



2025

KARNATAKA RADIOLOGY EDUCATION PROGRAM

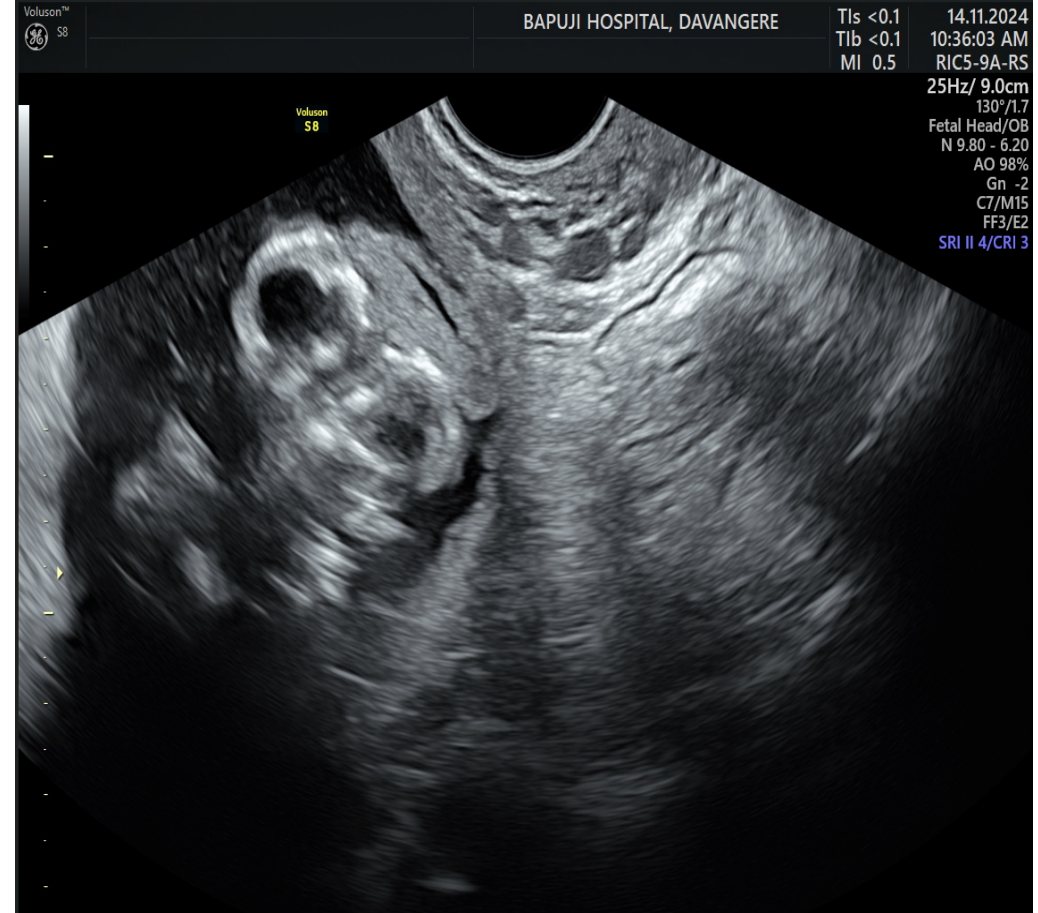
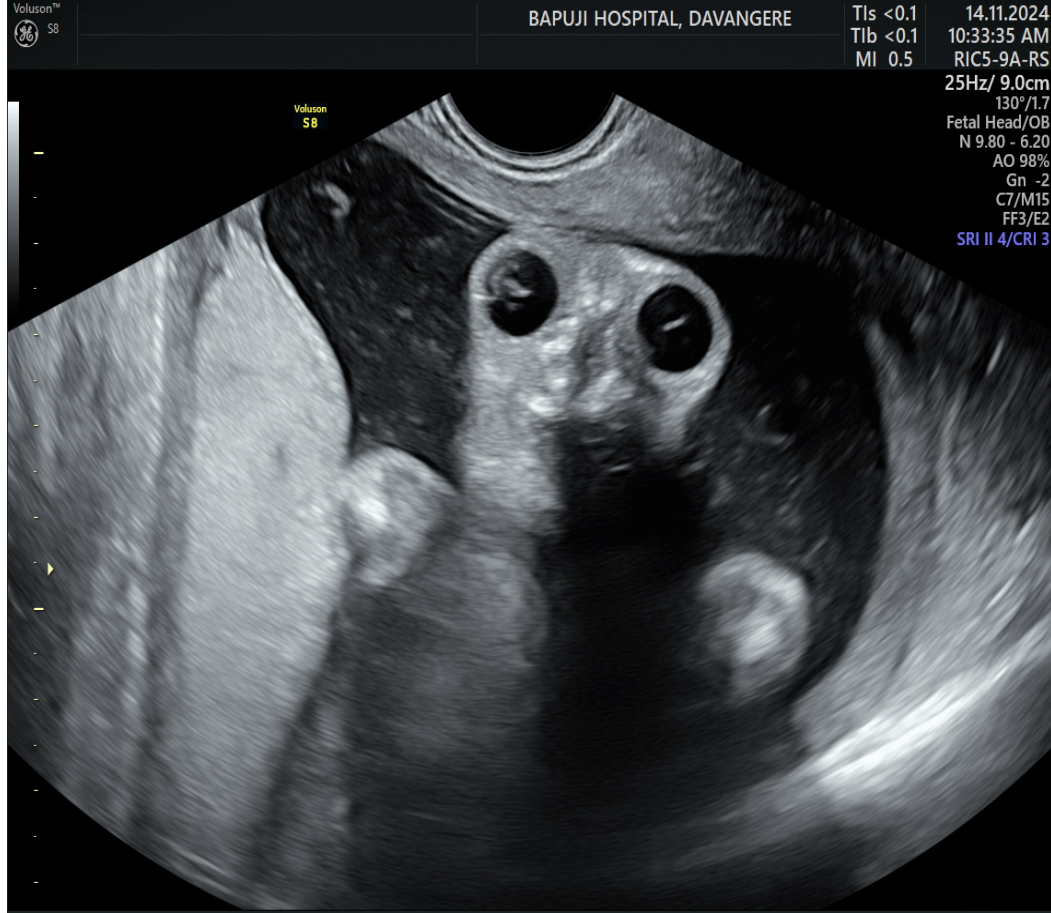
**MENTOR: → Dr. Jeevika M