

One-Stage Revision Knee Replacement for Infection

For most patients a total knee replacement relieves pain and improves their quality of life. However, like any surgery, there are risks including infection. Approximately 1% of patients undergoing total knee replacement will develop an infection. In the EKRU, our infection rate is below the National average. However, most of the risk of infection in joint replacement is related to patient associated medical conditions. The infection rate in patients with diabetes, inflammatory arthritis, kidney failure or those on steroids is much higher.

What is a Deep Infection?

Deep infections of the joint consist of either acute (where the patient is suddenly ill) or chronic infections (where there can be a low grade grumbling infection for years). Infections can occur years after the knee replacement operation, due to any illness that allows bacteria into the blood stream. The cause of the infection is sometimes never found. Infections often spread to the knee from another infection elsewhere in the body.

If You Feel Unwell with a Deep Infection

Infections can sometimes cause 'Sepsis', which is where infection spreads to the bloodstream. This on occasions can make you feel very unwell, and can even be a risk to your life. It is important that if at any stage you feel unwell and develop symptoms of a fever with a high temperature, you seek urgent medical attention from your GP or local Emergency Department. Please also contact your specialist surgical team to inform them of this development.

Diagnosis of Infection

This routinely involves clinical assessment, blood tests and may involve a procedure to perform a needle aspiration or keyhole procedure to take samples. The success of any treatment relies on knowing what type of infection you are dealing with.

What is the Treatment of a Deep Infection of a Total Knee Replacement?

Unfortunately, treatment with antibiotics alone is not normally enough to treat a deep infection of a knee replacement. A deep infection of a knee replacement is typically treated with surgery with either what is called a **One-Stage Revision Knee Replacement** or **Two-Stage Revision Knee Replacement**. A two-stage revision knee replacement consists of first clearing the infection and then once the infection is cleared, reinserting a new joint replacement. A one-stage revision knee replacement consists of removing the infected knee replacement, cleaning the joint out and reinserting a new knee replacement all at one single operation.

Other surgical options do exist including simply washing out the joint and changing the plastic liner. This treatment tends to be used if the infection is caught very early but is not a successful treatment for long acting infections.

One Stage Revision Knee Replacement

A one-stage revision knee replacement consists of removing the infected knee replacement, cleaning the joint out and reinserting a new knee replacement all in one single surgery setting. After the surgery intravenous (IV) antibiotics are usually given. Generally patients will receive IV antibiotics for around one week after the operation. Depending on the particular bug, the antibiotics will be continued possibly orally for at least 6 weeks. The effectiveness of the treatment is assessed through routine blood tests which include C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR). Although, not one hundred percent effective at detecting infection, these blood tests are an indicator of whether treatment of the infection is working. On some occasions other tests such as a needle aspiration of the joint or tissue samples are required to assess that the infection is cleared. These investigations are usually used when it is unclear whether the blood tests indicate if the infection is cleared or not. Success rates following a one-stage knee revision arthroplasty for infection is quite good and ranges from 87% to 98%.

The main goals of the one-stage revision knee replacement surgery are to clear the infection and to give patients a functional knee once again. However, after any revision knee replacement the knee can feel stiffer or more sore than first-time knee replacements.

Our Team

The treatment of an infected joint replacement typically involves a specialist team in order to manage these complex cases. This team includes Orthopaedic Surgeons, Microbiology doctors, nurse specialists, fellows and other junior doctors. You will also be seen by our specialist nurse and physiotherapy team to help you through the operation and get you mobile again. Microbiology doctors help determine the antibiotics to be used, the duration of antibiotics and whether antibiotics will be delivered intravenously or orally.

Patients undergoing a one-stage procedure typically receive antibiotics for 6 weeks after the surgery. The antibiotics are then stopped if all remains clear.

Side Effects of Treatment

There are risk and side effects of the treatment in a one-stage revision knee replacement surgery including risks of the surgery itself as well as side effects of the antibiotics used in the treatment. Risks of the surgery include stiffness, bleeding (which may require blood transfusion), blood clot in the leg, blood clot to the lung, nerve injury and risk of the general anaesthetic. Although extremely rare, there is also a risk to your life. If the treatment fails to clear the infection, a two-stage revision knee replacement is recommended. Rarely amputation may be the only viable option to clear the infection.

Side effects of antibiotics can include nausea/vomiting, diarrhoea, abdominal cramping, loss of appetite, rash, fever, headache and dizziness. Antibiotics can kill off normal bacteria which act as a defence in the bowel and vagina. This may then allow other fungal (thrush) or other bad bacteria to grow. Monitoring may also be required to ensure the antibiotics do not cause any long term effects on the liver or kidneys.

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www.rdehospital.nhs.uk/patients/services/PEOC/peoc_knee.html

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