What is Sacrococcygeal Teratoma?

Sacrococcygeal Teratoma (SCT) is a tumor that forms at the base of the baby’s tailbone. Even though teratomas can form in other parts of the body, SCTs are quite rare, affecting only 1 in every 35,000 babies.

SCTs develop from the same type of cells that form the reproductive tissues, like testes and ovaries. When the cells develop abnormally, a tumor can result. Most SCTs are benign, meaning they do not form a cancer. Complete removal cures the baby of the tumor. After surgery, the prognosis for babies with SCT is quite good—most babies will develop normally and be healthy.

Most cases of SCT are mild, which only require treatment after birth, but some cases are very severe, growing rapidly, and becoming life-threatening during the pregnancy. The goal of prenatal assessment at the SSM Health St. Louis Fetal Care Institute is to determine whether the fetus has an SCT and whether it is or may become life-threatening. In this way, we try to prevent fetal death, prolong the pregnancy, and give each baby the best quality of life.

How is SCT diagnosed during pregnancy?

SCT can be detected through a blood test or by routine ultrasound. During the second trimester, a screening blood test may detect abnormally high levels of maternal alpha-fetoprotein, which can alert your physician that a SCT may be present. During an ultrasound, a mass seen near the bottom of the back is another indicator for SCT.

After the initial ultrasound or blood test, we recommend a targeted prenatal ultrasound to determine the size, severity, and nature of your baby’s SCT. If a SCT is confirmed, we recommend a fetal MRI to better examine the extent of the tumor and to examine the spine. Rarely, a small SCT can look like another birth defect called spina bifida. The MRI can help us make this distinction. Finally, we recommend a fetal echocardiogram (echo). This specialized examination of the fetal heart will tell us how much strain is being put on the heart by the tumor.

If the tumor is small, we closely monitor your pregnancy, and your baby usually will not require any intervention until after birth. If the tumor is much larger and solid in nature, we will follow your baby very closely by ultrasound and echo. Your baby will require fetal intervention or surgery during the newborn period.

How is SCT managed and treated during pregnancy?

Depending on the size and severity of the tumor, different treatment options are available—in some cases before birth, and in some cases after birth.

The tumor can cause complications both before and after birth in many ways. It can steal blood flow away from the developing fetus. If the tumor is small, this is not usually a problem, but for larger tumors the additional blood flow needed to supply the tumor can cause the fetus to develop heart failure (hydrops). In this setting, the mother can also develop “maternal mirror syndrome,” where the mother starts to mirror symptoms of the fetus—most commonly developing preeclampsia, which can be life-threatening if untreated.

SCTs can lead to many complications with the fetus. One of the most common problems facing babies with large SCTs is prematurity. Fetuses with SCT often develop extra fluid in the uterus, or polyhydramnios. This problem, combined with signals from the fetus, often results in premature loss of fluid and labor. SCTs can also bleed due to trauma during the delivery process. This can also be life-threatening.
Prenatal surgery:
In cases of severe SCT, fetal surgery may be considered. The goal of fetal surgery is to prevent fetal death or premature delivery. Options for fetal intervention are open fetal surgery or laser ablation.

Open fetal surgery:
In the case of a severe SCT with hydrops, open fetal surgery may be performed to remove the tumor. The fetal surgeon makes an incision in the mother’s abdomen and uterus, similar to a Cesarean incision, and performs surgery to remove the tumor. The uterus is then repaired and the mother remains in the hospital for four to five days. Because of the scar caused by the surgery on the uterus, the baby and all future babies have to be delivered by Cesarean birth.

Laser ablation:
The other option is to reduce the blood flow to the tumor to slow down the growth of the SCT. During this operation, the fetal surgeon inserts a small needle through the uterus, into the fetus, and next to the blood vessels feeding the tumor. A laser fiber is inserted through the needle and laser energy is used to destroy the blood vessels. With less blood flow to the SCT, the fetal heart failure should improve and the tumor growth will slow.

Delivery:
For most babies with small SCT, we recommend a Cesarean birth to prevent tumor bleeding, or if delivery can proceed. If delivered, the baby is stabilized and plans for tumor removal will be made. After delivery, a pediatric surgeon removes the tumor and reconstructs the bottom, and in most cases, the baby will recover fully.

For babies with large SCTs, the risk of tumor bleeding at delivery can be quite dangerous, especially if the baby is premature. This is why we often try to prevent bleeding and control the delivery by using an Ex Utero Intrapartum Treatment (EXIT) procedure. The EXIT is a controlled method of delivery where the mother is under general anesthesia and a Cesarean incision is used to open the uterus and examine the baby. Since the placenta is still working and supporting the baby during an EXIT operation, the fetal surgeons have time to evaluate the tumor and decide if it should be removed immediately to prevent bleeding.

What happens after a baby is delivered with SCT?
After delivery, either by EXIT or Cesarean, the general goal is to stabilize the baby, especially from a breathing standpoint. If the tumor has not been removed and the lungs are working well, then surgery can be scheduled.

The care after surgery is essentially the same as any other baby in the NICU. The baby needs to be breathing on its own, eating well, and gaining weight. Most babies with SCT develop normally from a physical and developmental perspective. Sometimes there are long term constipation issues because the muscles around the anus were distorted by the tumor, but this can be managed easily with medicines. We follow babies with SCT over several years because there is a rare chance of recurrence. Blood tests, physical examination, and X-ray imaging are used to screen for recurrent tumors.

With proper prenatal care and surveillance, nearly all babies with SCT should do well with surgery, go home from the NICU, and ultimately achieve an excellent quality of life.