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A Patient's Guide to
Prepatellar Bursitis

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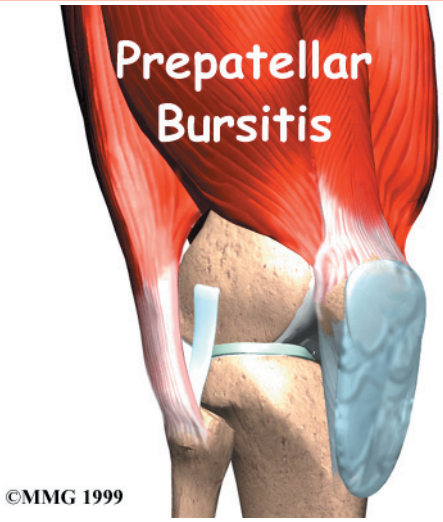


Introduction

Prepatellar bursitis is the inflammation of a small sac of fluid located in front of the kneecap. This inflammation can cause many problems in the knee.

This guide will help you understand

- **how prepatellar bursitis develops**
- **why the condition causes problems**
- **what can be done for your pain**

Anatomy

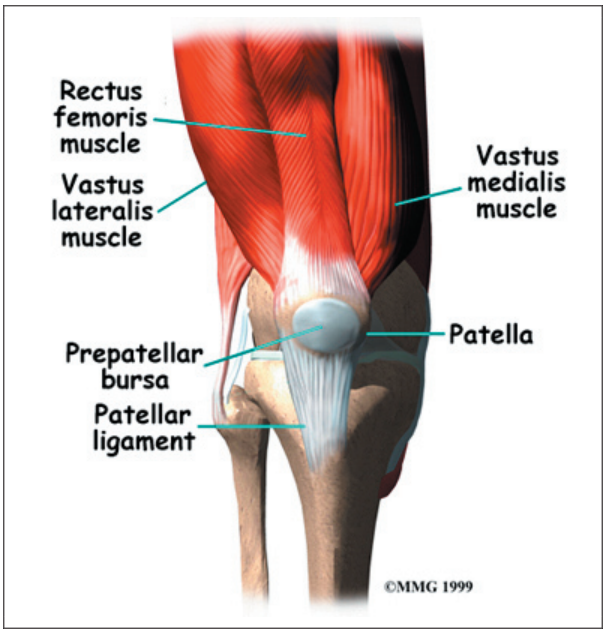
Where is the prepatellar bursa, and what does it do?

A *bursa* is a sac made of thin, slippery tissue. *Bursae* occur in the body wherever skin, muscles, or tendons need to slide over bone. Bursae are lubricated with a small amount of fluid inside that helps reduce friction from the sliding parts. The *prepatellar bursa* is located between the front of the kneecap (called the *patella*) and the overlying skin. This bursa allows the kneecap to slide freely underneath the skin as we bend and straighten our knees.

Causes

How does prepatellar bursitis develop?

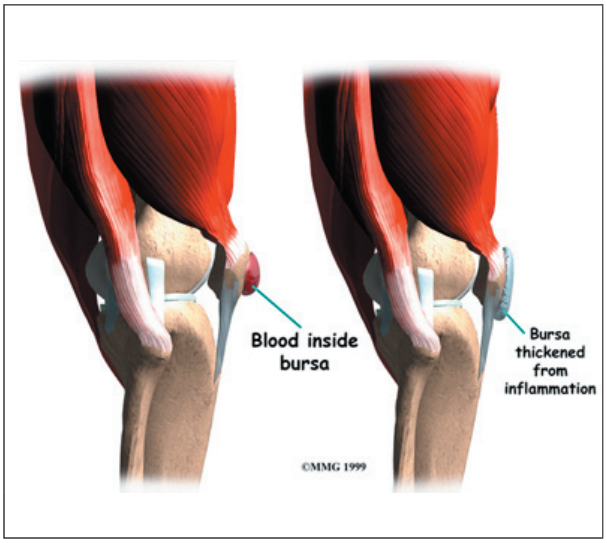
Bursitis is the inflammation of a bursa. The prepatellar bursa can become irritated and



inflamed in a number of ways.

In some cases, a direct blow or a fall onto the knee can damage the bursa. This usually causes bleeding into the bursa sac, because the blood vessels in the tissues that make up the bursa are damaged and torn. In the skin, this would simply form a bruise, but in a bursa blood may actually fill the bursa sac. This causes the bursa to swell up like a rubber balloon filled with water.

