



Great Ormond Street Hospital for Children NHS Foundation Trust: Information for Families

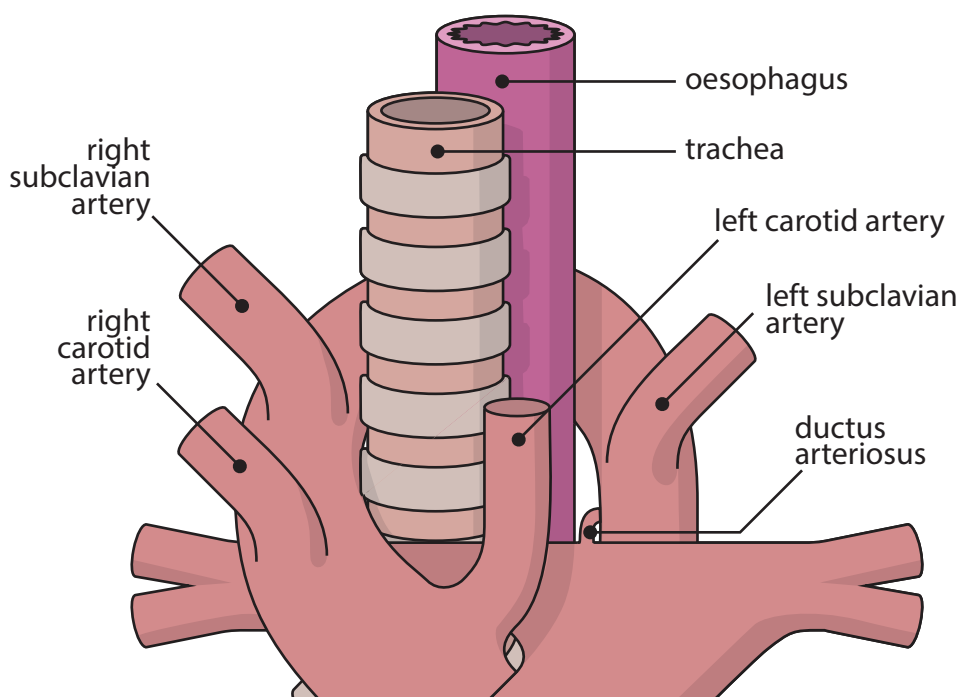
Prenatal ultrasound scans showing a vascular ring

This information sheet from Great Ormond Street Hospital (GOSH) explains about vascular rings detected during a prenatal ultrasound scan and what this might mean for your child. It will support the information discussed with you by your doctor and nurse at your appointment and it is important to remember that every case is slightly different. We are still learning about the possible impact on the circulation and the baby's health after birth as we have not been able to detect potential vascular rings in pregnancy until recently.

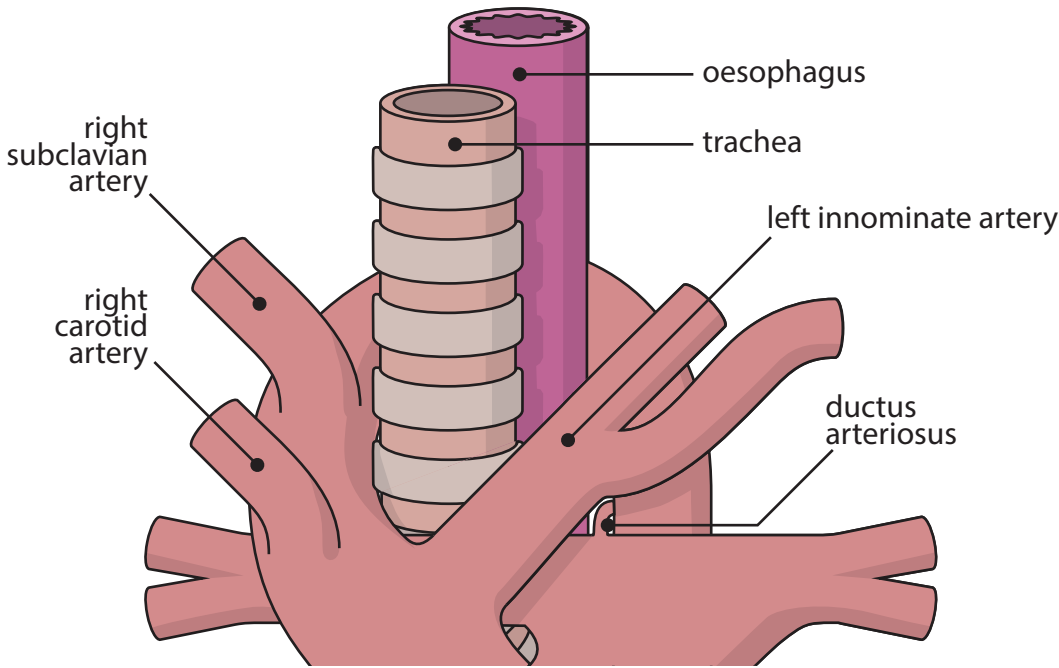
When we carried out a prenatal ultrasound scan in the Fetal Cardiology clinic, we were able to confirm that your baby has a structurally normal heart but there is an unusual arrangement of the great arteries after they have left the heart called a vascular ring. This arrangement has the potential to form a ring round the trachea (windpipe) and oesophagus (food pipe). The baby may never have any symptoms or it might gradually give rise to breathing problems and/or swallowing problems if the vascular ring squashes the oesophagus and/or trachea.

