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Spectrum of Congenital Anomalies Discovered using Prenatal USG and its Impact on Obstetric Outcome among Native Kashmiri Women.

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ABSTRACT:

With the introduction of High Resolution USG machines and its widespread use in the last two decades in the valley of Kashmir, the early and prenatal diagnosis of Congenital anomalies has significantly changed the obstetric outcome of various pregnancies ranging from change of approach from Normal Vaginal Delivery to LSCS, and in some cases has led to frank indication of Termination of Pregnancy. Whether the anomalies are lethal or disfiguring or treatable in post natal life can usually be easily detected by USG. This study explores the profile of various anomalies as seen in Maternity Hospital of SKIMS over two years(2020-2021) and its impact on the pregnancies and their outcomes thereof.

Keywords: Congenital Anomalies, USG, MTP

INTRODUCTION:

Congenital Anomalies continue to be a significant reason of morbidity and mortality in India. Screening using High resolution USG has reported sensitivity of 85-90% in detecting anomalies before birth.[6] Anomalies of CNS including neural tube defects ,Cardiac Anomalies, limb anomalies and anomalies of GIT are usually easy to pick on USG. Conversely anomalies of face including cleft lip and palate and some anomalies of distal extremities including fingers and toes may be difficult to detect on conventional USG . As to the time in pregnancy at which ultrasound screening should be performed, it should be first noted that most structural anomalies are increasingly detected with advancing gestation.[11] In early pregnancy, it is possible to recognise with confidence certain types of fetal malformations, like anencephaly, which can be reliably diagnosed at 10-14 weeks of pregnancy.[12] In some cases omphalocele and limb anomalies are also definable using ultrasound in the first trimester, while other structural anomalies, like urinary tract abnormalities, are detectable later in pregnancy.[13]

METHODS:

With the consent of woman, all pregnant patients coming to OPD of maternity Hospital SKIMS for routine Congenital Anomaly Scan at the gestational age of typically 18-22 weeks were screened using USG and all findings were documented. The data was analysed and categorised depending on the system involved and the obstetric outcome. Incidence data was calculated. Data was analysed using SPSS software and results were obtained

RESULTS:

A total of 820 patients were enrolled for the study. All patients had come for routine congenital anomaly scan(Level II Scan). 57 patients were diagnosed with some kind of Congenital Anomaly in the baby.

Table 1: Distribution of anomalies according to the system affected.

ANOMALY	NO of patients	INCIDENCE
CVS	9	1.09%
MSK	13	1.58%
Gastrointestinal	11	1.34%
CNS	9	1.09%
Urinary System	6	0.73%
Cleft Lip and Palate	9	1.09%

Total	57	6.92

A total of 6.92% incidence of anomalies was detected with musculoskeletal anomalies accounting for the highest incidence followed by Gastrointestinal and Cardiovascular anomalies.

Table 2: Obstrectic Outcome of patients with congenital anomalies in fetus

Obstetric Outcome	No of patients
Normal Vaginal Delivery	36
LSCS	12
MTP (Medical Termination of Pregnancy)	9
Stillbirth	4

LSCS was indicated in 12 of the 57 patients purely due to the anomaly. Abortion in view of gross anomaly incompatible with life was indicated in 9 of the patients. Of the patients that chose to continue with the pregnancy irrespective of the anomaly 4 had stillbirth while the rest delivered live babies.

Table 3: Age of mother and Congenital Anomalies

Age of Mother	No of patients with anomalies	INCIDENCE
18-25	7	7/230=3.04%
25-30	6	6/173=3.46%
30-35	18	18/206=8.7%
>35	26	26/211=12.3%

Incidence of Anomalies with respect to the age of the mother calculated using the no of patients from each age group clearly showed that with increase in maternal age the incidence of Congenital Anomalies increased proportionally.

Table 4: Congenital Anomalies and predisposing High Risk Factors

High Risk Factors	No of patients
Diabetes Mellitus	13
Poor Maternal Nutritional Status	9
Obesity	11
History of Exposure to Toxins/Drugs	6

Various risk factors that predisposed the mother to develop Congenital Anomalies in the foetus were present in many patients however in 24 of 57 patients diagnosed with congenital anomalies no significant risk factor could be seen.

IMAGES:

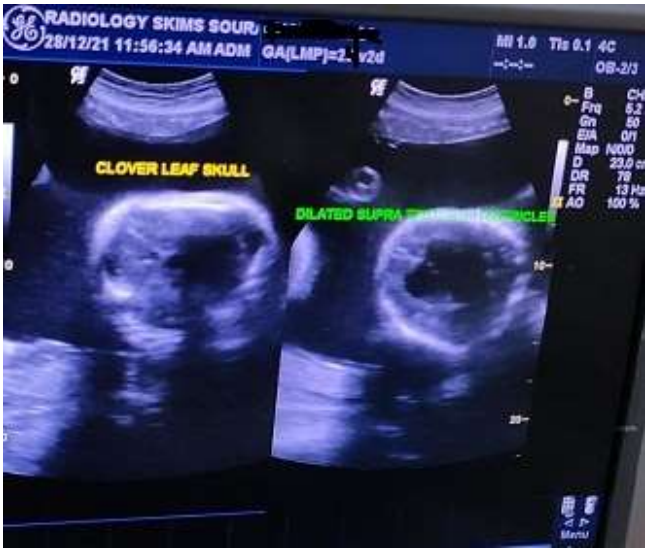

Figure1: Cloverleaf skull in a fetus diagnosed with Thanatophoric Dysplasia

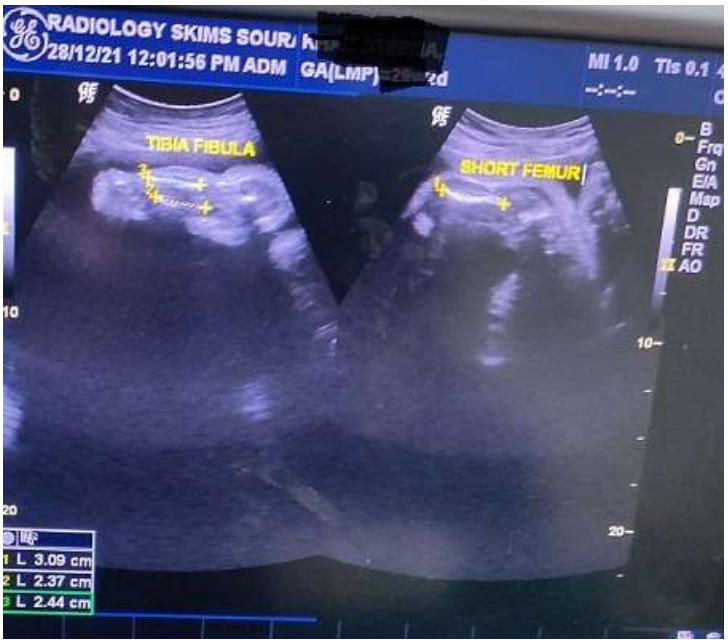

Figure 2: Short Femur in a patient diagnosed with Rhizomelia

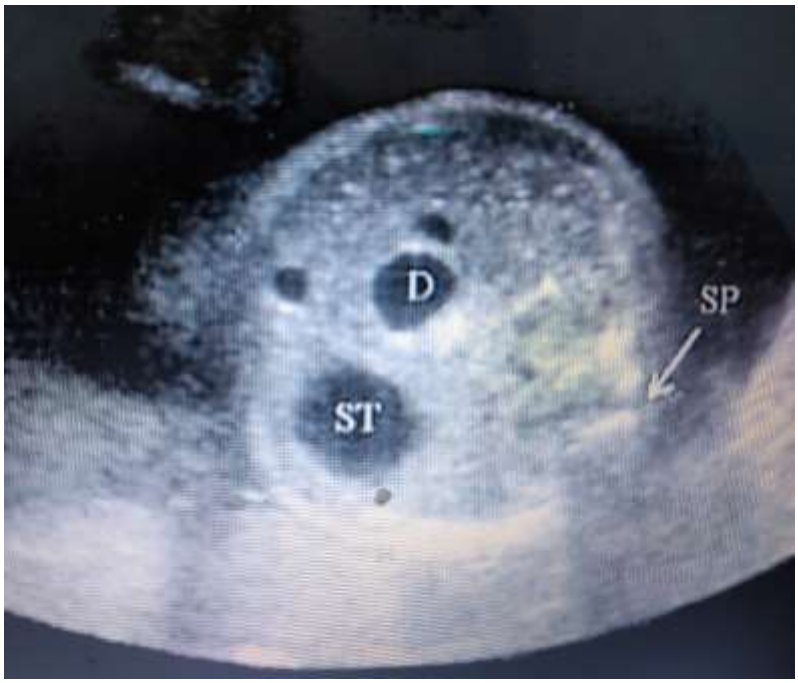

Figure 3: Double Bubble Sign in a patient with Duodenal Atresia

DISCUSSION:

Despite their relatively low prevalence, fetal malformations are responsible for a lot of of perinatal deaths in addition to considerable infant morbidity in developing countries. Prenatal diagnosis of congenital disease provides information for decisions during pregnancy and appropriate treatment perinatally (timed delivery in tertiary care centers) and it is assumed to improve perinatal and long term outcome. A major impact of antenatal diagnosis of malformations is related to the severity of the malformations detected. Most severe defects are reportedly detected earlier than minor ones, which is especially relevant in many countries where only before viability is termination of pregnancy authorized by law.[11] The gestational age at which a severe malformation is diagnosed is therefore crucial to further management of the pregnancy.

Our Study shows that the prenatal diagnosis of Congenital Anomalies significantly alters management decisions including conversion from Vaginal delivery to LSCS which might in effect lead to better perinatal outcomes for both the mother and the child. Alternatively the decision of MTP alters the whole management course and may prevent the additional stress of carrying the child in womb for 9 months when the child in fact has bleak to no prognosis of surviving or living a normal life.

The most common anomalies were that of Musculoskeletal System followed by anomalies of Gastrointestinal System, Cardiovascular System and Central Nervous System in that order.

Our study also shows that increasing maternal age leads to higher incidence of congenital anomalies particularly in women above the age of 30 years and various risk factors can predispose to development of Congenital Anomalies including Diabetes Mellitus.

Conclusion:

Prenatal USG for diagnosis of Congenital Anomalies is a strong tool that can help in early diagnosis of such anomalies and potentially alter the course of pregnancies/their maanagement. Routine Level II Scan at 18-22 weeks must be offered to all pregnant women whether at high risk of developing anomalies or not. Early diagnosis of lethal anomalies saves the woman from additional trauma of continuing the pregnancy till term, and diagnosis of non-lethal anomalies helps in proper management of the pregnancy and prompts early investigation and treatment of the child suffering from such anomalies. Prevention of high risk factors as elucidated in the study can help in reducing the overall incidence of Congenital Anomalies.

Conflicts of Interest: None

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