**An Overview of Neonatal Surgical Conditions.**

**Gastrointestinal structural defects**

**Anomaly:** something that deviates from what is standard, normal or expected.

**Cleft lip and / or palate:** A type of clefting [congenital deformity](http://en.wikipedia.org/wiki/Congenital_deformity) caused by abnormal facial development during [the](http://en.wikipedia.org/wiki/Gestation) first trimester of fetal growth. A [cleft](http://en.wikipedia.org/wiki/Cleft) is a gap or opening. In this condition, it is due to the failure of fusion of the primary palate leading to either a cleft lip, palate or both.

**Congenital**: Relating to a condition that is present at birth. A congenital anomaly can also be termed ‘birth defect’: Such conditions develop before, and are present at, birth.

**Congenital diaphragmatic hernia**: Birth defect involving an opening in the diaphragm, the large muscle that separates the chest and abdomen. Abdominal organs can move through the opening into the chest cavity where they interfere with normal lung development.

**Duodenal atresia:** the congenital absence or complete closure of a the lumen of the duodenum at some point along it’s length. An atresia is a ’blind end’ and leads to acute intestinal distension and obstruction following birth. There can also be ileal atresia, jejenal atresia, rectal atresia.

**Exomphalus:** A congenital anomaly where there is a herniation (protrusion) of the abdominal contents into the umbilical cord which presents outside of the abdomen. A type of abdominal wall defect.

**Gastro-oesophageal Reflux:** A condition where the stomach contents regurgitate back up into the lower esophagus caused by a weak lower oesophageal sphincter (muscle).

**Gastroschisis:** Birth defect involving an opening in the abdominal wall, through which the abdominal organs bulge out without any sac or covering. A type of abdominal wall defect.

**Hernia**: Part of the body that is displaced and protrudes through the wall of the cavity containing it: for example in the intestine, a hernia involves protrusion of bowel through a weak point in the abdominal wall. Umbilical hernia and inguinal hernia are both examples of hernias seen in the neonatal period and infancy.

**Imperforate Anus:** A congenital defect of the anus where there is partial or complete obstruction of the anal opening.

**Intestinal obstruction:** Partial or complete blockage of the bowel that prevents the contents of the intestine from passing through. Presents with abdominal distension, vomiting, absent bowel sounds, failure to pass meconium or stool.

**Intussusception:** Inversion of one portion of the intestine within another. Leads to acute intestinal obstruction.

**Hirschprungs:** Also known as *aganglionic* megacolon, this is an abnormality in which certain nerve fibres are absent in segments of the bowel, resulting in intestinal obstruction.

**Malrotation:** A congenital anomaly of rotation of the midgut. As a result, the small bowel is found predominantly on the right side of the abdomen and other bowel parts are not found in their expected position. This defect is another cause of intestinal obstruction.

**Meconium Ileus:** Congenital intestinal obstruction by thick, viscous meconium that fails to be passed after birth.

**Necrotising enterocolitis (NEC):** This intestinal problem most commonly affects premature neonates. The bowel becomes compromised when its blood supply is decreased before or following birth and bacteria that are normally present in the bowel invade the damaged area, causing more damage. Neonates with NEC develop acute abdominal distension, bilious vomiting and may pass blood rectally.

**Oesophageal atresia (OA) with or without Tracheo-oesophageal fistula (TOF):** OA is where there is a blind end of the oesophagus and failure to join the stomach. TOF is a joining between the trachea and the oesophagus which can occur with OA.

**Pyloric Stenosis:** Narrowing of the pyloric sphincter (muscle) that blocks the passage of milk from the stomach into the duodenum.

**Short gut: Otherwise known as Short Bowel Syndrome.** A [malabsorption](http://en.wikipedia.org/wiki/Malabsorption) disorder caused by the [surgical](http://en.wikipedia.org/wiki/Surgery) removal of a large part of the [small intestine](http://en.wikipedia.org/wiki/Small_intestine), leaving a significantly small section.

**Volvulus:** an obstruction caused by twisting of the intestine leading to acute intestinal obstruction

**Congenital Cardiac defects: Some examples.**

**Coarctation of the aorta**: Part of the aorta is narrowed preventing adequate blood flow to the body.

**Heart valve abnormalities**: Some neonates are born with heart valves that are narrowed, closed or blocked and prevent blood from flowing smoothly.

**Patent ductus arteriosus (PDA):** The fetal duct connecting the pulmonary artery to the aorta remains open after birth (as in preterm neonates) or can be part of a more complex congenital cardiac defect.

**Septal defects**: A septal defect refers to a hole in the wall (septum) that divides the left and right sides of the heart. Septal defects are usually between the upper walls dividing the right and left chambers (atrial- i.e; atrial septal defect or ASD) or lower (ventricular- i.e; ventricular septal defect or VSD).

**Tetralogy of Fallot**: A combination of four heart defects namely, pulmonary stenosis, overriding aorta, ventricular septal defect (VSD) and right sided hypertrophy (thickened muscle) of the ventricle.

**Transposition of the great arteries:** The positions of the two major arteries leaving the heart are reversed so that each arises from the wrong pumping chamber.

**Other Systems: Some examples**

**Hydrocele:** A fluid-filled sac surrounding a testicle resulting in scrotal swelling.

**Hypospadius:** A congenital condition in males in which the opening of the urethra is on the underside of the penis.

**Posterior urethral valves:** An obstructive developmental anomaly in the urethra and genitourinary system of male newborns. A posterior urethral valve is an obstructing membrane in the male urethra.

**Myelomeningocele**: A type of neural tube defect which is an opening in the spinal cord resulting in varying degrees of paralysis, bladder and bowel problems. Affected neonates may require surgery during the newborn period to close the defect and prevent further nerve damage and infection; however, surgery cannot reverse nerve damage that already has occurred.

**Sources:**

Meeks et al (2010), Lomax (2011) & Sinha et al. (2012).

<http://www.surgical-tutor.org.uk/> Free online resource on surgical conditions.