

THE CODE

The Official Medical Coding Newsletter of MiraMed, A Global Services Company

Cardiovascular Etiology of Chest Pain

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As much as one-quarter of the population of the United States experiences chest pain that is not related to the heart. Chest pain may also be caused by problems in the lungs, esophagus, muscles, ribs or nerves. Some of these conditions may be serious and life-threatening. When we hear chest pain we may automatically assume cardiovascular chest pain and when we do, certain conditions come to mind, one of which is Coronary Artery Disease (CAD). CAD occurs because coronary arteries become damaged or diseased. Cholesterol-containing deposits, otherwise known as plaque, in arteries and inflammation, are usually to blame for coronary artery disease. The blockage in the heart blood vessels reduces blood flow and oxygen to the heart muscle itself. This can cause pain known as angina pectoris; *angere* (to strangle) and *pectus* (chest). It's a symptom of heart disease but typically does not cause permanent damage to the heart. The chest pain may spread to the arm, shoulder, jaw or back. It may feel like a pressure or squeezing sensation.

Angina pectoris can be triggered by exercise, excitement or emotional distress and is relieved by rest or sublingual nitroglycerin (NTG). NTG works by relaxing (widening) blood vessels, allowing blood to flow more easily. NTG can be used for acute relief of angina and prophylactically before activities that may precipitate angina.

Another condition is myocardial infarction (heart attack). Approximately one million people per year have an acute myocardial infarction (AMI), of which 50 percent survive upon presentation to the emergency department and 25 percent will exhibit in-hospital mortality. This is manifested in the reduction in blood flow through heart blood vessels causing the death of heart muscle cells. Though similar to angina chest pain, a heart attack is usually a more severe, crushing pain usually in the center or left side of the chest and is not relieved by rest. The symptomatology usually found is: sweating, nausea, shortness of breath or severe weakness which may accompany the pain.

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If you have an article or idea to share for *The Code*, please submit to:

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Positive thinking attracts peace and prosperity and allows us to live life more happily.

Anurag Prakash Ray

Cardiovascular Etiology of Chest Pain (Continued from page 1)

In Myocarditis, in addition to chest pain, this heart muscle inflammation may cause fever, fatigue, tachycardia; *tachy* (swift) and *kardia* (heart) and trouble breathing. Although no blockage exists, myocarditis symptoms can resemble those of a heart attack.

Hypertrophic cardiomyopathy (HCM) is a genetic disease which causes the heart muscle to grow abnormally thick or hypertrophy; *hyper* (beyond, exceeding) and *trophia* (nourishment). About one out of every 500 people have HCM, equally affecting men and women. Sometimes this leads to problems with blood flow out of the heart which causes an elevation in blood pressure in the ventricles and the blood vessels of the lungs. Chest pain and shortness of breath often occur with exercise. Over time, heart failure may occur when the heart muscle becomes thickened. This makes the heart work harder to pump blood. Along with chest pain, this type of cardiomyopathy may cause dizziness, lightheadedness, fainting and other symptoms.



Mitral valve prolapse is a condition in which the mitral (meaning shaped like a *mitre*) valve (the valve between the left atrium and the left ventricle of the heart, consisting of two tapered cusps) in the heart fails to close properly. A variety of symptoms have been associated with mitral valve prolapse, including chest pain, palpitations and dizziness, although it can also have no symptoms, especially if the prolapse is mild.

A variety of factors can cause coronary artery dissection (SCAD). It is a rare but deadly condition, which results when a tear develops in the coronary artery. The artery wall has three layers (tunica intima, media and adventia/externa) and when a tear occurs, blood is able to pass through the innermost layer *tunica intima* (inner coat) and become trapped and bulge inward. It may cause a sudden severe pain with a tearing or ripping sensation that goes up into the neck, back or abdomen.

So, as a coder, before coding symptom codes such as: R68.84 jaw pain, R07.2 precordial pain, R07.9 chest pain, unspecified; search chart documentation for other symptoms exhibited by the patient that may lead you to query the physician for an underlying specific diagnosis responsible for the condition.

Bone Fracture Coding Advice

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Fracture of the bone is a condition where there is a breakage in the continuity of the bone. A patient having a fracture of the bone will feel pain over the affected site. The physician will assess the nature of the fracture and provide medical intervention depending on the type of fracture. The provider might prescribe analgesia to relieve pain or immobilization such as splinting, strapping or casting. A bone reduction might be necessary to correct the alignment of the fractured bone.



