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Case Report

# Congenital cervical teratoma

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ABSTRACT

**Introduction**: Teratoma, originating from the Greek word "teras" meaning "monster," reflects its diverse tissue composition, often containing ectodermal, mesodermal, and endodermal tissues. These embryonic germ layers contribute to the rarity of teratomas in the neck, though they are more commonly found in the sacrococcygeal area. Notably, teratomas occurring in the cervical region can lead to life-threatening symptoms due to their mass effect.

**Case Report**: A 26-year-old multiparous woman highlighted the challenges of managing cervical teratomas. During her 38th week of gestation, an ultrasound revealed a tumour on the foetus's neck, measuring 5.2 x 4.7 cm with doppler, neovascularization, and solid parts suspected to be a teratoma. The patient, despite no prior illness, had not taken prescribed vitamins during pregnancy. She underwent a caesarean section, delivering a baby girl weighing 3100 grams with an Apgar score of 8, who was found to have a solid mass in the posterior neck. The baby underwent surgery three days later, where 200-gram mass was removed and identified as a mature teratoma through anatomical pathology examination. The successful surgery allowed the mother and baby to return home in good condition.

**Discussion**: Teratomas emphasized their diverse nature, with cervical teratomas mostly affecting females and originating from early aberrant germ cells. These tumours, often neuroepithelial, rarely become malignant. Diagnosis involves prenatal ultrasonography, aiding in intervention planning, while postnatal imaging guides surgical approaches.

**Conclusion**: Congenital teratomas pose challenges in prenatal diagnosis and management, requiring a multidisciplinary approach. Early detection through antenatal imaging, surgical excision, and meticulous follow-up are crucial for optimal outcomes, emphasizing the importance of comprehensive care and collaboration across medical specialties.



## 1. Background

The term "teratoma" originates from the Greek word "teras," meaning "monster," reflecting the diverse tissues it contains. Typically composed of ectodermal, mesodermal, and endodermal tissues representing embryonic germ layers teratomas are rare in the neck, commonly found in the sacrococcygeal area, with a notable occurrence in the cervical region.[1,2] Their mass effect often leads to symptoms that are potentially life-threatening in cervical cases. The total incidence of cervical teratomas has been found to range from 2.3% to 9.3%. Understanding their embryonic origin provides insight into their varied composition and clinical impact, emphasising the need for diligent management and treatment strategies.[3]

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## 2. Case Presentation

A 26-year-old multiparous woman came to the Dumai District Hospital at 38 weeks of gestation and was told by a referral from a general practitioner that the results of the ultrasound indicated that there was a tumour on the foetus's neck. Then an ultrasound evaluation was carried out, and it was found that the foetus was in breech presentation with an estimated foetal weight of 2900 grammes, and a mass measuring 5.2 x 4.7 cm was seen with doppler, neovascularization, and solid parts of the mass with suspected teratoma. During this pregnancy, the patient admitted that she had never been sick but had never taken the vitamins given by the midwife and doctor. Then the patient underwent a caesarean section. A baby girl was born, weighing 3100 grammes, with an Apgar score of 8. A solid mass was found in the posterior neck. Then the baby was consulted by a paediatric surgeon, and surgery to remove the mass was planned. Three days later, the baby underwent surgery; a mass of approximately 200 grammes was found, and an anatomical pathology examination was carried out. The mother and baby went home in good condition. Histopathological findings showed that the mass was a mature teratoma. The mother and baby visited the hospital, and the wound was recovering; there was no other complaint.

