

Difference Between Myocarditis and Pericarditis

Key Difference – Myocarditis vs Pericarditis

Myocarditis and pericarditis are fairly common diseases of the blood circulatory system, and they can be defined as the [inflammation](#) of the [myocardium](#) and inflammation of the [pericardium](#) respectively. Thus the difference between Myocarditis and Pericarditis lies in their place of inflammation. **In myocarditis, inflammation is in the myocardium whereas in pericarditis inflammation in the pericardium.**

What is Myocarditis?

Myocarditis is the inflammation of the myocardium, the muscular tissue of the heart.

Causes

- Idiopathic
- Infections
 - [Viral infections](#) – [CMV](#), [HIV](#), Coxsackie, [hepatitis](#), [adenoviruses](#), etc.
 - Parasitic infections – Chagas disease caused by *Trypanosoma cruzi*, Toxoplasmosis
 - Bacterial infections – streptococcal and diphtheria infections
 - [Lyme disease](#)
- Radiotherapy and various drugs such as methyldopa and penicillin
- [Autoimmune diseases](#)
- Alcohol and hydrocarbons

In the acute phase, the heart is flabby and has multiple focal [hemorrhages](#). In the chronic cases of myocarditis, the heart is hypertrophied and enlarged.

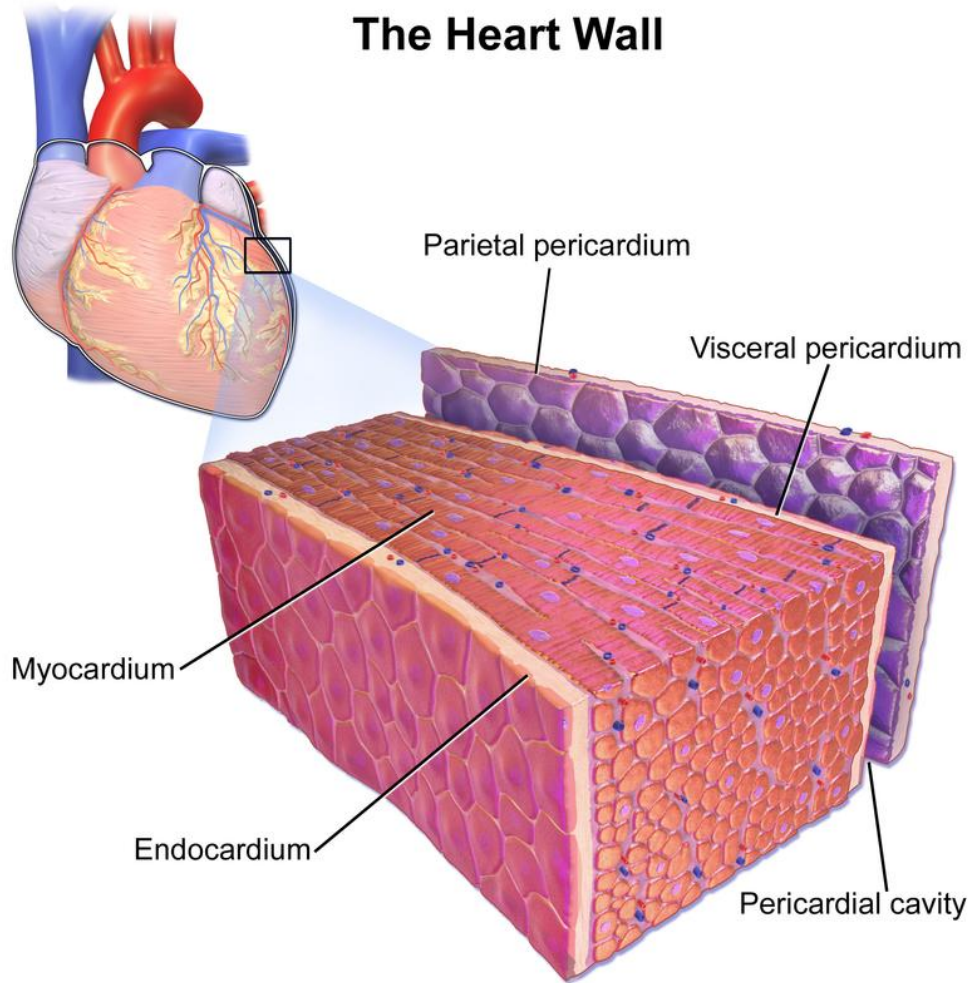


Figure 01: The Heart Wall

Clinical Features

- A fair proportion of patients can be asymptomatic
- There can be fatigue, palpitations, chest pain and [dyspnea](#)
- In the end stage, features of heart failure such as exertional dyspnea, paroxysmal nocturnal dyspnea, and orthopnea may be evident.
- On auscultation, a prominent third heart sound can be identified.

