CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

PATIENT INFORMATION

Periprosthetic joint infection (knee)

What you're feeling

A periprosthetic joint infection is an infection around a knee replacement. It can start any time after your operation, sometimes months or even years later. The knee is usually painful, swollen and warm. The pain often does not settle the way a normal recovery would, and it may be worse at night or after you have been on your feet.

Everyday tasks can become a struggle. Walking to the letterbox, standing up from a low chair, or getting down the stairs may hurt more than they did before. Some people notice the wound area is tender, or that fluid is leaking from it. A small channel in the skin that weeps fluid, called a sinus tract, is a strong sign of infection and should never be ignored.

The symptoms can be vague. Sometimes the main problem is not obvious pain but a knee that never feels quite right, with stiffness or discomfort that slowly builds. Infection can also make the replacement loose, which causes pain on weight bearing. Because these signs overlap with other knee problems, infection is not always easy to spot.

There is no single test that gives a certain answer. Your surgeon will combine several pieces of information: blood tests, fluid drawn from the knee with a needle, scans, and what they find when they examine you. Some of these tests can be affected by recent antibiotics, so it is important to tell your surgeon if you have taken any. If a late infection is suspected, antibiotics are generally held back until the diagnosis is confirmed or ruled out, because starting them first can hide the bacteria and spoil the samples.

If you have had a knee replacement and your knee is painful, swollen or leaking fluid, contact your surgical team. Early assessment gives you the best chance of a straightforward result.

What's actually happening

A knee replacement is an artificial surface fitted over the ends of your thigh and shin bones. Normally your body accepts it, and the new joint moves smoothly. With a periprosthetic joint infection, bacteria have settled on or around the artificial parts and formed a layer called a biofilm. Think of it as a slimy shield the bacteria build around themselves. Once that shield is in place, your immune system and antibiotics struggle to reach

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them, which is why the infection can smoulder for months and why treatment usually involves surgery as well as antibiotics.

The infection irritates the tissue around the knee, which is why it becomes painful, swollen and warm. It can also loosen the bond between the artificial parts and your bone, so the replacement no longer sits firmly. That loosening is what makes the knee hurt when you put weight on it, and it explains the fluid or weeping wound some people notice.

This happens in about 1% to 2% of knee replacements. Some situations raise the risk. If you have had a septic arthritis, an infection inside a joint, in the past, you are more likely to develop this problem after a knee replacement than after a hip replacement. Wound problems in the first weeks after surgery also increase the chance of infection reaching deep around the new joint.

There are two broad patterns. An early infection appears soon after the operation, when bacteria are still floating freely and have not yet built their shield. A late or chronic infection develops months or years later, when bacteria are well protected and firmly attached. This difference matters, because early infections can sometimes be treated by washing the joint out and keeping the original replacement in place. Late infections usually need the replacement removed and a new one fitted in separate stages.

What we can do about it

Dr Kieran Hirpara, a knee surgeon at Mater Private Hospital Rockhampton, treats infection around a knee replacement with surgery as well as antibiotics, because the bacteria shield themselves in a way that antibiotics alone cannot reach. Patients are generally referred to our clinic by their GP; if a physiotherapist has suggested you see us, you will still need a referral from your GP in order to be eligible for the Medicare rebate. At the clinic visit we take your history, examine your knee and arrange the tests needed to confirm whether infection is present.

An infection around a knee replacement is not a problem you can manage yourself, and physiotherapy or pain tablets will not clear it. What helps is acting early. If your knee becomes painful, swollen, warm or starts leaking fluid after a knee replacement, contact your surgical team straight away rather than waiting to see if it settles.

Treatment depends on how soon the infection appears after your operation. When infection happens within the first weeks, we can sometimes wash the joint out and clean the artificial parts while leaving your original replacement in place. This is done in an operation, and antibiotics are given afterwards. It works better the earlier it is done. Infection within 1 month of surgery has the highest chance of being cleared this way, and the chance drops as more time passes. For infections within 12 weeks after surgery, this approach is a recognised option.

A later infection usually needs a bigger operation. The infected replacement is removed, an antibiotic spacer is placed in the knee, and antibiotics are given for a period. The spacer is a temporary block that holds the space open and delivers antibiotic medicine locally. Once the infection is under control, a new replacement is fitted in a second operation. This two-stage approach is the usual way to treat an established infection, and an infection-free knee is achieved in about two thirds of cases. Some people with certain health problems face a harder course, and we weigh this up with you when planning treatment.

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Choosing treatment is a shared decision. We look at how long ago your replacement was done, which bacteria are involved, your overall health and how unwell the knee is. Then we explain which option suits you and what it involves, and you decide with us how to proceed.

What to expect

The outlook depends a lot on how early the infection is found and treated. When it is caught soon after your operation, washing the joint out and keeping your original replacement can work well. When it is treated this way early, the knee stays free of infection at 1 year in 76% of cases. The earlier this is done, the better the chance it works, and the chance drops as more time passes.

A later infection usually needs the two-stage approach described earlier. An infection-free knee is achieved in about two thirds of cases with this treatment. Some bacteria are harder to clear than others, and infections involving more than one type of bacteria tend to have a harder course. People with other health conditions can also face a tougher road. If the infection does come back after treatment, further surgery is usually needed.

Leaving an infection alone does not work. The bacteria shield themselves in a way your body and antibiotics cannot reach, so the pain, swelling and loosening tend to continue or slowly worsen. The longer it goes on, the harder it becomes to treat.

Recovery after treatment takes time. Many people find their knee moves well once the infection is cleared, and people who have been successfully treated often report their knee feels better than it did before the infection started. But the path is not always smooth. Some people need more than one operation, and a small number need bigger salvage surgery if the infection cannot be cleared any other way.

Your surgical team will keep a close eye on you in the first 2 years after treatment, because this is when infection is most likely to return. If your knee becomes painful, swollen or warm again at any point, contact your team straight away rather than waiting to see if it settles.

When to see someone

An infection around a knee replacement needs to be checked quickly. Contact your surgical team straight away if your knee becomes painful, swollen or warm, or if fluid starts leaking from the wound. Go to an emergency department if you have a fever, feel generally unwell, or the redness and swelling are spreading beyond the knee. Ask for a specialist review if your knee has never felt quite right since the operation, with pain that will not settle, stiffness that keeps building, or discomfort that is worse at night. A small channel in the skin that weeps fluid needs review without delay. If your knee was treated for infection before and the same signs return, contact your team again rather than waiting to see if it settles.

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