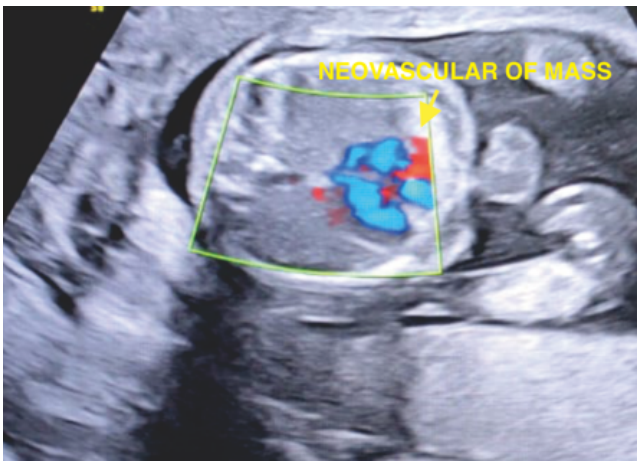


**Figure 1:** Ultrasound finding mass with neovascular.

## 3. Discussion

Teratomas are diverse tumors occurring anywhere in the body, commonly in the sacral region. Cervical teratomas, comprising 1.6–9.3% of pediatric cases, mostly affect females. They originate from aberrant germ cells early in gestation, differentiating into mature or immature tissue, predominantly neuroepithelium.[4] Malignancy is rare, with less than 5% being malignant, usually in mixed germ cell tumors. Aetiology involves chromosomal abnormalities such as trisomy 13 or gene mutations.[5] Clinically,