U, Professor and HOD, Department of
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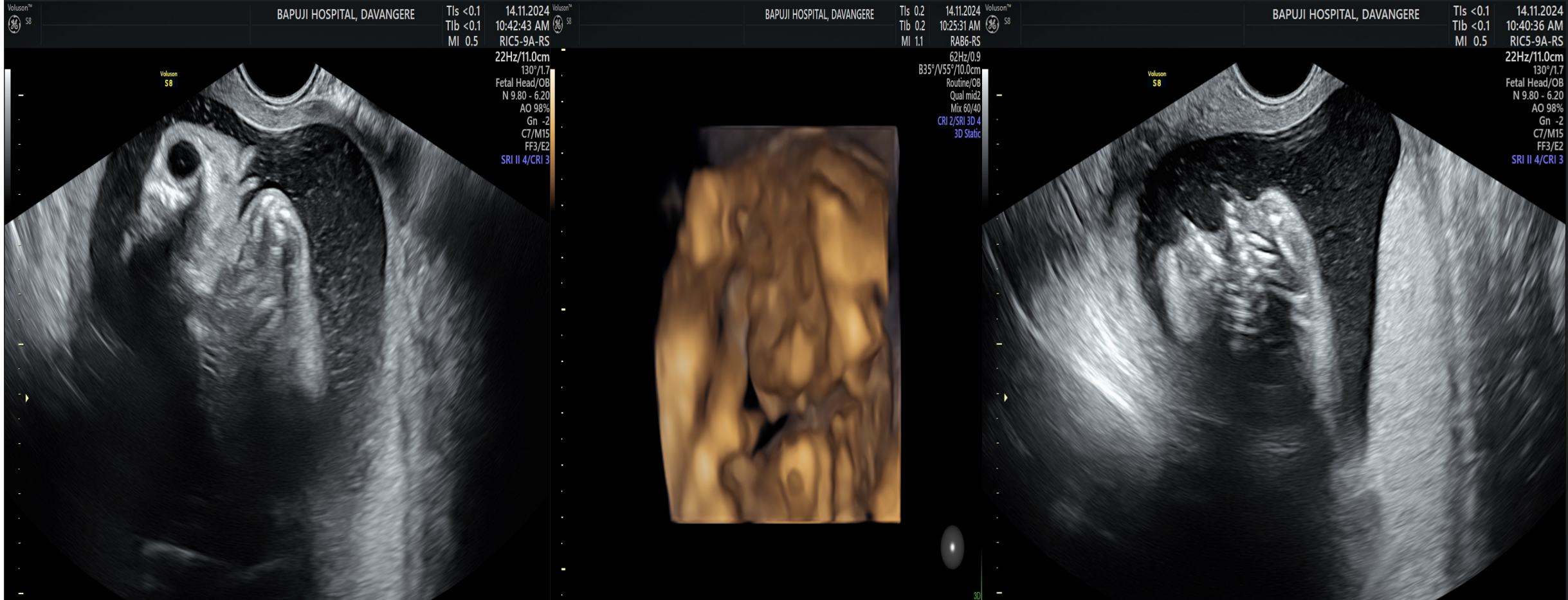
PRESENTER: Dr. Devraj , PG resident