Traumatic vs Pathologic Fracture

A traumatic fracture is usually caused by an accident or any external environmental cause such as: falling, tripping, slipping, etc. A pathologic fracture is caused by disease such as bone cancer or osteoporosis. It is important that the coder determines the type of fracture.

As per coding advice, do not automatically consider a traumatic fracture when a patient suffers trauma or a fall results in a fracture. The coder also needs to consider the amount of force suffered from a fall or trauma. For example, if the patient underwent some light stretching and suffered a fracture, this would not be automatically coded as a traumatic fracture.

The coder must know the underlying cause of a pathologic fracture or non-traumatic fracture. It is up to the provider to determine if the fracture is traumatic or non-traumatic. Therefore, physician documentation must be obtained to clarify the diagnosis.

Open vs Closed Fracture

Fractures can be either open or closed depending on the skin contour of the affected anatomical site. An open fracture usually has skin breakdown which can be caused by the broken bone. A closed fracture does not have an open wound associated with it.

Closed fractures can be subdivided to different types such as: comminuted, depressed, greenstick, spiral, etc. A patient with an open fracture is at risk of developing an infection due to the skin breakdown. An example of an open fracture is a compound fracture.

As per ICD-10-CM coding advice, if there is no documentation as to whether the fracture is open or closed, the default is closed fracture. More so, if a fracture is not documented as displaced or non-displaced, code it as displaced.

In line with these default guidelines, it is suggested that the coder review the entire medical record for clarification and specificity.

X-ray: An Education

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Have you ever wondered how difficult it is to diagnose a patient with internal problems or diseases without imaging guidance (commonly known as x-rays)? Without imaging guidance, it would probably be hard to tell that a patient has nephrolithiasis, cholelithiasis or appendicitis etc. if the imaging guidance was never invented. Many people would be suffering from a lot of pain without ever knowing why. With the help of imaging guidance it can make the invisible visible, like magic.

Brief History:

The discovery of the x-ray was one of greatest accidents that benefited the world of science, especially the medical field. It was Wilhelm Conrad Roentgen, a physicist, who was the first to observe x-rays in his laboratory in Wurzburg while he was generating a cathode ray tube. The tube that he was working on consisted of encapsulated positive and negative energy. During his experiment he evacuated the air in the tube, then he applied a high voltage and the tube produced a fluorescent glow. He then covered the tube with heavy black paper and discovered a green-colored fluorescent light located a few feet away from the tube. The light ray was capable of passing through the heavy black paper so he concluded that it was a new type of ray being emitted from the tube. And so the magic of making the invisible visible began. A couple of days before Christmas he brought his wife into his laboratory where he took a picture of her hand. The photograph emerged showing the bones of her hand and included the ring on her finger.

X-ray in the Field of Medicine:

This imaging guidance became well known shortly after its discovery and the x-ray became an essential diagnostic tool in the field of medicine. Today surgeons can make a diagnosis without the patient having to undergo surgery.

Several years after its introduction, injuries like skin burns were first attributed to x-rays. At first, it was doubted that x-rays could be the cause of skin damage due to the slow onset of symptoms. But after years of study some researches began to realize the effect of radiation on our body due to some complains of skin burn from some patients who often undergo x-ray. It wasn't until 1904 when Clarence Dally, Thomas Edison's assistant who had worked extensively with x-rays died of skin cancer that a cause and effect was found. His death initiated some scientists to consider the effects of radiation more seriously. Currently, radiation is said to be the most meticulously studied cause of diseases. Although it is clear that the x-ray has advantages and disadvantages, we cannot exclude the fact that this technology is remarkable for its benefits! Without imaging guidance we will not be able to prevent some diseases from worsening if not detected in an early stage which is also why x-ray is an important part of an annual check-up. Healthcare needs to look at the more benevolent side and use it judiciously.



Wilhelm Conrad Roentgen

Stars of MiraMed

This month's Star is ...

Anand Nyaypathy
Assistant General Manager - Quality & Operations
Ajuba International

MiraMed's brightest shining star this month is Anand Nyaypathy.

Anand holds a Bachelor's of Science Degree in Statistics from Loyola College (University of Madras), Chennai. He has over 20 years of experience in the United States healthcare sector, including managing end-to-end revenue cycle management. He is skilled in managing clients and building relationships at all levels to improve and promote smooth functioning of operations. He has achieved significant results related to operations, training and recruitment which has facilitated organizational growth. Anand has extensive experience in transitional projects. He is a certified Six Sigma Black Belt Professional with extensive experience in implementing automation and Lean Six Sigma Projects.



