint space evaluation and alignment of bony structures can be imaged with CT.

MRI is primarily utilized in wrist imaging for evaluating the soft tissue structures such as the ligaments, tendons, triangular fibrocartilage complex (TFCC), and carpal tunnel (Figures A and B). Common symptomatic wrist pathologies including ligament tears, tenosynovitis, tears of the triangular fibrocartilage complex and carpal tunnel pathology can be detected.

These wrist MRI images show the complexity of the wrist.

Figure A
Tear of the triangular fibrocartilage.

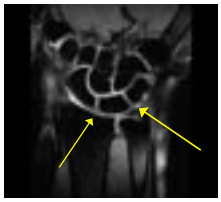

Figure B
Normal scapholunate and lunotriquetral ligaments.

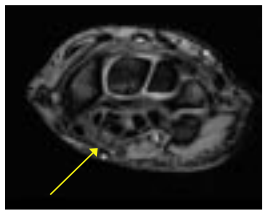

Figure C
The median nerve within the carpal tunnel.

Figure D
Normal appearance of the triangular fibrocartilage complex in a different patient.

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