Investigations

- Chest x-ray can show a mild cardiomegaly
- ST elevation is seen in [ECG](#)
- Cardiac enzymes go up
- Viral antibody titers also increase in infective myocarditis due to viral infections
- Endomyocardial biopsy can show myocardial inflammation

Treatment

The underlying cause has to be identified and properly treated. Bed rest is recommended, and the patient should be advised not to take part in any athletic activities at least for 6 months. Antibiotics should be started in the cases of infective myocarditis. When the patient gets heart failure, it should be managed by the administration of standard drug regimen which includes ACE inhibitors, beta blockers, spironolactone, and digoxin. NSAIDs are contraindicated in the acute phase but can be given in chronic disease.

What is Pericarditis?

Pericarditis is the inflammation of the pericardium, which is associated with the deposition of fibrous materials and accumulation of pericardial fluid.

Causes

- Infections
 - Viral infections such as coxsackie and mumps
 - Bacterial infections such as pneumococcal infections
 - TB and different fungal infections
- Post-myocardial infarction complication (Dressler syndrome)
- Malignancies (either primary or secondary deposits)
- Uremic pericarditis
- Myxoedematous pericarditis
- Chylopericardium
- Autoimmune diseases
- After surgeries and radiotherapy

Out of all these etiological factors, viral infections are the commonest cause of pericarditis. The rising levels of HIV infected individuals have contributed to an increase in the numbers of HIV associated pericarditis. In some patients, there can be relapses about 6 weeks after the initial episode.

