Housemaid's Knee (Prepatellar Bursitis)

*Housemaid's knee* is also known as *prepatellar bursitis*. It is caused by inflammation of a small fluid-filled sac (the bursa) in front of the kneecap. It more commonly occurs in people who spend long periods of time kneeling. Treatment is usually supportive only and the outlook is generally very good.

What is bursitis?

Bursitis means inflammation within a bursa. A bursa is a small sac of fluid with a thin lining. There are a number of bursae in the body. Bursae are normally found around joints and in places where ligaments and tendons pass over bones. They can also be found in other places if there has been unusual pressure or friction placed on that area.

Generally, the function of a bursa is to help reduce friction and allow maximal range of motion around joints. When there is inflammation within a bursa (bursitis), the bursa swells due to an increase in the amount of fluid within the bursa sac.

What is housemaid's knee?

There are four bursae located around the knee joint. They are all prone to inflammation, or bursitis. However, the bursa in between the skin and the kneecap (the prepatellar bursa) is most commonly affected. Its position is shown in the diagram. Housemaid's knee is the name given to inflammation of the prepatellar bursa.

What causes housemaid's knee?

There are a number of different things that can cause housemaid's knee:

**A sudden, one-off, injury to the knee**
This might be, for example, a fall or direct blow on to the knee.

**Recurrent minor injury to the knee**
This usually happens after spending long periods of time kneeling down, putting pressure on the kneecap (patella). Historically, this was typical of housemaids who spent long periods of time on their knees scrubbing floors; hence, the term housemaid's knee.

**Infection**
The fluid in the prepatellar bursa sac can become infected and cause inflammation within a bursa (bursitis). This is particularly common in children with housemaid's knee. This usually follows a cut, scratch or injury to the skin on the surface of the knee. This injury allows germs (bacteria) to spread infection into the bursa.
Another inflammatory disease
If you already have an inflammatory disease such as rheumatoid arthritis, you have an increased risk of developing a bursitis. Rheumatoid arthritis is a form of arthritis that causes inflammation, pain and swelling of joints.

Gout
If you have gout or pseudogout you have an increased risk of developing a bursitis. Gout is caused by a build-up of uric acid crystals. Uric acid is a chemical in the blood that is usually harmless and passed out with the urine. In gout, it builds up and collects within a joint, causing pain, inflammation and joint swelling.

Who develops housemaid's knee?
Any age group can be affected by housemaid's knee. It is generally more common in males than in females. Housemaid's knee in children is more likely to be caused by infection. Infection is also a common cause of housemaid's knee in people whose immune systems are not working normally. Such people include those receiving steroid treatment or those on chemotherapy treatment for cancer.

Housemaid's knee is more common in tradesmen who spend long periods of time kneeling - for example, carpet fitters, concrete finishers and roofers.

What are the symptoms of housemaid's knee?
Housemaid's knee causes pain and swelling of the affected knee. You may notice redness of the skin over the knee and your kneecap may be tender. You may also have difficulty bending your knee and difficulty kneeling and walking. If housemaid's knee is caused by infection, you may have a high temperature (fever).

How is housemaid's knee diagnosed?
Your doctor is usually able to diagnose housemaid's knee simply by examining your knee. They may ask you questions about your occupation or if you have had any recent knee injury. They may also ask whether you have any history of other joint problems.

If your doctor suspects that housemaid's knee is caused by infection, they may suggest that they draw some fluid from the bursa. This is a straightforward procedure. The skin on the front of your knee is sterilised with some fluid and the procedure is carried out in a clean environment. A small needle is used to take a sample of the fluid from your prepatellar bursa, which is directly underneath the skin in front of your kneecap. This fluid is sent off to the laboratory to look for signs of infection. If infection is confirmed, the laboratory may be able to suggest which antibiotic medicines will treat it.

You do not usually need any X-rays or scans to diagnose housemaid's knee unless your doctor is unsure about the diagnosis.

What are the treatment options for housemaid's knee?
The treatment options for housemaid's knee depend on whether or not it is caused by infection.

Housemaid's knee caused by infection
If your doctor suspects that your housemaid's knee is caused by infection, they may draw some fluid from your knee, as described above. They can send this fluid off to the laboratory for tests. Whilst waiting for the results, they may prescribe some antibiotics for you to take (for example, flucloxacillin with phenoxymethylpenicillin (penicillin V), or co-amoxiclav). Usually, these antibiotics can be taken by mouth. If the infection is severe, your doctor may suggest that you be admitted to hospital and given antibiotics into your veins (intravenous antibiotics).

When the doctor receives the results back from the laboratory after a couple of days, they may suggest that your antibiotics be changed. They should now know the antibiotic that is most likely to be effective in treating the infection.

If your symptoms do not seem to be improving despite 36-48 hours of antibiotics, your doctor may suggest that a small cut (incision) should be made on the front of your knee. This will allow the infected fluid to drain out from the bursa. The procedure may require referral to hospital but does not normally mean an overnight stay.

Housemaid's knee due to other causes
Most episodes of housemaid's knee will settle with supportive treatment and do not require medicines or surgery.

Supportive treatment
The following may be suggested:
- Resting the knee.
- The use of ice packs on the knee (a tea towel wrapped around a bag of frozen peas makes a good ice pack).
- For kneeling, the use of a thick foam cushion or knee pads - these can help to prevent the condition from coming back.
- A physiotherapist can help by teaching you some exercises if your knee joint is affected by a reduced range of movement.
- A stick or a cane can help with walking.
Treatment using medicines
Non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen, can be taken for mild-to-moderate pain caused by housemaid’s knee. These also help to reduce inflammation.

If housemaid’s knee becomes more troublesome, your doctor may suggest that they draw out the fluid from the bursa, using a small needle. They can then inject a steroid medicine into the bursa to counteract the inflammation. The idea is that the fluid will no longer accumulate. Infection must be excluded beforehand, as the steroid injection can make any pre-existing infection worse. You are unlikely to develop complications after this procedure. However, occasionally the following may occur:

- The inflammation of the bursa (bursitis) can come back.
- You can develop infection, bleeding or damage to the tendon joined to the kneecap.

Surgical treatment
In rare cases when housemaid’s knee does not go away, or keeps coming back and is causing intolerable symptoms, surgery may be necessary.

This is most commonly carried out using keyhole surgery. A local anaesthetic is used (an injection is given around the knee joint to numb the area and you are not put to sleep). It is usually done as a day case which means that you are not admitted to hospital overnight. During the surgery the prepatellar bursa is removed. The knee joint can function perfectly well without this bursa and there are not usually any long-term effects to the knee.

What is the outlook (prognosis) of housemaid's knee?
Generally, the outcome is very good with appropriate treatment. You should find the condition clearing up in a few weeks.

However, if housemaid's knee is persistent (chronic) or keeps coming back, you might have long-term pain and problems moving your knee.

Can housemaid's knee be prevented?
You should take care if you have a job or hobby that involves kneeling for a long time or frequently. In such cases, you should use thick foam cushions or knee pads. Knee pads should especially be used by people who have already had an episode of housemaid's knee, in order to prevent it from coming back.
Further reading & references

- Bursae and Bursitis of the Knee; Wheeless' Textbook of Orthopaedics
- Pre-patellar bursitis; NICE CKS, July 2015 (UK access only)

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