Anand Nyaypathy

Certifications:

- Post Graduate Diploma in Software Development, Shramik Vidyapeeth, Chennai
- Certified Patient Account Technician (CPAT)
- Certified Clinic Account Technician (CCAT)
- Six Sigma Green Belt
- Six Sigma Black Belt

There are three enemies of personal peace:
Regret over yesterday's mistake, anxiety over tomorrow's
problems and ingratitude for today's blessings.

William Ward

Are You a Good Auditor?

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Direction: All medical coding staffs are encouraged to send their correct codes based from the case provided. They must present their codes along with coding clinics, coding guidelines or any coding references applicable for any codes that are to be **Added, Deleted or Revised**. Answers to this scenario will be published in our next issue.

A 55-year-old male presents for nausea and vomiting in the emergency department and is subsequently admitted. He also complains of abdominal cramping and is found to be dehydrated with a high creatinine level after further blood work. As per history of present illness, his symptoms started three days ago and have been increasing in severity ever since. Patient's past medical history includes chronic kidney disease stage 2, benign hypertension and hypercholesterolemia. He is also a former smoker and says he quit smoking during the 90s. At home he takes Lisinopril to control his high blood pressure and Rosuvastatin for his high cholesterol levels, both of which were continued during admission. The patient was initially treated with aggressive IV fluid therapy with normal saline at 250 cc/hour for the dehydration. He was also given IV Lasix to correct his potassium levels. On day three of admission the electrocardiogram showed abnormal heart rhythms which were likely to be caused by a decrease in his potassium level. Nephrology consult ordered a decrease to his IV potassium and gave a diagnosis of tubular necrosis. The patient was discharged after five days and the final diagnoses included:

1. Acute kidney injury causing nausea, vomiting and cramping.
2. Hypokalemia likely due to IV Lasix.
3. Chronic renal failure, stage 2.

	ICD-10-CM
Principal Diagnosis	N17.1
Secondary Diagnosis	N18.3
Secondary Diagnosis	I10
Secondary Diagnosis	E78.1

Correct Answer From Previous Case Scenario:

	ICD-10-CM	Audit Remark
Principal Diagnosis	I49.01	Assign I49.01 as the principal diagnosis. When a patient is admitted for cardiac arrest and provider documents the cause of the arrest, sequence the cause as the principal diagnosis. Cardiac arrest can be the principal or first-listed diagnosis if the underlying condition is not known. It does not matter whether the patient is resuscitated or not.
Secondary Diagnosis	I46.2	Sequence cardiac arrest due to underlying cardiac condition as secondary diagnosis.
Secondary Diagnosis	I50.9	Report code for the congestive heart failure which was treated with diuretics.
Principal Procedure	5A1945Z	The appropriate root operation for the mechanical ventilation for 24 hours is "performance."
Secondary Procedure	0BH17EZ	Add code for the airway intubation.

Coding Case Scenario

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Direction: Code for ICD-9-CM diagnosis and procedure and its corresponding ICD-10-CM and PCS. Answers to this scenario will be published in our next issue.

A 63-year-old female presents to the hospital complaining of right hip pain and swelling. She states her symptoms have been present since last month but only started to bother her a week ago when she fell off the porch at her house. She is subsequently admitted and undergoes further diagnostic study and an x-ray of the hip reveals deterioration of joint structures and subchondral sclerosis around her hip. Past medical history shows a history of borderline diabetes but her blood glucose during admission is normal. Provider offers surgery as an alternative and she is then scheduled for a hip replacement. In the surgical suite, a standard posterior approach incision was marked out. Incision was then made down to the iliotibial band and gluteal fascia which was identified and dissection was carried up to the hip joint until direct visualization was achieved. During the procedure, the surgeon states that the acetabulum and femoral head were removed in order to place the new components. The metal femoral head as well as the polyethylene acetabular cup were trialed and had a good fit. Finally, bone was attached to the joint with epoxy cement and hemostasis was achieved. There was expected blood loss of 300 ml during the surgery but she recovered uneventfully. Post-operative diagnoses stated: Primary osteoarthritis of the right hip.

Correct Answer from Previous Case Scenario:

	ICD-10-CM	Coding Remark
Principal Diagnosis	E87.1	Assign either dehydration or hyponatremia as the primary diagnosis. Patient was admitted due to altered mental status which was caused by the two conditions.
Secondary Diagnosis	E86.0	Two codes are required to fully capture dehydration with hyponatremia.
Secondary Diagnosis	T50.2X5A	Report code for the adverse effect of hydrochlorothiazide that resulted in dehydration and hyponatremia.
Secondary Diagnosis	I10	Report code for malignant hypertension treated with home medications during the admission.