



Coarctation of the aorta

This information sheet from Great Ormond Street Hospital explains the causes, symptoms and treatment of coarctation of the aorta and where to get help.

The aorta is the major blood vessel carrying oxygenated blood to the body. Coarctation of the aorta refers to a condition where there is a tightness (or narrowing) in the aorta.

As a result, the left-hand side of the heart has to work harder to pump blood away from the heart to the rest of the body. In severe cases, there can be reduced blood flow to the body.

What causes coarctation of the aorta?

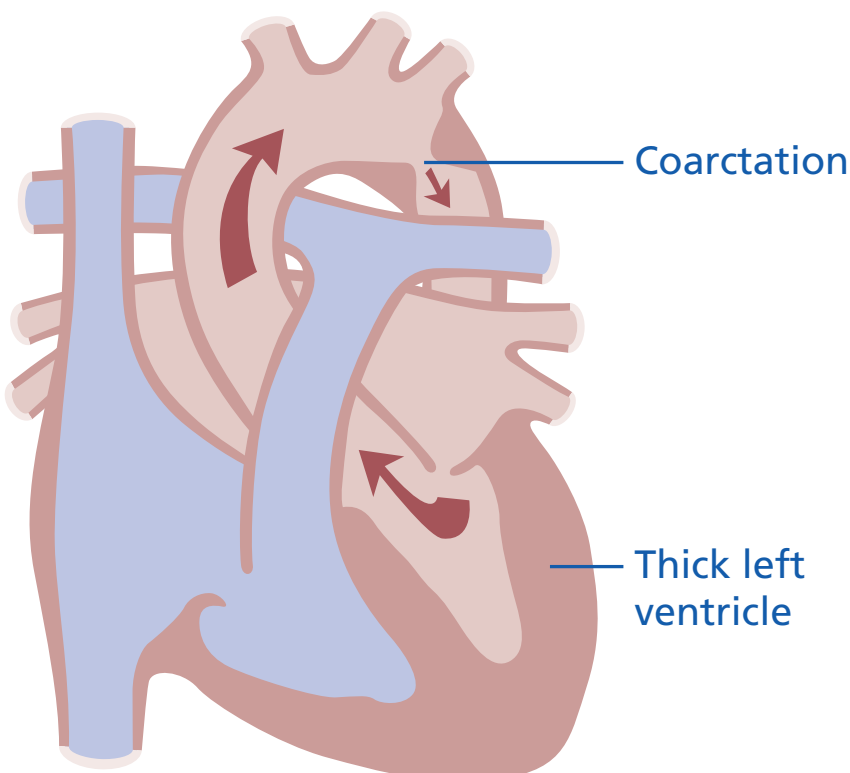
Coarctation of the aorta is a congenital heart defect (present when your child was born). The exact cause of congenital heart defects isn't often clear. Most heart problems in children are present from birth due to an anomaly in the way the heart forms during the very early stages of pregnancy.

The reasons for this may be due to a number of factors, such as genetics, environmental factors or infection. The likelihood that a heart problem will have been caused directly by anything you have done during pregnancy or early life is very rare.

What are the signs and symptoms of coarctation of the aorta?

The signs and symptoms of coarctation of the aorta will depend on the severity of the coarctation, and the age of the child.

Newborn babies may have a weak femoral pulse (located in the inner thigh) and seem very sick very suddenly. They may collapse, feel cool and look grey with a fast respiratory rate and be unable to feed and will require emergency treatment.





Coarctation of aorta may only reveal itself a few days (or weeks) after birth. This is because the ductus arteriosus (a blood vessel that allows blood to bypass a babies' lungs while they are in the womb) closes at this time. Without this alternative route, the blood is forced to travel through the aorta which, if obstructed, can lead to a sudden presentation of symptoms.

Coarctation of aorta can be diagnosed during pregnancy. In this instance, doctors will usually recommend the baby is delivered in a specialist centre and advise a course of medication to maintain the opening of the ductus arteriosus until a more detailed cardiac evaluation can be carried out after birth.

Mild degrees of coarctation might not be detected until later in childhood or adolescence. Signs can include weak femoral (leg) pulses, a heart murmur or high blood pressure (hypertension).

How is coarctation of the aorta diagnosed?

Your child will have an echocardiogram, a non-invasive, high frequency ultrasound scan of the heart. It allows doctors to see the aorta and assess the severity of the narrowing and the extent of poor growth (hypoplasia). They will also look at the overall performance of the heart and circulatory system.

They may also have an electrocardiogram (ECG). This measures electrical activity in the heart to see how well it is working. Doctors will look to see whether the left side of the heart has thickened and working harder than it should be.

Doctors may also monitor your child's blood pressure over a period of time, and carry out exercise tests to assess the way the blood pressure responds to physical exertion.

How is coarctation of the aorta treated?

The treatment your child needs will depend on the severity of the coarctation.

In mild cases, your child may only require regular supervision in an outpatient clinic.

In more severe cases a keyhole procedure known as cardiac catheterisation may be used to widen the aorta, either using a special catheter balloon which is inflated to stretch the aorta or a stent (collapsible metal tube) to add structure and keep the aorta open. Cardiac catheterisation is usually undertaken as a day-case procedure.

If there is additional damage to the tissue in the heart and cardiac catheterisation is not appropriate, your child may need surgery to improve blood flow across the aorta and alleviate the obstruction. The type of operation would depend on the nature of the coarctation and the age of your child.



What happens next?

The long-term outlook for coarctation of the aorta is usually good but will depend on the severity of the coarctation and whether your child has other heart problems.

Some children will only need one procedure (cardiac catheterisation or surgery), while others may need further procedures throughout childhood. Your child will require regular check-ups to monitor their progress and anticipate any follow-up treatment.

Further information and support

Our Cardiorespiratory Unit regularly refer to information published by the British Heart Foundation (BHF) and the Children's Heart Federation when explaining coarctation of the aorta to our patients and their families.

- Download the BHF coarctation of the aorta factsheet
- Read about coarctation of the aorta on the Children's Heart Federation website

Notes

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