

Popliteal Artery Entrapment Syndrome (PAES)

What is Popliteal Artery Entrapment Syndrome?

Popliteal artery entrapment syndrome (PAES) is an important albeit relatively uncommon circulatory disease that affects the legs of young adults causing leg pain during exercise.

What causes PAES?

PAES is caused by an anomalous arrangement of muscles and/or tendons behind the knee that cause compression of the popliteal artery – the main artery that runs behind the knee.

Who suffers with PAES?

Whilst these abnormalities are often present from birth, they tend not to cause symptoms until the muscles fully develop in early adulthood and typically cause symptoms in individuals partaking in strenuous physical activity e.g. athletes or soldiers.

What symptoms can PAES cause?

Compression of the popliteal artery restricts blood flow to the lower leg leading to pain in the affected calf that is typically relieved with rest – claudication. Involvement of the popliteal vein may cause skin discolouration, swelling and ulceration in the ankle region. Occasionally adjacent nerves may be irritated causing numbness and/or pins and needles in the calf/foot.

How do you diagnose PAES?

The diagnosis of PAES is based on a combination of clinical history, physical examination, and corroborating imaging investigation e.g. MRI. Occasionally, despite a consistent history, physical examination and imaging do not demonstrate an appreciable abnormality. In these circumstances your surgeon may recommend surgical exploration of the region to rule out a rare form of PAES – functional PAES.

What is the treatment of PAES?

PAES results from abnormal anatomy behind the knee joint level and thus treatment is based around surgically restoring normal anatomy in order to relieve compression of the popliteal artery.

Typically, an abnormal partial or complete origin of the medial head of gastrocnemius muscle is found at surgery. Depending on the extent of the muscle anomaly your surgeon may elect to simply divide the muscle band or, for more extensive disease, re-implant the abnormal muscle into the anatomically correct location.

Repeated compression of the popliteal artery may damage the artery with the development of a permanent stricture or blockage. If this occurs formal reconstruction of the artery will be necessary in order to relieve symptoms in addition to correction of abnormal muscle anatomy.

All these surgical treatments involve open surgery through an incision placed in the skin behind the knee joint.

See popliteal artery entrapment surgery for more details.

What is the recovery time following surgery?

This depends on the type and extent of surgery undertaken. If surgery is limited to muscle band division recovery is often rapid with discharge from hospital within 48 hours of surgery and return to routine day to day living activities at 7 days.

More extensive surgery involving either muscle re-implantation or arterial reconstruction requires a longer period of rehabilitation. Clients undergoing muscle re-implantation are placed into a plaster cast to protect the re-implanted muscle for 6 weeks post-procedure. During this period mobilisation will be minimal and aided with arm crutches.

Will I require physiotherapy?

Clients undergoing muscle re-implantation benefit from physiotherapy to strengthen and stretch the muscles of the calf after the initial period of muscle immobilisation.