Atrial Fibrillation

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'My heart pounds, my strength fails me; even the light has gone from my eyes.'
– Psalm 38:10.

Today I want to talk about a heart condition that involves an irregular heartbeat called Atrial Fibrillation which is also known as 'AFib'. AFib is the result of the heart's electrical conduction system that has gone awry. AFib, although sometimes goes undetected until the patient gets an electrocardiogram (ECG), usually is responsible for easy fatigue, a fluttering sensation in the chest, or even some shortness of breath or chest discomfort. When the heart goes into an irregular rhythm it is referred to an arrythmia. AFib is a common form of an arrythmia that has some serious health implications.

Our bodies rely on our hearts to supply our other organs and systems (the brain, the kidneys, the stomach, and muscles) with a steady supply of well oxygenated blood. The heart achieves this very efficiently with the synchronized contracting and relaxing of its four chambers that is coordinated by the electrical impulses generated by the myocardial (meaning heart muscle) in a stepwise fashion. Atrial Fibrillation disrupts this smooth flow of electrical impulses and causes an irregular heartbeat that also diminishes the heart's ability to pump blood to the rest of the body

AFib is very prevalent in our population, affecting over 2.2 million people in the US alone. Chances are that several of our fellow parishioners have AFib and may be suffering from some of the complications arising from AFib.

AFib has a genetic predisposition (if your parents or grandparents had AFib, you are 40% more likely to develop it). It becomes more prevalent as we get older (an 80-year-old individual has a 9 times increased risk of developing AFib than a 50-year-old) and is more likely to affect men than women. Other diseases and lifestyles such as a sedentary lifestyle, ischemic heart disease, hypertension, obstructive sleep apnea, morbid obesity, and diabetes increase the likelihood of developing AFib. Curiously, elite endurance athletes are also at higher risk of developing AFib.

AFib can have some devastating complications such as stroke and heart failure. Because AFib disrupts the synchronous contractions of the different chambers of the heart, it can result in blood clots forming in one of the chambers of the heart (the left atrium and more specifically, the left atrial appendage). These clots, when they grow large enough, can break off and shower to other areas of the body, especially the brain. This may result in a stroke (called an embolic stroke). The asynchronous contractions of the heart caused by AFib also puts strain on the heart muscles and, over time, may cause or worsen heart failure.

Atrial Fibrillation is classified into several different categories:

1. Paroxysmal AF – is when the heart goes into AFib for only short periods of time, defined as less than 7 days of persistent irregular heart beating or fluttering and then reverts into a regular rhythm (referred to as normal sinus rhythm or NSR). Symptoms associated with paroxysmal AFib are variable and unpredictable.
2. Persistent AFib is when the irregular rhythm lasts for greater than seven days. This stage usually requires treatment to get the heart back to a NSR.
3. Longstanding AFib is when the heart remains in AFib for longer than 12 months.
4. Permanent AFib happens when the condition lasts indefinitely, persists despite treatments and the patient along with the cardiologist have decided not to pursue further treatment to reverse the AFib
5. Nonvalvular AFib refers to AFib that is not associated with valvular heart disease such as Mitral Valve Insufficiency.

Common symptoms and signs associated with AFib include:

- General Fatigue
- A rapid and irregular heartbeat (the very definition of AFib)
- Fluttering or 'thumping' in the chest
- Dizziness
- Shortness of breath and anxiety
- Weakness
- Faintness or confusion
- Sweating
- Chest pain or pressure (if this is the case call 911 immediately or seek medical help immediately)

Diagnosing AFib requires an EKG (also known as an ECG) tracing to determine the electrical rhythm of the heart. Often, the physician will obtain an echocardiogram, which uses ultrasound waves to produce an image of the heart, to see how well the heart is functioning. Blood tests are often performed to see if there is an electrolyte imbalance or whether blood counts are out of balance that may cause the heart to beat irregularly. Exercise stress tests are also commonly ordered to see how the heart reacts to stress.

If a patient is presenting with symptoms consistent with paroxysmal AFib but is not currently symptomatic, the cardiologist may use a 'Holter' monitor or event recorder of the heart for several days (or longer, even up to a month) to determine whether an arrythmia is present. If you suffer from any of the symptoms mentioned above, please let your doctor know. As mentioned previously, untreated AFib can lead to a heart attack or stroke.

As a reminder, heart attack symptoms are the sudden onset of:

- Chest pain or discomfort.
- Discomfort or pain in the jaw, either arm, upper back or stomach especially when it coincides with shortness of breath or fatigue.
- Cold sweat.
- Nausea.
- Lightheadedness.

Stroke symptoms include the onset of:

- Facial drooping or weakness, especially one-sided. Does your smile droop on one side?
- Arm weakness. Does one arm drift downward after being raised?
- Slurred or irregular speech. Does your speech become garbled?
- Loss of balance.

If any of these signs or symptoms occur, call 911 immediately!!! Survival rates and long-term damage improve dramatically when definitive treatment is started within one hour (60 minutes, 3600 seconds) of either a stroke or a heart attack.

The good news about AFib is that there are several treatment options available, whether it is management or even definitive therapy. Treatment of AFib is directed towards two goals: 1) to reset and control the heartbeat, and 2) to prevent blood clots forming in the heart which may break off (embolize) and cause a stroke.

Once a patient is diagnosed with AFib, he or she may be placed on medications to try to control the speed of the heartrate, to restore the heart's normal rhythm, and to prevent the blood from clotting. These are usually the first things done after receiving a diagnosis of AFib. Types of drugs commonly used to treat AFib include Beta blockers, calcium channel blockers, digoxin, and other forms of antiarrhythmic medicines. Blood thinners (also called anticoagulants) are also prescribed to prevent clots. These include medications such as warfarin (Jantoven), apixaban (Eliquus), rivaroxaban (Xarelto), dabigatran (Pradaxa), and edoxaban (Savaysa).

Often cardioversion therapy will be attempted to reset the heart back into a normal rhythm. Often this will be indicated if a patient is suffering from an elevated heart rate or has bothersome symptoms such as fatigue. Cardioversion is not always successful and even if the rhythm returns to normal, medications are usually prescribed to maintain normal rhythm.

More advanced procedures that involve cardiac ablation may be considered if medications and cardioversion are unsuccessful. These could involve catheter-based therapies such as an electrophysiologic (EP) with a cardiac ablation using heat or cold energy. A newer therapy involves pulsed electrical field ablation. Surgical procedures such as a Maze procedure is usually combined with other open heart surgical procedures.

If someone has AFib and cannot tolerate blood thinners to prevent strokes, a new procedure performed to close or occlude a portion of the left atrium called the appendage. A catheter is advanced through the groin and an occlusion device is placed that seals off the appendage, preventing clots from forming. When open heart surgery is necessary (for example, coronary artery bypass surgery) and AFib is persistent, the appendage can be surgically closed.

In summary, this is a short overview of AFib, its causes and possible treatments. If you think that you are suffering from an irregular heartbeat, please seek treatment as soon as you can. If you wish to learn more, here are some excellent online resources that I referenced:

The American Heart Association (https://www.heart.org/en/health-topics/atrial-fibrillation/what-are-the-symptoms-of-atrial-fibrillation-afib-or-af),

the Mayo Clinic (https://www.mayoclinic.org/diseases-conditions/atrial-fibrillation/diagnosis-treatment/drc-20350630)

or the Cleveland Clinic (https://my.clevelandclinic.org/health/diseases/16765-atrial-fibrillation-afib).