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Melbourne Vascular Imaging
ABDOMINAL ARTERIES

The renal arteries can become narrowed due to atherosclerosis or hyperplasia. Renal artery stenosis can cause hypertension and renal ischemia. The renal arteries and veins are checked for obstruction and the perfusion in the kidney is also examined. Transplant kidneys are also scanned post- op to check for arterial or venous obstruction and to look for the signs associated with organ rejection.

The splanchnic arteries are also tested. These are the superior and inferior mesenteric, and the celiac arteries. Stenosis or occlusion of these arteries can cause acute or chronic bowel ischemia but this is often prevented by collateralization. Collateralization is the system where native secondary arteries or veins bypass an occluded or stenosed vessel.

The aorta and iliac arteries can also become stenosed or occluded. These arteries can be bypassed using a synthetic graft, or the narrowed section can be opened up using a balloon catheter. The catheter is inserted into the artery till the tip is level with the stenosis. The balloon at the catheter tip is inflated, forcing open the narrowed lumen. A mesh tube called a stent can be fitted inside the artery to prevent further narrowing.

The walls of the aorta can also become dilated to form an aneurysm.
Aneurysms can occur in the thoracic or abdominal aorta but in the abdomen are usually infrarenal. The aorta is considered aneurysmal if the lumen is greater than 3 cm in diameter. If the aneurysm becomes greater than 5 cm in diameter the risk of rupture is significant enough to consider surgery.

The aorta can be opened up and a graft inserted within the lumen, or a stent graft can be inserted via a catheter in the femoral artery at the groin. A patient with an aortic aneurysm will be scanned every 6 months to monitor any increase in diameter. Aneurysms can become filled with thrombus, which may embolise and occlude distal arteries. Aneurysms can in occur in other arteries particularly the popliteal arteries behind the knees. Congenital weakening of the cerebral arteries can cause Berry aneurysms in the brain.