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Geniculate Artery Embolization

This information is in addition to the detailed patient information personally provided by Mr Ponosh to you during your consultation.

What is Synovial Neo-Revascularization?

There is increasing evidence and literature demonstrating that an alternative cause of knee symptoms may be associated with abnormal blood vessels forming in the tissues surrounding your knee joint. As part of an abnormal healing process following knee surgery or as part of osteoarthritis, new arteries can grow within and around the joint (known as the synovium). **This is called Synovial Neo-Revascularization (SNR).** These arteries are often less than 1-2mm in size.

These new blood vessels can result in the synovium to become inflamed – causing pain, thickened – causing limited range of movement, the vessels can become leaky – causing effusions or the vessels can bleed – causing joint bleeds (haemarthroses).

In some instances, these symptoms may be related to the joint replacement itself or other mechanical causes, however in many cases no clear cause can be found. Your Orthopaedic Surgeon will have excluded all alternative causes and when no clear cause can be found, they may refer you to Mr Ponosh to investigate and treat with a **Geniculate Embolization.**

What is a Geniculate Artery Embolization (GAE)?

This is a low-risk minimally invasive procedure conducted as an overnight stay in hospital under a local anaesthetic and light sedation. In a specialized x-ray room, via a small incision (1-2mm) in your groin, a small tube is placed in your artery and under x-ray guided imaging and through the injection of contrast dye the nature of the blood supply to your leg, particularly surrounding the knee and joint is assessed.

If the abnormal “blushing” of SNR is found, a tiny microcatheter is maneuvered into the supplying geniculate artery and a liquid glue (Onyx) is injected which travels into even smaller SNR vessels and solidifies like permanent gel. This stops the abnormal vessels of SNR causing further issues. Extensive tests have not demonstrated any concerns of the embolization material interacting with your knee replacement.

If no abnormal vessels are found, no treatment is undertaken. Unfortunately, there is no definitive non-invasive test to identify SNR.

International trials and our local experience suggests most patients have a mild to moderate improvement in symptoms. Some have complete resolution of symptoms but unfortunately, no guarantee of outcome can be made. Improvement of symptoms seem to be most significant in patients with haemarthroses and swelling with the onset of improvement following the GAE seen up to 90 days post procedurally.

Possible complications and side effects.

Bleeding: As the operation is performed on blood vessels a small amount of bleeding can sometimes occur. This is often easily treated with some pressure, but it is common to have some bruising to the area after the procedure. You may also develop a small lump which will resolve by itself. Serious bleeding is uncommon but may require an additional procedure.

False Aneurysm: Very rarely a lump may occur which is in flow with the artery. As we use ultrasound guidance to access your groin vein, injury to the artery is extremely rare.

Pain: This is usually minimal during the procedure and after and can be managed with over-the-counter pain medications such as Paracetamol or Ibuprofen as needed. Please follow the instructions on the packet. In approximately 5% of cases, severe knee pain is reported that resolves over 1 – 2 weeks. This is thought to be associated with the SNR “dying off” or resolving. Occasionally you can get some bruising and discomfort to the groin in the following days, but this is minor. In rare cases the bruising can last for several weeks.

Contrast/Dye Reaction: Very rare. If you have a known allergy, please advise the rooms prior to your procedure.

Kidney Damage: The dye used is excreted via the kidneys, which in most patients is completely normal. However, especially in patients with poor kidney function, the dye can lead to deterioration in the kidney function. Angiograms are used in patients with kidney disease often and safely, but additional precautions are required.

Damaged Blood Vessels: Usually these problems can be dealt with at the time of the procedure, but in rare cases, repair is necessary.

Equipment Failure: It is theoretically possible for a catheter, wire, or device to break and leave fragment inside the body.

Failure of Technique: Occasionally it is not possible to perform the planned procedure, or the procedure does not show the desired result. In very rare circumstances a failed procedure can actually make blood flow worse. Catastrophic outcomes are very rare.

Anaesthetic Risks: Are very low and will be discussed with you by our specialist anaesthetists.

Post-procedural pain: This is normally minimal and can be managed with over-the-counter pain medications such as Paracetamol or Ibuprofen as needed. Please follow the instructions on the packet. In approximately 5% of cases, severe knee pain is reported that resolves over 1 – 2 weeks. This is thought to be associated with the SNR “dying off” or resolving.

Skin changes: The embolization to the abnormal SNR in rare circumstances (less than 5%) interferes with the local blood supply to the skin in a small patch or two. This causes a dusky patch of skin that settles over a few weeks with a simple dressing.

Embolization material: In some patients the Onyx embolization material as it metabolizes will cause a patient to emit an “onion” like odour. It is not harmful but can be notable to visitors. There is also an extremely low risk of the embolization material occluding vessels inadvertently.

Following your procedure.

Following the procedure, bed rest is required for a short time and most people leave the hospital the following morning. You will need someone to drive you home and stay with you the first night after the procedure.

Once discharged, you are able to resume your normal activities within the first 24 – 48 hours. The best advice is not to over-exert yourself and avoid heavy lifting or strenuous gym work for 7 - 10 days. You are not allowed to drive for 24 hours after your procedure.

Mr Ponosh will generally see you for a post-operative appointment 6 – 8 weeks after your procedure. His secretaries will email you post you out this appointment once the procedure has been completed.

Survey.

This questionnaire is a modified Oxford Knee Score (OKS). The OKS was developed in 1998 and validated to measure pain and function after total knee replacement. This assessment will be used to assess your knee before and after treatment with Genulectomy.

Please fill the form out to the best of your ability prior to your intervention, with follow-up assessment at 3, 6 & 12 months.

Please follow the link or scan the QR code below:

<https://www.surveymonkey.com/r/WD5GMC5>



For further information on GAE and SNR please follow the link or scan the QR code below:

What We Do – Click on Genulectomy Artery Embolization

<https://ponoshvascular.com.au/what-we-do/>

