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Research Article

SOME OBSERVATIONS ON ABORTED FETUSES FOR MULTIPLE CONGENITAL ANOMALIES

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ABSTRACT
The objective of present study was to observe various types of anomalies in the aborted fetuses and to record the percentages of their incidences. The study was carried out in the major hospitals of Bangalore and Kolar Districts between 2008-2010. 48 aborted fetuses constituted the materials for the present study. Out of them 32 fetuses showed multiple congenital anomalies while 16 showed solitary anomalies..Each anomalous fetus was clearly examined and anomalies were noted. Only external anomalies were noted. Then the findings were noted in the table forms. Some observations on aborted fetuses for multiple congenital anomalies. Anomalies were seen in central nervous system, cardiovascular system skeletal system and gastro intestinal systems All these were well compared and correlated with other workers and also with available literatures. This study on anomalies in aborted fetus tells us about probable cause of anomalies

Key Words: *Consanguinity—Still births-Aborted Fetus-Anomalous Fetus-Multiple Congenital Anomalies*

INTRODUCTION
As per the analysis of all published papers, Incidence of multiple congenital anomalies is 1.94% -2.03% (Madhavan *et al.,* 1991 and Verma *et al.,* 1992). Genetic factors (30%-40%) environmental factors (5%-10%) are causative factors for the occurrence of multiple congenital anomalies. Anomalies caused by genetic factors, 6% are caused by chromosomal abnormalities.25% are caused by disorders of single genes & 20-30% are caused by multifactorial while 50% of cases multiple congenital anomalies is idiopathic (Rajangam and Rama, 2007). The commonly occurring multiple congenital anomalies has found to be defects of neural tubes or anomalies of cardio vascular systems, musculo-skeletal system & gastro intestinal systems (Verma, 1978).

MATERIALS AND METHODS
During the study for anomalies in labor ward of teaching hospitals of Raja Rajeswari Medical College (RRMC), Bangalore from 2008-2010, as well as from the labour ward of Sri Devraj Urs Medical College Teaching Hospital, Tamaka, Kolar, forty eight aborted fetus showed congenital anomalies. It was these forty eight cases which constituted the materials for the present study. A proper family history of abortion, consanguoious or nonconsanguious marriages, maternal history of polyhydramnios, bad obstetric history and or systemic diseases were properly recorded. The cause of abortion was noted in each case. Later examination of each aborted fetus was conducted for the presence of single or multiple congenital anomalies each congenital anomaly was studied with the consent of the relatives & head of department obstetrics & gynecology & Anatomy, RRMC, Bangalore. As well from Teaching Hospitals of Sri Devraj Urs Medical College, Tamaka, Kolar Morphology of aborted fetus was also studied. Finally they were grouped under various systems & groups of systems. Photographs were for each anomaly also then the study was compared and correlated with the available literatures.

OBSERVATIONS
Forty Eight aborted fetuses showed different types of congenital anomalies. Out of them thirty two aborted fetuses showed combination of anomalies from the various systems while sixteen aborted showed

single anomaly only there were five types of combinations. Later their percentages were calculated & tabulated as follows.

Table 1: Showing various types of combinations of Anomalies & their percentages of incidences

S. No.	Type of Anomaly or combination of Anomalies	Number of Anomalies	Percentages of Anomalies
1	Gastrointestinal ANOMALIES(GIT) & Musculoskeletal (MSK) anomalies	12 Cases	25%
2	Musculoskeletal(MSK) anomalies & Craniospinal (CNS) anomalies	07 Cases	14.58%
3	Craniospinal(CNS) anomalies, Facial Anomalies anomalies	01Cases	2.83%
4	Craniospinal anomalies(CNS)&Musculoskeletal (MSK) anomalies	08Cases.	16.67%
5	Craniospinal (CNS) & genetic anomalies	04 Cases	08.33%
6	Solitary Anomalies	16 Cases	33.33%

It is evident from the table-1, which shows that combination of Gastrointestinal Anomalies (GIT) & Musculoskeletal (MSK) anomalies constituted higher percentages of incidences. (25.00%), followed by Cardiovascular (CVS) anomalies, Musculoskeletal (MSK) anomalies & Craniospinal (CNS) anomalies (14.58%) and Craniospinal (CNS) anomalies, Facial Anomalies (2.83%), craniospinal & musculoskeletal (16.67%), Craniospinal (CNS) & genetic anomalies-08.33%.Finally solitary cases were 33.33%.

