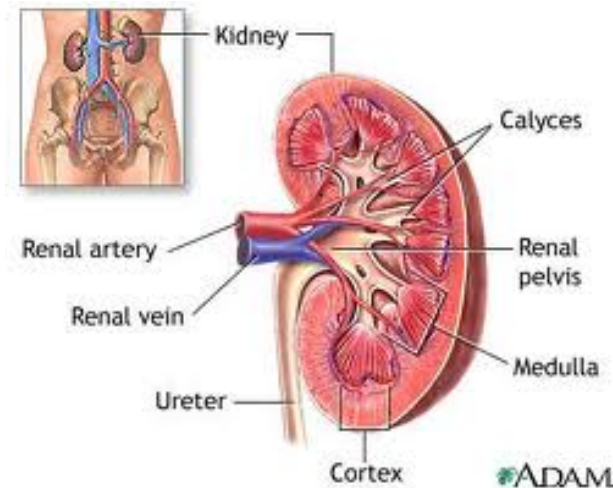


**Renal Artery Stenosis (RAS)**

**Renal Artery Stenosis** is the narrowing of the renal artery as a result of thickening. This is due to a build-up of fatty materials such as cholesterol. The narrowing of the renal artery can impede blood flow to one or both kidneys.

Hypertension and atrophy of the affected kidney may result from renal artery stenosis, ultimately leading to kidney failure if not treated.



**Symptoms**

In, most cases renal artery stenosis is not associated with any obvious or specific symptoms. The main problem is high blood pressure that cannot be controlled with medication.

Renal artery stenosis is often overlooked as a cause of high blood pressure.

Renal artery stenosis can cause high blood pressure and reduce kidney function. Typically, unilateral (one-sided) renal artery stenosis may be related to high blood pressure whereas bilateral (two-sided) renal artery stenosis is more often related to diminished kidney function.

Deterioration in kidney function may develop if both kidneys are poorly supplied, or when treatment with an ACE inhibitor is initiated.

Some patients present with episodes of sudden left ventricular heart failure.

**Diagnosis**

A search for renal artery stenosis may be undertaken in patients with progressive kidney failure of unknown cause, or in individuals with difficult to treat high blood pressure

such as hypertension that does not respond well to medications.

The diagnosis of renal artery stenosis may be considered when any or all of the following are present:

- High blood pressure that is difficult to control with the usual medications.
- An abdominal bruit (a rubbing sound heard with a stethoscope placed on the abdomen suggesting a narrowed vessel) along with high blood pressure.
- Moderate to severely elevated blood pressure, with an onset before age 30 or after age 50.
- Moderate to severely elevated blood pressure in a person with known atherosclerosis elsewhere in the body (history of heart attack or stroke).
- Easily controlled high blood pressure that becomes difficult to control.

An angiogram of the renal arteries is the best test available to detect the degree of narrowing. The angiogram involves insertion of a catheter through the groin into the main artery (the aorta), that is advanced to the level of the renal arteries. A dye is injected, and diagnostic images are taken to see the caliber of the blood vessel and extent of the narrowing.

**Treatment Options**

Endovascular WA offers patients suffering from renal artery stenosis effective treatment using angioplasty and/ or stenting.

Balloon angioplasty allows our interventional radiologist to insert a catheter, under x-ray guidance, into the femoral artery in the groin and advance it to the area of narrowing in the renal artery. By quickly inflating the balloon, the cholesterol plaque causing the narrowing is compressed into the artery wall, effectively unblocking the artery. The balloon can then be deflated and the catheter removed.

There is usually a good success rate, as defined by the blood vessel remaining patent following angioplasty. This depends on the size and complexity of the stenosis, the skill of the operator and the location of the stenosis.

**Frequently Asked Questions**

*Q. When is a stent required?*

**Renal Artery Stenosis (RAS)**

Sometimes a stent is used after angioplasty to prevent the vessel from narrowing again. A stent is a small metal mesh that is designed to support the vessel walls mechanically.

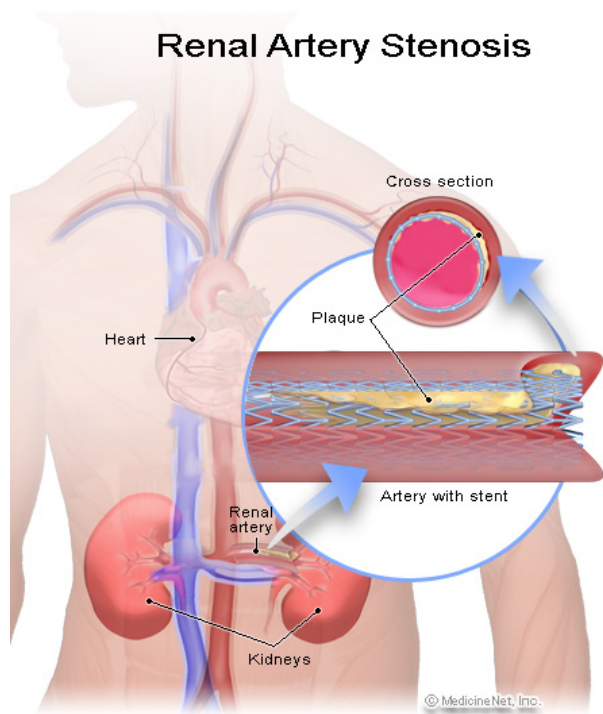
The stent sits on top of a deflated balloon catheter, which is inserted so that the ends of the stent cover the entirety of the stenosis.

When the balloon is inflated, the stent expands, supporting the vessel walls. The stent remains in place even after the balloon catheter is removed, and eventually becomes integrated into the vessel wall.

The success rate is very high.

*Q. Are there any complications?*

Complications include those of angiography as well as formation of a clot or scar tissue within the stent, which may require re-stenting later on.



A new type of stent, the **drug-eluting stent**, has been developed to reduce the risk of scar tissue stenosis within the stent. The drug-eluting stent is currently only used in heart procedures.

If angioplasty is unsuccessful or is not technically feasible, formal bypass surgery may be considered. In this situation, just like in a heart bypass operation, a surgeon will take a piece of normal vein or a synthetic tube and connect the aorta and kidney, bypassing the blocked area.

Unfortunately, if the renal artery stenosis is longstanding and kidney function has been compromised for a prolonged period of time, returning blood flow to the kidney may not return kidney function.

**Patient Preparation**

Prior to an angiography procedure for the treatment of renal artery stenosis, patients are required to complete the following;

- i. Ensure you have someone to take you to and from the clinic on the day of your procedure.
- ii. Make sure you have returned your signed information to our Patients' Service team at reception.
- iii. Have a shower on the morning of your procedure
- iv. Wear comfortable loose clothing

**Post Procedure Patient Care**

You will be provided with post procedure instructions on the day of your procedure. Your doctor will explain all care instructions to you along with nursing staff and answer any questions you may have.

**Making an appointment**

Phone our Claremont practice on (08) 9284 2900 to speak with one of our friendly receptionists who can assist you to book a consultation with Dr Sanjay Nadkarni.