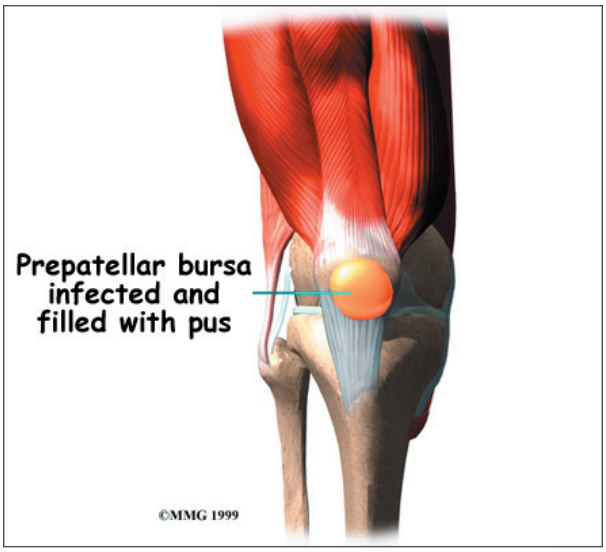
The **blood in the bursa** is thought to cause an inflammatory reaction. The walls of the bursa may thicken and remain thickened and tender even after the blood has been absorbed by



the body. This thickening and swelling of the bursa is referred to as *prepatellar bursitis*.

Prepatellar bursitis can also occur over a longer period of time. People who work on their knees, such as carpet layers and plumbers, can repeatedly injure the bursa. This repeated injury can lead to irritation and thickening of the bursa over time. The chronic irritation leads to prepatellar bursitis in the end.

The prepatellar bursa can also **become infected**. This may occur without any warning, or it may be caused by a small injury and infection of the skin over the bursa that spreads down into the bursa. In this case, instead of blood or inflammatory fluid in the bursa, pus fills it. The area around the bursa becomes hot, red, and very tender.

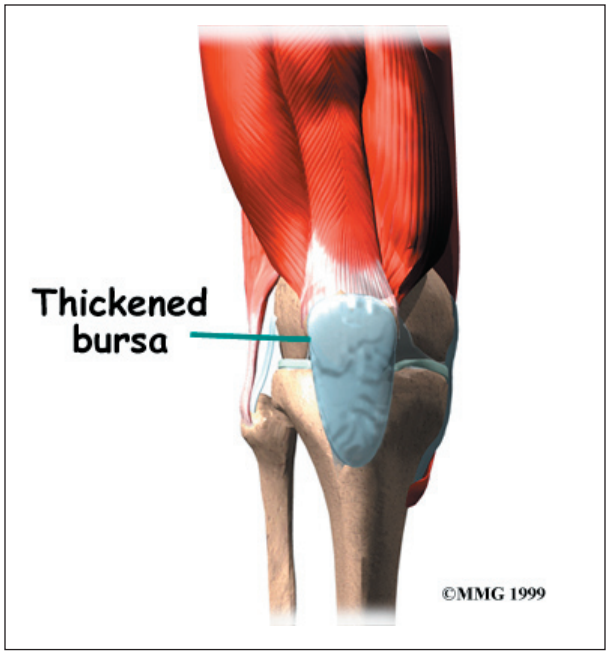


Symptoms

What does prepatellar bursitis feel like?

Prepatellar bursitis causes pain and swelling in the area in front of the kneecap and just below. It may be very difficult to kneel down and put the knee on the floor due to the tenderness and swelling. If the condition has been present for some time, small lumps may be felt underneath the skin over the kneecap. Sometimes these lumps feel as though something is floating around in front of the kneecap, and they can be very tender. These lumps are usually the thickened folds of bursa tissue that have formed in response to chronic inflammation.

The bursa sac may swell and fill with fluid at times. This is usually related to your activity level, and more activity usually causes more swelling. In people who rest on their knees a lot, such as carpet layers, the bursa can grow very thick, almost like a kneepad in front of the knee.



Finally, if the bursa becomes infected, the front of the knee becomes swollen and very tender and warm to the touch around the bursa. You may run a fever and feel chills. An *abscess*, or area of pus, may form on the front of the knee. If the infection is not treated quickly, the abscess may even begin to drain, meaning the pus begins to seep out.

Diagnosis

How do doctors identify the condition?

The diagnosis of prepatellar bursitis is usually obvious from the physical examination. In cases where the knee swells immediately after a fall or other injury to the kneecap, X-rays may be necessary to make sure that the kneecap isn't fractured. Chronic bursitis is

usually easy to diagnose without any special tests.

If your doctor is uncertain whether or not the bursa is infected, a needle may be inserted into the bursa and the fluid removed. This fluid will be sent to a lab for tests to determine whether infection is present, and if so, what type of bacteria is causing the infection and what antibiotic will work best to cure the infection.

Treatment

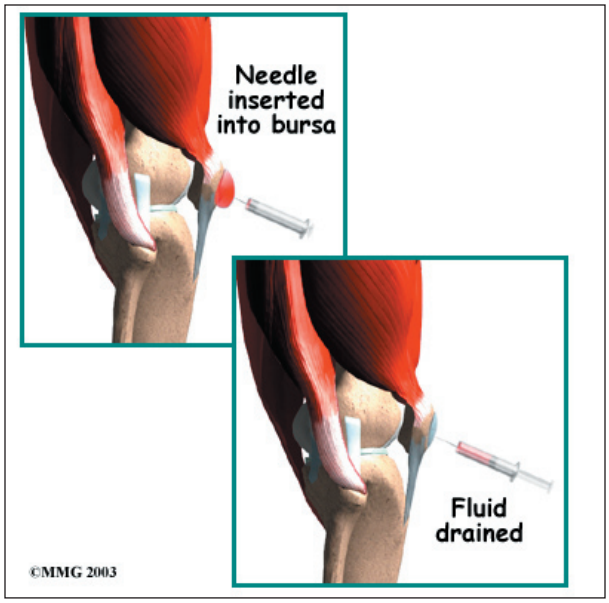
What can be done for prepatellar bursitis?

