Unveiling the Enigma: Exploring the Rarities of Cyclopic Fetus in Edwards T18 and Patau Syndromes

In the vast panorama of human genetic conditions, trisomies, characterized by the presence of an extra copy of a particular chromosome, stand as distinct anomalies. Among them, Edwards T18 and Patau syndromes, resulting from the presence of an extra copy of chromosome 18 or 13, respectively, are associated with a myriad of developmental abnormalities.

One of the most striking and rare manifestations of these syndromes is the formation of a cyclopic fetus, a condition in which the face fails to develop properly, resulting in a single, centrally located eye and other severe malformations.

Muscular and Skeletal Anomalies in Human Trisomy in an Evo-Devo Context: Description of a T18 Cyclopic Fetus and Comparison Between Edwards (T18),Patau ... 3-D Imaging and Anatomical Illustrations by Rui Diogo

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Cyclopic Fetus in Edwards T18 Syndrome

Edwards T18 syndrome, also known as trisomy 18, is a severe chromosomal disFree Download that affects approximately 1 in 5,000 live births. It is characterized by a wide range of malformations, including growth retardation, heart defects, and intellectual disability.

Cyclopia is a rare but devastating manifestation of Edwards T18 syndrome, occurring in less than 1% of cases. The incidence is slightly higher in females than males. The underlying cause of cyclopia in T18 is believed to be the abnormal development of the embryonic neural tube, which is responsible for forming the brain and spinal cord.

Fetuses with cyclopia typically present with a single, midline eye located on the forehead, which is often underdeveloped and may be blind. In addition, they often exhibit other severe malformations, such as:

- Holoprosencephaly: Failure of the brain to divide into two hemispheres
- Facial clefts: Defects in the lips and palate
- Heart defects: Congenital heart anomalies
- Kidney defects: Structural abnormalities of the kidneys
- Skeletal malformations: Limb and spine deformities

Cyclopic Fetus in Patau Syndrome

Patau syndrome, also known as trisomy 13, is another severe chromosomal disFree Download that affects approximately 1 in 10,000 live births. It is characterized by multiple malformations, including microcephaly (small head size),cleft lip and palate, and severe intellectual disability.

Cyclopia is an extremely rare manifestation of Patau syndrome, occurring in less than 0.5% of cases. As in Edwards T18 syndrome, it is thought to be caused by abnormal development of the embryonic neural tube.

Fetuses with cyclopia in Patau syndrome present with similar features to those observed in Edwards T18 syndrome, such as a single, midline eye, facial clefts, and heart defects.

Comparison of Cyclopic Fetus Manifestations

Although cyclopia is a rare manifestation in both Edwards T18 and Patau syndromes, there are some notable differences in the clinical presentation and associated malformations:

Characteristic	Edwards T18 Syndrome	Patau Syndrome
Incidence	Less than 1% of cases	Less than 0.5% of cases
Associated malformations	Holoprosencephaly, heart defects, kidney defects	Microcephaly, cleft lip and palate, heart defects
Survival	Most fetuses with cyclopia in Edwards T18 syndrome do not survive to birth	Some fetuses with cyclopia in Patau syndrome may survive for a short period after birth

Prognosis and Management

The prognosis for fetuses with cyclopia in Edwards T18 or Patau syndromes is extremely poor. Most affected fetuses die before birth or shortly after due to severe malformations and developmental problems. In

rare cases, infants with cyclopia may survive for a short period after birth but face significant physical and cognitive challenges.

Management of fetuses with cyclopia typically involves prenatal diagnosis through ultrasound or amniocentesis and genetic counseling. If cyclopia is detected during pregnancy, parents may opt to terminate the pregnancy or prepare for the challenges of caring for a child with severe disabilities.

Cyclopia is a rare and devastating manifestation of Edwards T18 and Patau syndromes, characterized by the formation of a single, midline eye and severe malformations. Understanding the unique characteristics and clinical presentation of cyclopia in these syndromes is crucial for accurate diagnosis and providing appropriate counseling and support to affected families.

While the prognosis for fetuses with cyclopia is extremely poor, ongoing research aims to uncover the underlying mechanisms responsible for this condition and explore potential therapeutic approaches to improve outcomes.

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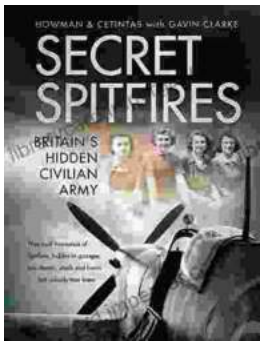

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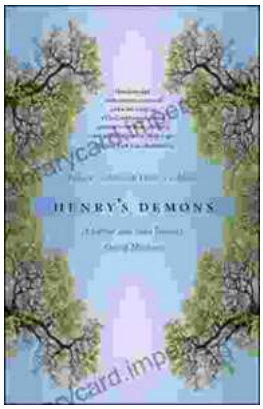

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