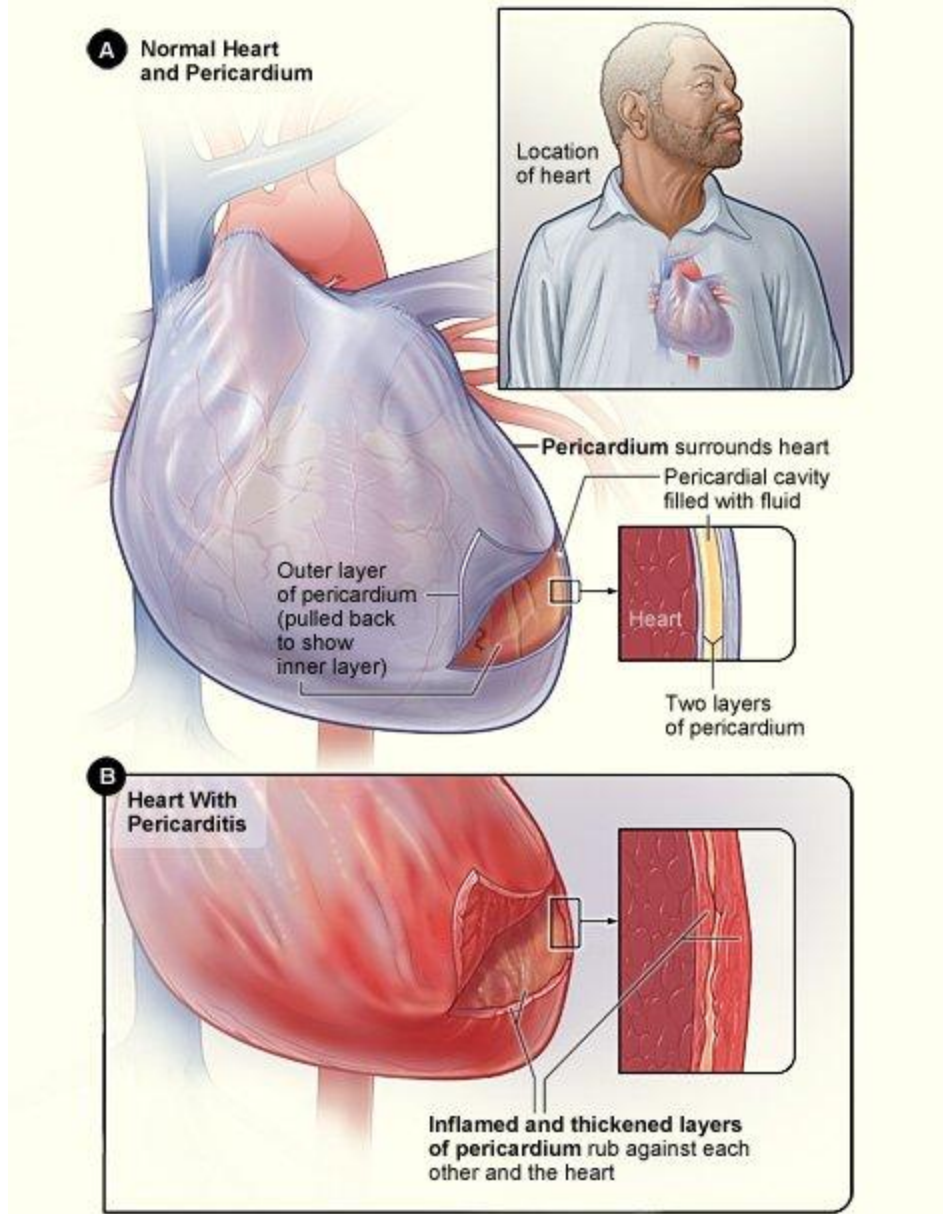


Figure 02: Pericarditis

Clinical Features

- Sharp central chest pain, which is exacerbated by movement, lying down and respiration. It can radiate to the neck or shoulders.
- When the cause is TB, loss of weight, loss of appetite, chronic productive cough, and hemoptysis can be observed.
- A triphasic pericardial rub can be heard during the auscultation which corresponds to the atrial systole, ventricular systole, and ventricular diastole. This is heard best over the left lower sternal edge during the expiration when the patient is leaning forward.
- In infective pericarditis, the patient usually has fever and lymphocytosis or leukocytosis.

- Features of pericardial effusion such as exertional dyspnea, orthopnea, and paroxysmal nocturnal dyspnea can also be present.

Investigations

ECG is the diagnostic investigation. It shows widespread concave (saddle-shaped waves), ST elevation and PR depression. In the case of associated myocarditis, the levels of cardiac enzymes can go up. If the chest X-ray shows cardiomegaly, it should be confirmed by echocardiogram.

Treatment

If the underlying cause is found it should be treated vigorously. Bed rest and oral NSAIDs are effective in a majority of the patients. Aspirin is the ideal drug for patients who have had a recent myocardial infarction. Corticosteroids are given only when pericarditis is caused by autoimmune events.

What is the Similarity Between Myocarditis and Pericarditis?

- In both conditions, there is inflammation of the cardiac tissues.

What is the Difference Between Myocarditis and Pericarditis?

Myocarditis vs Pericarditis	
Myocarditis is the inflammation of the myocardium.	Pericarditis is the inflammation of the pericardium and is associated with the deposition of fibrous materials and accumulation of pericardial fluid.
Inflammation	
The myocardium is inflamed.	The pericardium is inflamed.
Causes	
<ul style="list-style-type: none"> • Idiopathic • Infections (viral, bacterial, parasitic, etc.) • Radiotherapy and various drugs such as methyldopa and penicillin • Autoimmune diseases • Alcohol and hydrocarbons 	<ul style="list-style-type: none"> • Infections (viral, bacterial, fungal, etc.) • Post-myocardial infarction complication (Dressler syndrome) • Malignancies (either primary or secondary deposits) • Uremic pericarditis • Myxoedematous pericarditis • Chylopericardium • Autoimmune diseases

- After surgeries and radiotherapy

Clinical Features

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- There can be fatigue, palpitations, chest pain and dyspnea
- In the end, stage features of heart failure such as exertional dyspnea, paroxysmal nocturnal dyspnea, and orthopnea may be evident.
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Investigation

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ECG is the diagnostic investigation. It shows widespread concave (saddle-shaped waves), ST elevation and PR depression. In the case of associated myocarditis, the levels of cardiac enzymes can go up. If the chest X-ray shows cardiomegaly it should be confirmed by echocardiogram.

Treatment and Management

If the underlying cause is found it should be vigorously treated. Bed rest and oral NSAIDs are effective in a majority of the patients. In the patients who have had a recent myocardial infarction, aspirin is the ideal drug. Corticosteroids are given only when pericarditis is caused by autoimmune events.

The underlying cause has to be identified and properly treated. Bed rest is recommended and the patient should be advised not to take part in any athletic activities at least for 6 months. Antibiotics should be started in the cases of infective myocarditis. When the patient has got heart failure, it should be managed by the administration of standard drug regimen which includes ACE

inhibitors, beta blockers, spironolactone, and digoxin. NSAIDs are contraindicated in the acute phase but can be given in chronic disease.

Summary – Myocarditis vs Pericarditis

Inflammation of myocardium is defined as myocarditis whereas the inflammation of pericardium is defined as pericarditis. As their respective definitions imply the major difference myocarditis and pericarditis lies in the place of inflammation.

Reference:

1. Kumar, Parveen J., and Michael L. Clark. Kumar & Clark clinical medicine. Edinburgh: W.B. Saunders, 2009.

Image Courtesy

1. “Blausen 0470 HeartWall” By Blausen.com staff (2014). “Medical gallery of Blausen Medical 2014”. WikiJournal of Medicine 1 (2). DOI:10.15347/wjm/2014.010. ISSN 2002-4436. – Own work ([CC BY 3.0](#)) via [Commons Wikimedia](#)
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APA: Difference Between Myocarditis and Pericarditis. (2018, February 16). Retrieved (date), from <http://differencebetween.com/difference-between-myocarditis-and-vs-pericarditis/>

MLA: "Difference Between Myocarditis and Pericarditis" *Difference Between.Com*. 16 February 2018. Web.

Chicago: “Difference Between Myocarditis and Pericarditis.” *Difference Between.Com*. <http://differencebetween.com/difference-between-myocarditis-and-vs-pericarditis/> accessed (accessed [date]).



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