There are various types of vascular ring, the most common ones are:

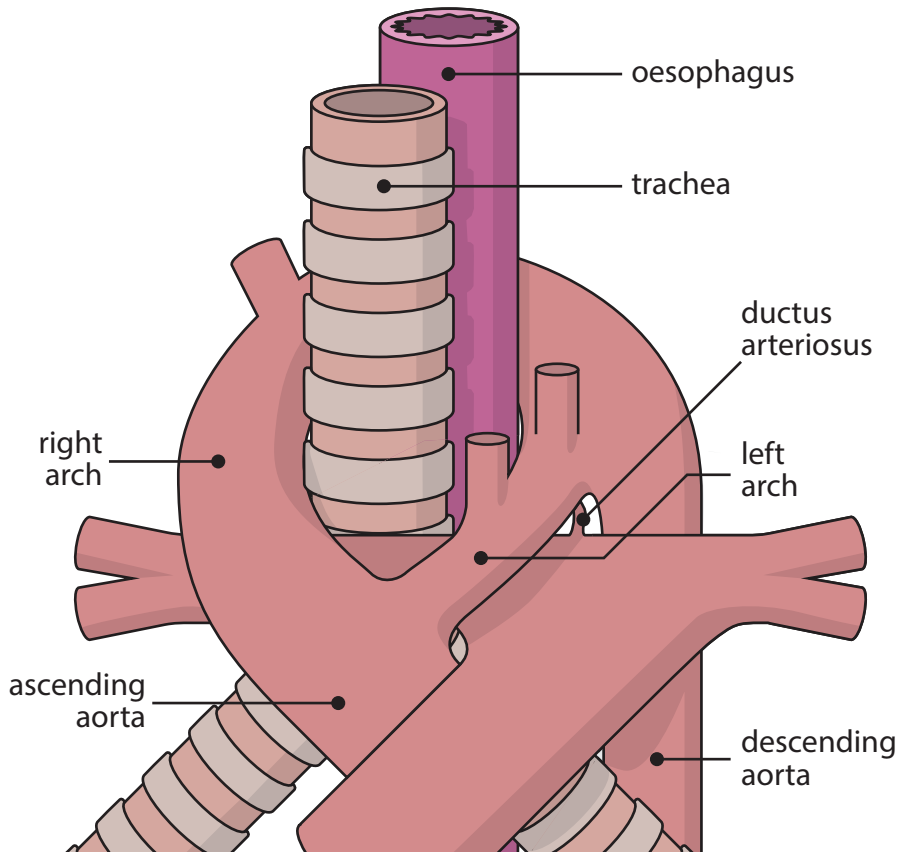
- **Right aortic arch and an abnormal origin of the left subclavian artery, which supplies the left arm.** The aorta turns to the right instead of left of the trachea while the pulmonary artery and arterial duct pass to the left and behind these structures, with the potential to form a ring which could cause compression.
- This could present with noisy breathing or difficulty swallowing suggesting that surgery to correct the problem is needed



- **Right aortic arch with mirror image branching of the aortic vessels. The ductus arteriosus completes the vascular ring.**



- **Double aortic arch** – with this arrangement the aorta divides into two branches with one branch passing to the right of the trachea and oesophagus and the other to the left, forming a vascular ring around these structures with the risk of causing compression over time.
- This could present with noisy breathing or difficulty swallowing suggesting that surgery to correct the problem is needed. Sometimes the surgery is performed before symptoms develop.



What causes vascular rings?

Doctors think that vascular rings occur early in pregnancy when the baby is developing in the womb. They do not think it was caused by anything you did or did not do during pregnancy.

The blood vessels in the chest form early in pregnancy as a series of arches. Some of these arches shrink and disappear as pregnancy progresses. Vascular rings develop when some of these arches continue to develop abnormally.

Some vascular rings occur because of an associated chromosome problem. An example of a chromosome problem is Down's Syndrome or Di George Syndrome.

If you would like to know if your baby has a chromosome problem, you could have a test called an amniocentesis at your local hospital.

An amniocentesis involves inserting a fine needle into your abdomen to draw off a small sample of the fluid from around the baby for testing. The preliminary results are usually available in a few days, but the more detailed results would take up to two weeks. There is a small chance (around one per cent) of miscarriage after an amniocentesis.

If you would prefer not to have an amniocentesis, the baby's chromosomes could be checked with a blood test after birth. We will probably suggest another antenatal check of the blood vessels later in the pregnancy.

What will happen after birth?

Your baby will probably not have any symptoms after birth, but we will arrange for your baby to be checked by a cardiologist after delivery. There will be no hurry for this if your baby is well at the post natal check.

If the ring is tight enough to cause problems you may notice:

- Noisy breathing if the trachea is compressed
- Difficulty swallowing, particularly when the baby is weaned from milk to solids, if the oesophagus is compressed.

These symptoms will not happen suddenly, but arise gradually over time. You can contact the fetal cardiac nurse specialist if you would like to hear again what symptoms to look out for either before or after birth.

Your baby will have an ultrasound scan in the first few weeks after birth, so that the vascular ring can be assessed. The doctor will monitor the vascular ring, particularly when your baby starts to have solid food. It may be necessary to have a more detailed scan called a CT scan to get more information about how tight the vascular ring is.

Some babies may have to have an operation to release and rearrange the vessels so that the trachea and oesophagus are no longer compressed.

The case would be discussed by a group of experts. The timing of the surgery would be variable and depend on symptoms. The surgery would be performed through the left chest. Success rates are very high and would solve the problem.

Further information and support

Please call the Fetal Cardiac Nurse Specialists on 020 7762 6711 or send them an email to gosh-tr.fetalcns@nhs.net

When your baby is born please call the fetal cardiac nurse specialists on the above number and she will ensure that your baby is seen by a doctor after birth.