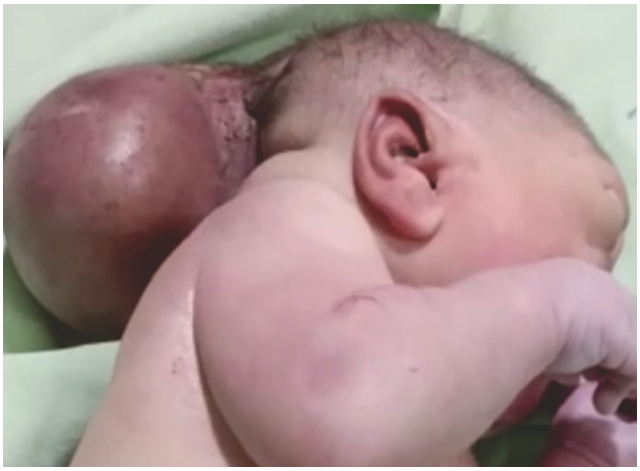

**Figure 2:** Mass of baby neck.

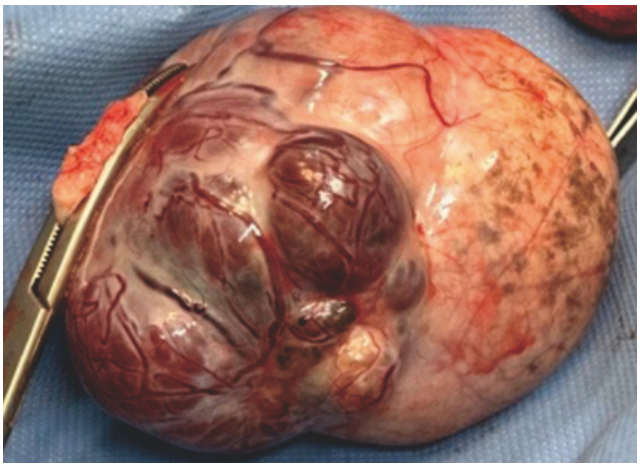

**Figure 3:** Mass after surgery.

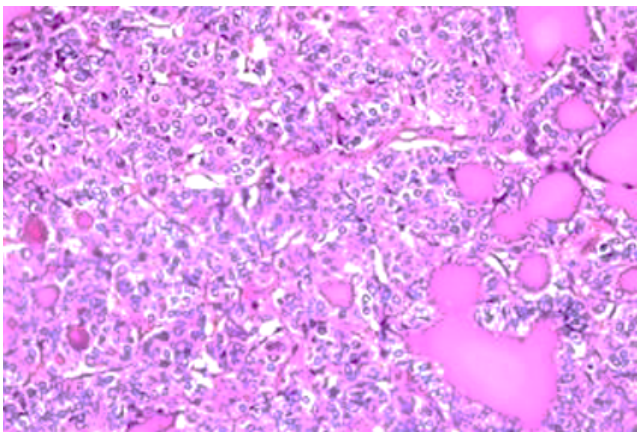

**Figure 4:** Hystopatological finding.

cervical teratomas present as large masses, often causing airway obstruction and peripartum mortality. Antenatal diagnosis through ultrasonography aids in the planning of interventions. Postnatal diagnosis via imaging techniques like ultrasonography, CT, and MRI guides surgical planning. Differential diagnosis includes metastases and other cystic masses.[6] A complete excision is crucial, even though benign, due to its rapid growth potential. Prenatally diagnosed cases may require specialized procedures like EXIT or OOPS to secure the airway. Good presurgical planning and a complete excision lead to low recurrence rates. Follow-up involves clinical examination, MRI, and alpha-fetoprotein quantification. Differential diagnoses for teratomas include lymphangioma, venous malformations with phleboliths, dermoid, neurenteric cysts, Thornwald's cyst, and basal meningocele. These conditions may present with similar clinical features and imaging findings, necessitating careful consideration to differentiate them from teratomas.[7,8]

### *3.1. Clinical significance*

Teratomas are a diverse group of tumors derived from pluripotent cells and can occur in various locations throughout the body. They consist of tissues derived from more than one germ layer, including ectoderm, endoderm, and mesoderm. The clinical significance of teratomas lies in their potential for rapid growth, compression of adjacent structures, and the risk of malignant transformation. Furthermore, teratomas may be associated with congenital anomalies and have implications for maternal-fetal health during gestation.[7,8]

### *3.2. Types of teratoma*

Teratomas are classified based on their anatomical location and histological characteristics. Common types include:

1. Ovarian Teratoma, typically arise from the ovary and can present as mature (benign) or immature (malignant) forms. Ovarian teratomas are often discovered incidentally or may cause symptoms related to mass effect or hormonal disturbances.[7,8]
2. Testicular Teratoma, are predominantly found in infants and young children. They may present as painless testicular masses and are typically benign, but malignant transformation can occur, necessitating surgical intervention.[7,8]
3. Sacrococcygeal Teratoma, arising from the coccyx or sacrum, sacrococcygeal teratomas are most commonly detected in neonates. They can range from benign, mature lesions to malignant, immature tumors, and often require surgical excision shortly after birth.[7,8]
4. Mediastinal Teratoma, occur in the mediastinum and can vary widely in size and histological composition. Mediastinal teratomas may compress adjacent structures, leading to respiratory compromise or cardiac dysfunction.[7,8]
5. Intracranial Teratoma, are rare tumors that originate within the brain or spinal cord. They are typically diagnosed in infants and may present with signs and symptoms related to increased intracranial pressure or neurological deficits.[7,8]
6. Fetal Cervical Teratoma, as illustrated in the case report, fetal cervical teratomas are exceedingly rare tumors arising from the neck region of the fetus. These tumors can pose significant challenges in prenatal diagnosis and management, requiring multidisciplinary approaches for optimal outcomes.[7,8]

Understanding the clinical significance and various types of teratomas is crucial for accurate diagnosis, appropriate management, and counseling of patients and their families. Multidisciplinary collaboration among obstetricians, pediatricians, surgeons, and pathologists is essential in providing comprehensive care for individuals affected by these complex tumors. Immature teratomas are effectively treated with surgical resection and observation. Overall, comprehensive management and follow-up ensure optimal outcomes for cervical teratomas. These protocols are essential for successful treatment and long-term health.[9,10]

## 4. Conclusions

Congenital teratomas, though rare, present complex challenges in prenatal diagnosis and management. They often require multidisciplinary approaches involving obstetricians, surgeons, and neonatologists. Early detection through antenatal imaging facilitates timely intervention, ensuring optimal outcomes for both mother and baby. Surgical excision remains the cornerstone of treatment, with meticulous follow-up crucial for detecting and managing recurrences. The overall prognosis of teratomas is determined by factors such as tumor growth, size, histological type, evidence of capsular/vascular invasion, and rupture. Various types of teratomas exist, each with its unique clinical characteristics and management considerations.

## 5. Source of Funding

None.

## 6. Conflict of Interest

None.

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