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## POPLITEAL ANEURYSM IN ASSOCIATION WITH GENU RECURVATUM

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A case of popliteal aneurysm in association with genu recurvatum is described. This is believed to be the first description of this association in the literature.

### CASE REPORT

A 25-year-old male presented in May, 1971, with a 3½-month history of cramp-like pain in the left calf, which came on after walking about 100 yards. The pain passed off quickly when he rested. He reported that he was not aware of his leg having become colder nor did he feel pins and needles in the limb. He had no symptoms in the other leg, and no pain in the joints of the lower limbs. There was no relevant past history of disease or injury.

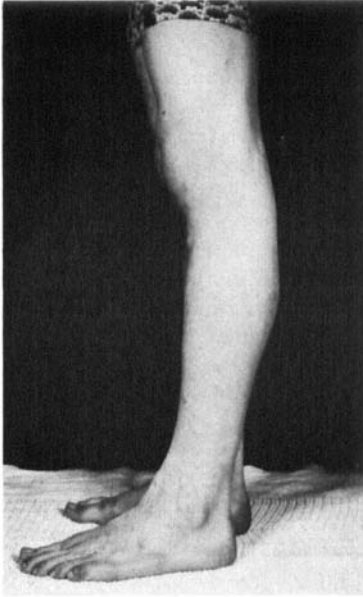
He worked as a mechanic in a local factory which did not involve any strenuous manual labour. He did not do any sports as a hobby.

On examination he stood with a minimal postural scoliosis convex to the left, which was explained by the fact that he had bilateral genu recurvatum, 25°, at the left knee and 10° at the right knee (Figure 1). There was no disparity of the true leg length measurements. There was a mild degree of posterior cruciate ligament laxity at both knees, but no significant degree of ligament laxity at any other joints.

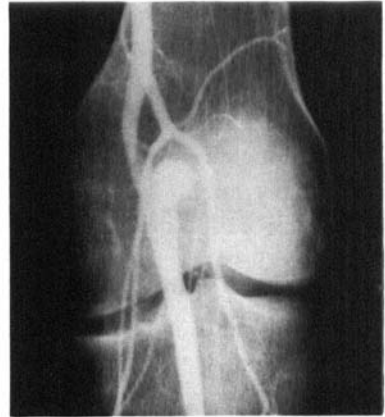
The peripheral pulses in the right leg were normal. In the left leg the femoral and popliteal pulses were normal, but neither the posterior tibial nor the dorsalis pedis pulses were palpable. When he stood with the knee in the full 25° of recurvatum there was a bruit over the popliteal artery. The left foot felt slightly colder than the right. There were no trophic changes of the skin.

General examination revealed him to be in good health and not overweight. Examination of the cardiovascular system showed his pulse to be regular at 90 per minute, B.P. 130/80, heart sounds were normal.

Plain x-ray of the knee showed no degenerative changes of the joint. Femoral arteriography demonstrated a saccular aneurysm measuring about 1½ cm in diameter (Figure 2). The aneurysm did not appear to have caused any erosion of the femoral condyles.



*Figure 1.*



*Figure 2.*



*Figure 3.*

At operation the popliteal artery was exposed through an S-shaped incision in the popliteal fossa. The aneurysm measured  $1\frac{1}{2}$  cm in diameter and arose from the posterior aspect of the popliteal artery in the midline. No abnormality was detected in the posterior capsule of the knee joint nor in the other contents of the popliteal fossa. The aneurysm was mobilised and the artery clamped above and below. The aneurysm was excised and the resultant arteriotomy repaired with 6/0 silk. Inspection of the specimen showed some evidence of old organized thrombus in the wall of the aneurysm.

The wound healed by first intention and when mobilised he was given a tapered raise to the heel of the shoe to reduce the extension strain of the knee when walking. Two months after the operation when he stood without the heel raise there was only minimal recurvatum, possibly due to fibrosis associated with the scar in the popliteal fossa.

#### DISCUSSION

Popliteal aneurysm is an uncommon condition. There were only 10 cases reported in the British literature in the 11 years before 1946; and in review of a 26-year period between 1938 and 1964 Baird et al. (1966) recorded only 61 cases from the total inpatient turnover of the Toronto General and Western Hospitals. The largest recorded series is of 233 popliteal aneurysms seen between 1961 and 1968 in the Mayo Clinic (Wychulis et al. 1970).

Aetiology of popliteal aneurysms is now almost entirely atherosclerotic: 84 per cent of Baird's series, and 99 per cent of Wychulis' series. Of the rarer causes syphilis used to be a common aetiological factor, but much less so of recent years; trauma either direct or indirect (as during meniscectomy) and mycosis make up the remainder.

As to the mode of presentation intermittent claudication is the most common presenting symptom, others being pain and swelling in the popliteal fossa, symptoms of popliteal nerve compression, ankle swelling, and incipient gangrene of the foot. Thrombosis and distal embolism always represent the greatest threat to the viability of the limb and even in larger atherosclerotic aneurysms rupture is an uncommon event (occurring in 8 per cent of Baird's series).

In the case described the symptoms of intermittent claudication were probably due to obstruction of the popliteal artery in the fully extended position of the knee; microembolic phenomena may have been a contributing factor, considering the fact that at presentation neither the posterior tibial nor the dorsalis pedis pulses were palpable, and at operation there was evidence of organised thrombus in the wall of the aneurysm. As to the aetiology, the aneurysm is probably secondary to trauma of the arterial wall as a direct result of the genu recurvatum.

## CONCLUSION

A case of popliteal aneurysm in association with genu recurvatum is described and a causal relationship suggested.

## ACKNOWLEDGEMENTS

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