

## PRENATAL DIAGNOSIS OF SACROCCYGEAL TERATOMA

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### ABSTRACT

Sacroccygeal teratoma is a rare fetal neoplasm with an incidence of 1 in 40,000 births. Fetuses with this malformation are at risk of significant perinatal morbidity and mortality. Prenatal ultrasonographic diagnosis of sacroccygeal teratomas is essential to detect various prenatal and perinatal complications as well as fetal outcome. Adverse clinical sequelae of a sacroccygeal teratoma can be prevented by accurate prenatal assessment and appropriate obstetrical and perinatal management. Development of fetal hydrops and/or placentomegaly predicts fetal demise. Herein, we present a case of fetal sacroccygeal teratoma diagnosed prenatally.

**Key Words:** Sacroccygeal teratoma, Prenatal diagnosis

### INTRODUCTION

Fetal tumors are difficult to evaluate prenatally. Fetal teratomas are among the most common neoplasms found in the newborn and occur in approximately 1 in 40.000 live births in a variety of locations (1). Sacroccygeal teratomas (SCT) comprise over 50% of teratomas found at

birth (2). Fetuses with this malformation are at risk of significant perinatal morbidity and mortality. Adverse clinical sequelae of a sacroccygeal teratoma can be prevented by accurate prenatal assessment and appropriate obstetrical and perinatal management. Diagnosis at an early gestational age, development of fetal hydrops and premature delivery are associated with a poor prognosis (1). The prenatal outcome depends on the presence of associated polyhydramnios, placentomegaly, and/or fetal hydrops, as well as the vascularity of the tumor itself (3). Besides guiding prognosis, serial ultrasound scans may allow the mode of delivery to be planned more effectively. The postnatal outcome is related to surgical treatment and the histological features of the tumor (3).

In this report, the prenatal diagnosis of a fetus with SCT is presented.

### CASE REPORT

A healthy 23-year-old woman, G2P1, was referred to our perinatology clinic at 34 weeks' gestation for prenatal ultrasound evaluation. Her past medical history was uneventful, and family history was unremarkable. Ultrasound examination revealed a 6x5 cm solid and cystic

mass arising from the sacral region (Fig. 1). The tumor showed numerous cysts strongly suggesting the diagnosis of teratoma. The growth of the fetus was normal for gestational age and no other abnormalities were detected. Pregnancy follow-up was uneventful. A female infant was delivered at 38 weeks' gestation by cesarean section. The newborn exhibited 6x6 cm sacral mass completely outside the pelvis, no other abnormality was detected (Fig. 2). The infant was operated on the 5th day of delivery and the sacral mass excised along with the coccyx. Pathologic examination of the tumor revealed benign immature teratoma with predominant glial elements. Postoperative period was uneventful.



**Fig.1 :** Ultrasonographic appearance of teratoma



**Fig.2 :** Postpartum appearance of teratoma

## DISCUSSION

The incidence of SCT is 1/35.000-40.000 with a predominance of female cases (2.3 / 1) (1). SCTs arise from the anterior surface of the sacrum or from the coccyx. The localization of teratomas is

related to their cells of origin. SCTs originate from pluripotent cells of Hensen's nodule, the anchorage point of sexual cells. They are thus related to germinal line cells (1). Three histological types are generally distinguished: mature forms, clearly benign (48%), benign with immature cells (23%), frankly malignant (23%) (1). Benign SCTs with immature cells can undergo malignant transformation. According to some authors, solid tumors are more likely to be malignant and/or highly vascularized (4). Vascularization increases the risk of hemorrhage and can also cause hemodynamic problems related to arteriovenous shunting (4).

It was not until the advent of antenatal ultrasonography that SCT's were diagnosed in utero. With the widespread use of prenatal ultrasound examination, the percentage of SCTs diagnosed before birth has increased significantly. Apart from the fact that in rare cases the tumor is too small to be detected, prenatal ultrasonographic diagnosis of SCTs is essential to detect various prenatal and perinatal complications as well as fetal outcome (5).

The majority of SCT's present between the 22nd and the 34th weeks of gestation. Most are benign, resectable after birth without significant morbidity and rarely associated with other congenital anomalies. The incidence of various congenital malformations associated with SCT ranges from 5% to 26% (1). Of these, anorectal and genital malformations are of prime concern. Other associated anomalies include sacral agenesis, dislocation of the hips caused by a large tumor and meningocele. Rarely, cardiac anomalies or gastrointestinal anomalies have been described. In the presented case no other anomalies were detected.

The appearance of fetal hydrops and/or placentomegaly on prenatal ultrasound is an important sign that carries a negative prognosis (1). These complications are thought to be related to high output heart failure caused by intratumoral arteriovenous shunting. Adverse clinical sequelae of a sacrococcygeal teratoma can be prevented by accurate prenatal assessment and appropriate obstetrical and perinatal management. The presented case had no finding related to fetal hydrops or placentomegaly on prenatal ultrasonography.

After delivery the placenta was normal in appearance.

Most authors agree that cesarean section should be performed when the mass exceeds a diameter of 5 cm (1). In the absence of other lethal malformations, cesarean section is the method of choice for delivery of any fetus with a SCT since dystocia or trauma during vaginal delivery increases the risk of tumor rupture, ulceration and/or hemorrhage. Since in the presented case the fetus had a 6x5 cm sacral mass, cesarean section was preferred as a mode of delivery.

In conclusion, we report a case of SCT detected prenatally on ultrasound examination. Prenatal ultrasonographic diagnosis of sacrococcygeal teratomas is essential for detecting various prenatal and perinatal complications as well as fetal outcome. Since fetuses with this malformation are at risk of significant perinatal morbidity and mortality, close antenatal follow up

is needed to optimise patient counselling and treatment.

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