CASE 1

- A 25 year old pregnant woman G2P0L0A1 came for an anomaly scan at 21 weeks 2 days of gestation.
- Non consanguineous marriage and spontaneous conception.
- Dating scan was done at 8 weeks- normal, gestational age assigned as per LMP.
- First pregnancy: Conceived after 1 year of marriage (previous pregnancy: spontaneous abortion at 12 weeks, no obvious cause detected). No scans were done in 1st trimester.
- No history of HTN/DM/thyroid disorders.



There is near total absence of neural contents in the cranium with absence of cranial bones above the bilateral orbits. Bilateral orbits appear prominent giving 'frog-eye' appearance. Cranial bones are not visualized in the supra-orbital region precluding BPD and HC assessment. Cerebellum development could not be assessed.



There is suspicious widening of the upper cervical spine with possible defect.

IMPRESSION

- Single live intrauterine gestation with absence of cranial neural tissue and cranial bones.
- There is widening of upper cervical spine with possible defect.
→ **S/o Acrania with anencephaly and possible upper cervical rachischisis.**

FOLLOW UP



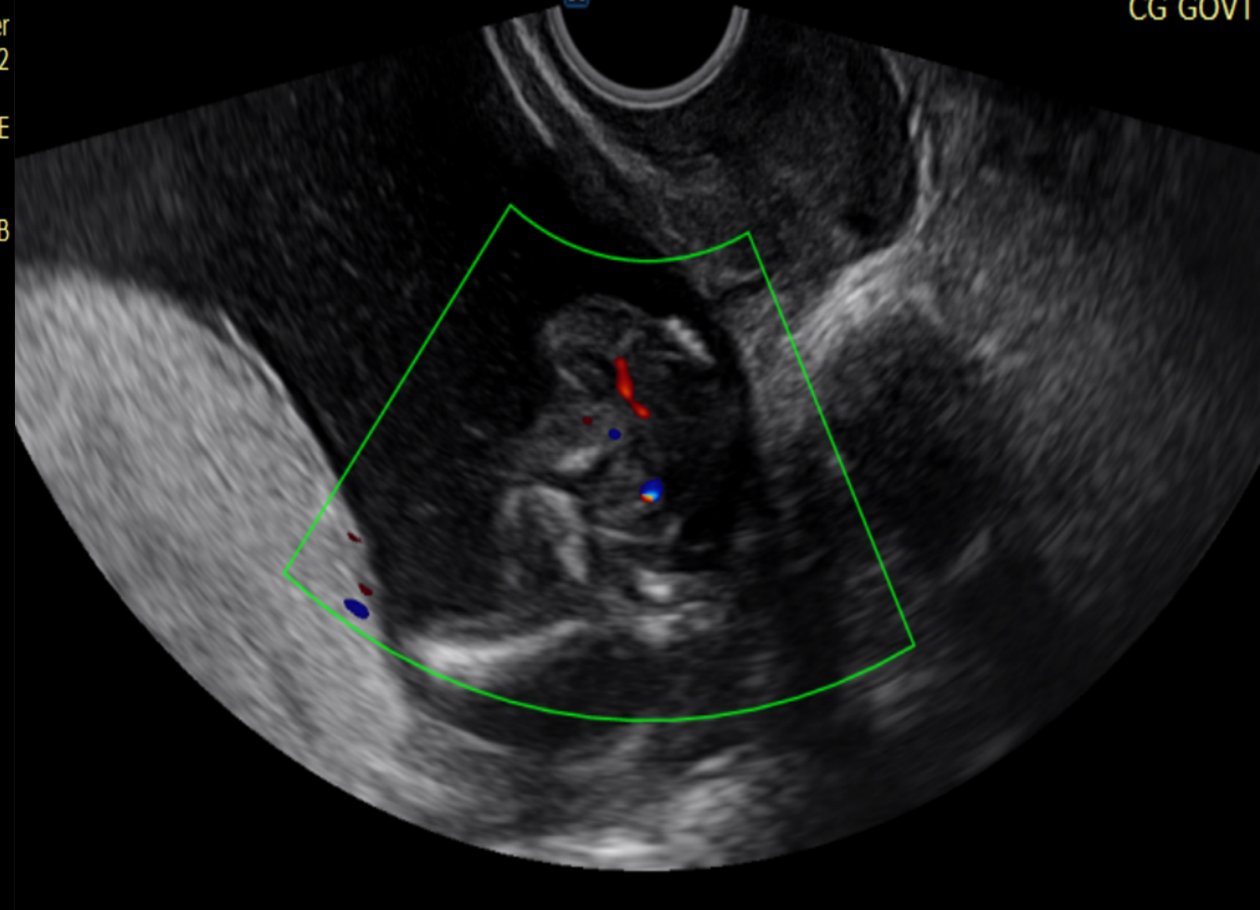
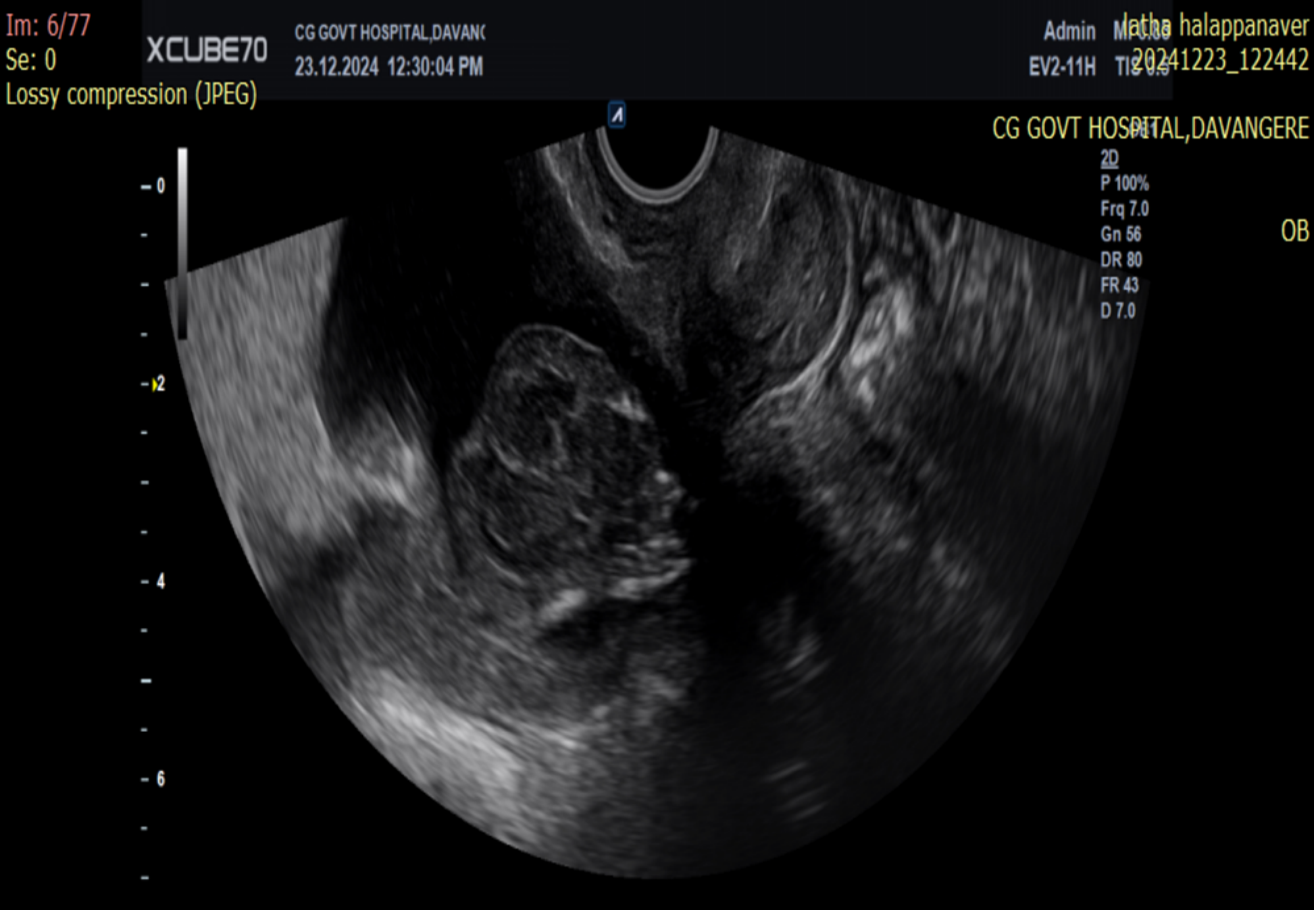
CASE 2

