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Original Article

A Study of Congenital Malformation in a Teaching Hospital

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Abstract

A total of 7667 patients were admitted in Paediatrics and Paediatric surgery Department of Rajshahi Medical College Hospital from January 1999 to December 2000. Among these patients congenital malformation was found in 222 cases. The result showed that the occurrence of major congenital malformation was 2.26% and imperforated anus topped the list followed by congenital heart diseases. Minor malformation was 0.62% of which hypospadiasis and syndactyly were highest and lowest in number respectively.

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Introduction

The field of congenital malformation has expanded dramatically during the last 25 years due to innovative modern technique.[1] Malformation is a primary structural defect arising from a localized error in morphogenesis. Single primary defects are which aetiologically heterogeneous which implies that some have an aenvironmental etiology, some are due to teratogens and others result from dominantly of recessively inherited single altered gene.[1] A major malformation has serious medical, surgical and cosmetic consequences.[2] On the other hand, a minor malformation has no serious consequences and it occurs 4% of children of some races.[3,4] One of the important purpose of the routine examination of the newborn is to detect any congenital anomaly that may impair normal development of the baby.[4] On the other hand, multiple malformation in which one or more developmental anomalies of two or more systems have occurred, all of which are thought to be of common etiology.[5]

In our country, epidemiology of malformation has not been worked out till now. So this study is undertaken to determine the occurrence of congenital malformation among the children of a teaching hospital.

Materials and Methods

All the 7667 patients admitted in Paediatrics and Paediatric surgery Departments of Rajshahi Medical college Hospital from January 1999 to December 2000 were included in this study. Data was collected retrospectively in cross-sectional way from both the above department of Rajshahi Medical College Hospital. These patients were referred to this these unite Obstetric department of this institution, different clinics of Rajshahi City, district hospitals and upozilla health complexes of

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northern area of this country. Both the major and minor congenital malformation was taken into account by a prescribed proforma.

Physical and clinical examination were the only means of diagnosis. Appropriate investigations like chest X-ray, E.C.G. and Echocardiogram were done for the diagnosis of congenital heart diseases and so on.

Those patients who were suffering from club foot, hydrocephalus were referred to the Orthopaedic and Neuro surgery department and these cases were excluded from our study.

Result

Out of 7667 patients admitted in Paediatrics and Paediatric surgery Department, 222 cases were congenital anomalies. Among them 174 had major anomalies and the rest 48 had minor anomalies, which is shown in table-1. Among the 10 varieties of major anomalies imperforated anus was the highest (40) in number, followed by congenital heart disease (32), which includes both cyanotic and acyanotic variants. Cleft lip with or without palate was 30; Hirschsprung's disease, congenital hypertrophic pyloric stenosis, spina bifida, and cystic hygroma were 22, 20, 10 and 8 in number respectively. Omphalocoele major and hypothyroidism both were 05 in number and the least diaphragmatic hernia, which was 02 in number.

Forty eight minor anomalies were detected in this study, which are shown in table-2. Hypospadias was the most frequent followed by (30) in number, undescended testis (12) syndactyly (6) Congenital malformations were more common in male than female; out of 222 malformation 178 were found in male children and 44 in female children, which is shown in table-3.

Table 1: Showing incidence of major congenital malformation

Malformation	Total No	Per thousand
Imperforated anus	40	5.21
Congenital heart disease	32	4.17
Cleft lip with or without cleft palate	30	3.91
Hirschprung's disease	22	2.86
Congenital hypertrophic pyloric stenosis	20	2.60
Spina bifida	10	1.30
Cystic hygroma	08	1.04
Omphalocele major	05	0.65
Congenital hypothyroidism	05	0.65
Diaphragmatic hernia	02	0.26

Table 2: Showing incidence of minor congenital malformation

Malformation	Total No	Per thousand
Hypospadias	30	3.91
Undescended testis	12	1.56
Syndactyly	06	0.78

Table 3: Showing incidence of congenital malformation in different sex.

Sex	Total No	Per thousand
Male	178	23.21
Female	44	5.73

Discussion

Incidence of congenital malformation varies according to the mode and time of detection. Considering the incidence of major malformation (22.65/1000) and minor (6.25/1000) malformation of this study is consistent with other studies[6,13]. The figure of major malformation is higher which is related with large number of premature delivery[7].

In the United States, imperforated anus occurs 1 in 500 live births,[1] and lower in stillborn premature baby. This incidence co-relates well with our study. Low and intermediate varieties of imperforated anus can be diagnosed by gentle insertion of little finger and we have got 40 cases (5.21/1000) which is much higher than the observation (0.6/1000) by Stephen.[9]

The incidence of cleft lip with or without cleft palate is 1.4 per thousand live birth.[7] We have in 30 cases (3.91/1000). The higher rate has also been found by other authors.[1,2]

Congenital heart disease occurs in 8 out of 1000 live births[1]. Hoffman reported that the incidence of ventricular septal defect was 2 per 1000 live births, which was five times than Fallot's tetralogy[8]. In the present study it is 3.0 and 1.7 per thousand respectively possibly represent the total shunt defect including transient ductus arteriosus.

Hirschsprung's disease occurs/per 5000 live births[10]. This co-relates with our study (2.86/1000).

In the United States, hypertrophic pyloric stenosis occurs in 3 per 1000 live births and males are affected 4 times than females.[11] This also coincides with our study (2.60/1000)

The incidence of spina bifida is 0.2/1000 live births in The United States. But it was 5 times more common in this study.

The incidence of minor malformation is also consistent with reports from other study[2, 7].

Conclusion

It is very difficult to reach an accurate diagnosis of congenital malformation, as some are genetically determined chromosomal disorder while others are related to the intra uterine factors, and insults that are preventable and also requiring genetic counseling.

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