Nonsurgical Treatment

Prepatellar bursitis that is caused by an injury will usually go away on its own. The body will absorb the blood in the bursa over several weeks, and the bursa should return to normal. If swelling in the bursa is causing a slow recovery, a needle may be inserted to drain the blood and speed up the process. There is a slight risk of infection in putting a needle into the bursa.

Chronic prepatellar bursitis is sometimes a real nuisance. The swelling and tenderness gets in the way of kneeling and causes pain. For people who need to kneel, this creates a hardship both in their occupation and recreational activities. Treatment usually starts by trying to control the inflammation. This may include a short period of rest or possibly a brace to immobilize the knee. Medications such as ibuprofen and aspirin may be suggested by your doctor to control the inflammation and swelling. A knee pad may be useful in making it easier to kneel on the affected knee.

If the bursa remains filled with fluid, a needle may be inserted and the fluid drained. During the drainage procedure, if there is no evidence of infection, a small amount of cortisone may be injected into the bursa to control the inflammation. Again, there is a small risk of infection if the bursa is drained with a needle.



Your doctor may also prescribe professional rehabilitation where the problems that are causing your symptoms will be evaluated and treated. Your physical therapist may suggest the use of heat, ice, and ultrasound to help calm pain and swelling. The therapist may also suggest specialized stretching and strengthening exercises used in combination with a knee brace, taping of the patella, or shoe inserts. These exercises and aids are used to improve muscle balance and joint alignment of the hip and lower limb, easing pressure and problems in the bursa.

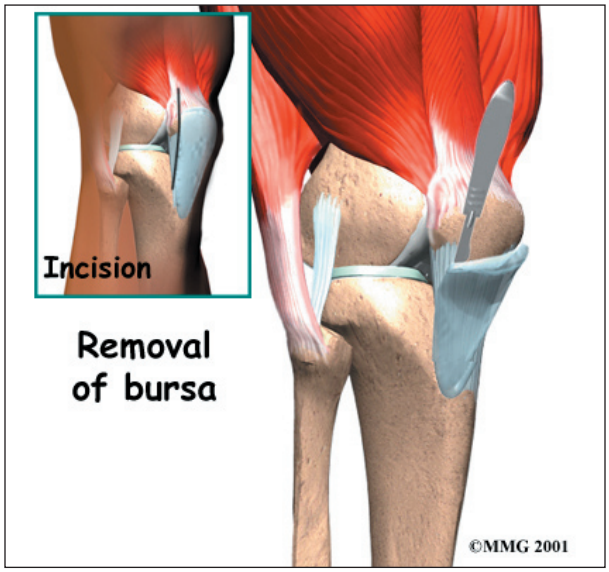
If an infection is found to be causing the prepatellar bursitis, the bursa will need to be drained with a needle, perhaps several times over the first few days. You will be placed on antibiotics for several days. If the infection is slow to heal, the bursa may have to be drained surgically. To drain the bursa surgically, a small incision is made in the skin, and the bursa is opened. The skin and bursa are kept open by inserting a drain tube into the bursa for several days. This allows the pus to drain and helps the antibiotics clear up the infection.

Surgery

Surgery is sometimes necessary to remove a thickened bursa that has not improved with any

other treatment. Surgical removal is usually done because the swollen bursa is restricting your activity.

To remove the prepatellar bursa, an incision is made over the top of the knee (either straight up and down or across the knee). Since the bursa is in front of the patella, the knee joint is never entered. The thickened bursa sac is removed, and the skin is repaired with stitches. You may need to stay off your feet for several days to allow the wound to begin to heal and to prevent bleeding into the area where the bursa was removed.



Some types of bursae will probably grow back after surgery, because the skin needs to slide over the kneecap smoothly. The body will form another bursa as a response to the movement of the patella against the skin during the healing phase. If all goes well, the bursa that returns after surgery will not be thick and painful, but more like a normal bursa.

Rehabilitation

What should I expect with treatment?

Nonsurgical Rehabilitation

Chronic prepatellar bursitis will usually improve over a period of time from weeks to months. The fluid-filled sac is not necessarily a problem, and if it does not cause pain, it is not always a cause for alarm or treatment. The sac of fluid may come and go with variation in activity. This is normal.

Patients with prepatellar bursitis may benefit from two to four weeks of physical therapy. Treatments such as ultrasound, electrical stimulation, and ice may be used to help control pain and swelling.

Therapy sessions sometimes include *iontophoresis*, which uses a mild electrical current to push anti-inflammatory medicine to the sore area. This treatment is especially helpful for patients who can't tolerate injections.

After Surgery

If surgery is required, you and your surgeon will come up with a plan for your rehabilitation. You will have a period of rest, which may involve using crutches. You will also need to start a careful and gradual exercise program. Patients often work with a physical therapist to direct the exercises for their rehabilitation program.

Notes