- A 22 year old pregnant woman G1P0L0A0 came for dating scan at 15 weeks 0 days of gestation.
- Non consanguineous marriage and spontaneous conception.
- No history of HTN/DM/thyroid disorders.



TVS scan which shows:

**There is absence of cranial bones with floating brain tissue.
Bilateral orbits are prominent.**



This the picture of a disorganized, irregular floating brain tissue in the amniotic fluid which gives the similar appearance of mickey mouse head.

IMPRESSION

- Single live intrauterine gestation with absence of cranial vault/bones with floating brain tissue.
- → **S/o Acrania with exencephaly.**

FOLLOW UP



DISCUSSION

ANENCEPHALY

DEFINITION- It is most severe form of cranial neural tube defect and it is characterized by an absence of cortical tissue as well as an absence of the cranial vault.

CHARACTERISTICS- Absence of the front part of the brain (forebrain). Absence of the cerebral hemispheres and the cerebellum and exposure of the brain tissue with the absence of the skull.

CAUSE- Neural tube which fails to close at the cranial (head) end during early embryonic development.
Hypervitaminosis A and Folic acid deficiency, uncontrolled diabetes.

BRAIN DEVELOPMENT- Severe underdevelopment or absence of the brain (especially the forebrain and cerebellum)

EXENCEPHALY

DEFINITION- It is lethal congenital fetal brain developmental anomaly (neural tube defect). It is characterized by large amount of protruding brain tissue outside the skull.

CHARACTERISTICS- Malformation of the cranium, a large disorganized mass of brain tissue. Absence of flat bones of calvaria and the uncovered brain mass.

CAUSE- Neural tube partially closes, but the skull does not form properly, leaving brain tissue exposed.
Folic acid deficiency & uncontrolled diabetes.

BRAIN DEVELOPMENT- The brain is present but exposed and often malformed.

<u>VIABILITY-</u> It is not compatible with life; infants are stillborn or die shortly after birth.	<u>VIABILITY-</u> Rarely compatible with life; leads to death shortly after birth or severe neurological damage.
<u>APPEARANCE-</u> Flat or absent cranial vault with exposed brain remnants.	<u>APPEARANCE-</u> Brain is visible outside the cranial cavity, often protruding.
<u>ASSOCIATED DEFECTS-</u> Often occurs with other anomalies like spina bifida and cleft palate (most common), spinal dysraphism, diaphragmatic hernia, clubfeet.	<u>ASSOCIATED DEFECTS-</u> Can be associated with other neural tube defects or craniofacial anomalies.
<u>DIAGNOSIS-</u> Detected via prenatal ultrasound, maternal serum alpha-fetoprotein (AFP), or amniocentesis.	<u>DIAGNOSIS-</u> Detected via prenatal imaging, particularly ultrasound.
<u>PREVENTION-</u> Adequate maternal folic acid intake before and during pregnancy reduces risk.	<u>PREVENTION-</u> Adequate folic acid intake can reduce the risk of neural tube defects, including exencephaly.