Table 2: Showing percentages of incidences individual anomaly in each aborted fetus

S. No.	Type of Anaomaly	Number of Anomalies	Percentages of Anomalies
1	Anencephaly **(CNS)**	04	8.33%
2	Craniorachisisis**(CNS)**	01	2.08%
3	Meningocele **(CNS)**	01	2.08%
4	Club foot **(Musculoskeletal)**	02	4.16%
5	Down Syndrome**(Genetics),**	03	6.25%
6	Duodenal Atresia **(GIT)**	02	4.16%
7	Imperforate Anus **(GIT)**	02	4.16%
8	Facial anomaly	01	2.08%
		16 cases	

It is noted from the table 2, that Anencephaly (CNS anomaly) has higher percentages incidences (5.88%), followed by Down's Syndrome (4.41%).Anomalies of Gastrointestinal tract has 2.94% of incidences each .Meningocele, Craniorachisisis, & facial anomaly constitute Least percentage of incidences (1.47%).

Table 3: Showing percentages of incidences maternal factors causing anomalies in aborted fetus

S. No.	Maternal Actors	Numbers of Mothers	Percentages of Incidences
1	Hypertension	05	10.41%
2	Hydroamnios	06	12.50%
3	Bad obstetric history (Still birth Repeated abortions)	05	10.41%
4	Consanguinity	13	27.08%
5	Intake of drugs	Nil	--------
6	Diabetes mellitus	13	27.08%
7	History intake alchohol,	nil	---------

It is apparent from the from the table 3 that Consanguinity & Diabetes mellitus (27.08%)constituted higher percentages of maternal factors followed by Hydroamnios (12.50%) and Bad obstetric history (BOH) (Still birth Repeated abortions) and hypertension (10.41%).There were no history on intake of drugs & nor intake of alcohol during first trimester of pregnancy.

DISCUSSIOIN

Consanguinity is said to be the etiological factor for the multiple congenital anomalies (MCA) along with mental retardation which has caused morbidity and mortality (Bromiker *et al.,* 2004). The incidence of consanguinity in the literature is between 2-60% and in India between 5-60% (Jaber et al. 1998). The incidence of genetic disorders in India is 2.3% (Verma and Bejamia, 2002). In India very few investigators have analyzed the role consanguinity on congenital anomalies (Puri *et al.,* 1977). In Indian culture, the incidences of consanguineous marriages are well known. Investigations have shown that there is associations between consanguinity, mental retardation (MR) and multiple congenital anomalies (MCA) (Anana et al., 1998; Bittles, 2001 and Bittles, 2002). There is also well known association between consanguinity and multiple congenital anomalies (MCA).and there are various investigations from the study by different workers are by Stevenson (1986), Naderi (1979), Bittles (2002), Bromiker et al., (2004) India has highest coefficient of inbreeding in the world (Gogate, 2006) **(**Rajangam and Devi, 2007). A study was done on 8640 female subjects. They underwent routine ultrasound investigations. Among the craniospinal anomalies, Out of them 35 craniospinal anomalies were diagnosed with an incidence of 0.9%. Anencephaly constituted an incidence of 48.57% (17 cases). Out of them, there were 14 female anencephaly fetuses and three male anencephaly fetuses. In their study, male is to female anencephaly ratio was 3.25:1 A craniospinal anomalies has been reported which showed an higher incidence of Anencephaly (48.57%), followed by incidences of Spina bifida (36.29%) Meningocele (17.64%) along with anomaly of cleft lip (5.64%). Anomalies were diagnosed between 21-28 weeks of gestation (Dhapate et al., 2007). 1737 pregnant women were studied during 2^{nd} & 3^{rd} trimester. 27 (1.55%) fetal anomalies were found during screening of above pregnant women. Out of them, 22(8.48%) were anencephaly diagnosed by ultrasound antenatally & three (0.17%) were false positive (Rajan, 1989). In another study on neural tube defects an incidence of 7/1000 anencephaly and hydrocephalus were found in East Delhi (Sood, 1991). A case of multiple congenital anomalies having Omphalocele, extrophy of cloaca, Imperforate anus & Spinal defects (OEIS-Complex) was reported in a still birth full term fetus born to 21 years old non consanguoious mother. There was no history of drug intake or infection. This child was her second pregnancy while her first child male was normal healthy. Antenatal ultra sonography revealed omphalocele associated with polyhydramnios kyphosis of lumbar spine. Examination of fetus showed 30cms of head circumference, 24cms of crown–rump length, on fusion of genital swellings hence sex could not be made out. There was also kyphosciolosis of lumbar spine, club foot deformity & imperforate anus (Yuva *et al.,* 2007). Failure of closure of Anterior neural pore results in the development of Anencephsaly. Usually Anterior neural pore closes by 46 days after conception. Anencephaly can be made out by 11-12 weeks of intrauterine life (Cambell *et al.,* 1975). The closure of Neural tube defects occur takes place in multiple regions. Then later they fuse together (Sellar, 1995).

In The Present Study

This is a study on 48 aborted fetuses (still births) that came across in labor wards teaching hospitals of Raja Rajeswari Medical College Bangalore, as well as Sri Devraj Urs Medical College, Tamaka, Kolar, Karnataka. Out of them, Thirty two aborted fetuses showed multiple congenital anomalies (66.67%), while 16 cases showed single anomaly only (33.33%). The combination of Gastrointestinal Anomalies (GIT) & Musculoskeletal (MSK) anomalies constituted the higher percentages of incidences (25.00%), followed by Musculoskeletal (MSK) anomalies & Craniospinal anomalies (14.58%). The least percentages were seen in combination of Craniospinal anomalies (CNS) & facial anomalies (2.83%). Regarding individual anomalies, Anencephaly (CNS anomaly) showed higher percentages of incidences (8.33%), followed by Down's syndrome (6.25%). Anomalies of Gastrointestinal tract have 8.32%.

Consanguinity & Diabetes mellitus (27.08%) constituted majority of maternal factors followed by Hydroamnios (12.50%) and Bad obstetric history (BOH--Still birth Repeated abortions and hydramnios) and hypertension (10.41%). Craniospinal constituted major (12.50%) individual group of anomalies during 24-28 Weeks of Gestation followed by gastrointestinal anomalies (8.33%), Musculoskeletal Anomalies (4.16%), *Facial Anomaly was least percentages of incidences* (2.08%). No cases of skin anomalies nor cases of Dental anomalies were found in the present study.

Conclusion

This study on aborted fetus states that it is very essential to detect fetal abnormality in the first trimester of pregnancy. Any early detection is a good for obstetritician. Early of anomalies detection by ultrasound helps is preferable in order to avoid further complications. Awareness and proper guidance has to be given regarding effect of consanguinity on fetuses to all and to affected families. Further pregnancy can be planned. Hence this study has been done & reported.

Take Home Message

In order to avoid future incidences of anomalies, an Anomaly Controlling Committee (ACC) OR Anomaly cell can be set up to diagnose, detect and for surgical line of treatment in all operable cases. Then this committee can give guidance and awareness of to all regarding effect of inbreeding, usage drug during first trimester and effect of alchohol and smoking during pregnancy.

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