Paediatrica Indonesiana 20 : 145 — 150. July — August 1980.

ORIGINAL ARTICLE

Congenital Heart Disease

by

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Abstract

This paper reports 54 cases of Congenital heart disease which were diagnosed by simple methods, without Cathetherisation and Angiocardiography.

These consisted of : 1). 37% Ventricular septal defect. 2). 24% Atrial Septal defect, second type. 3). 11,11% Patent Ductus Arteriosus Botalli. 4). 9% Tetralogy of Fallot. 5). 7,5% Stenosis pulmonalis. 6). 3,7% Atrial septal defect primary type. 7). 1,85% Aorta stenosis. 8). 2% Others.

Early signs and symptoms were : frequent cough, growth retardation, dyspnoe d'effort, Electrocardiographic and Rontgenologic abnormalities.

With simple examinations we can almost accurately diagnose congenital heart disease.

We suggest to build up more cardiac centres to overcome congenital heart disease problems.

Received 24th Nov. 1979.

Introduction

Cardiovascular diseases in children occur as a consequence of congenital heart disease and rheumatic fever (Kaplan, 1975).

In Indonesia, the major problems of heart disease fall in the fields of: Congenital Heart Disease, Rheumatic Heart Disease, Diphtheric myocarditis, Coronary artery disease, Cardiomyopathy, Cardiac Surgery and Epidemiology (Ranti, 1974).

In recent studies from North America as well as from Europe it was found that congenital heart disease occurred in about one per 125 (0,8%) of live born children (Kenneth, 1975), or 0.8 — 1% (Hoffman, 1971) and in one third of these cases no survival is possible without proper diagnosis and treatment (Friedberg and Litwin, 1976). Based on these data in the United States it is assumed that there are about 3200 infants with congenital heart disease born every year (Kenneth, 1975).

Initial recognition of congenital heart disease in neonates as well as decision for referral to a cardiac centre for subsequent treatment are most important.

Early detection followed by timely transfer to a cardiac centre, supported by correct diagnosis and surgical technique offer a good outlook for 80% of the patients (Mc Namara, 1975).

This study was undertaken with the purpose to present data on congenital heart diseases found at the Gajah Mada University Hospital and to discuss some of their aspects.

Material and Methods

Material consisted of congenital heart disease patients admitted to the Department of Child Health, Gajah Mada University Hospital, Yogyakarta, from January 1975 until December 1977.

The following data were recorded of each patient: history of the disease, physical, rontgenologic and electrocardiographic examinations on admission. The diagnosis of congenital heart disease was based on: history of the disease, clinical, electrocardiographic and radiologic findings.

The patients were re-examined every month or once in six months depending on the severity of the disease to detect the occurrence of complications, e.g. the beginning of pulmonal hypertension, the beginning of congestive cardiac failure and hypoxia.

Results and Discussion

The number of cases of congenital heart diseases and the type of the defects and sex distributions in the Department of Child Health, Gajah Mada University Hospital during 3 years is shown in table 1 and 2.

TABLE 1 : *Frequency of congenital heart diseases*

Year	Number of cases of congenital heart disease	%	Number of patients admitted to the hospital
1975	8	0.04	1809
1976	18	0.09	2003
1977	30	0.14	2151

TABLE 2 : *Type of defect and sex distribution*

Type of defect	Yogyakarta				Ey and Johnson 1974 %	Neison 1975 %	Rudolph 1977 %
	M	F	Total	%			
1. Ventricular septal defect.	6	14	20	37,04	61	24	35 — 50
2. Patent ductus arteriosus	4	2	6	11.11	7	15	10 — 15
3. Atrial septal defect, type II	7	6	13	24.07	—	12	5 — 10
4. Tetralogy of Fallot	2	3	5	9.26	2	11	4 — 6
5. Pulmonal stenosis	1	3	4	7.41	13	11	6 — 8
6. Aorta stenosis	—	1	1	1.85	—	6.5	6 — 8
7. Atrial septal defect, type I	1	1	2	3.7	2	—	5 — 10
8. Coarctatio aortae	1	—	1	1.85	2	4.5	6 — 8
9. Hyperplastic left heart syndrome	—	1	1	1.85	—	—	
10. Single ventricle	1	—	1	1.85	—	—	
T o t a l	23	31	54	99.99			

The number of cases increased every year during the last 3 years. This fact may be due to the increasing interest of pediatricians in congenital heart disease or to the awareness of people in general of this disease.

These obtained data (Table 2) are nearly the same as mentioned in the literature although catheterisation and angiographic procedures are not yet performed.

A g e :

42,6% of the cases admitted to the hospital are at the age of less than 6 months. Congenital heart disease should be diagnosed as early as possible, as well as timely transferred to the cardiac centre especially in infants to prevent complications.

It is suggested that Maternity Hospitals, Health Centres, Mother an Child Health Centres and general practitioners should pay more attention to congenital heart disease.

75% of patients with Ventricular Septal Defect were admitted to the hospital at the age of less than 6 months.

This may be due to the fact that Ventricular Septal Defect is the most frequent defect in congenital heart disease whereas the diagnosis of Ventricular Septal Defect is relatively simple.

Nine out of 54 cases died :

— 22.22% due to Congenital heart disease itself.

— 11.11% due to complication after operation.

— 66.7% due to complications of Congenital heart disease or other disease.

66.7% died before the age of six months.

To prevent this high mortality, and to prolong life expectancy of Congenital heart disease patients, early diagnosis is necessary to avoid complications. According to Rowe (1970), the cause of death is often due to coming to the physician too late.

The cause of death from congenital heart disease :

I. Cardiac failure due to the congestion, which leads to haemodynamic disturbances :

a. The congestion of the pulmonal veins.

b. Pulmonal volume overload.

II. Systemic hypoxemia :

a. Restricted pulmonary blood flow.

b. No transformation of blood flow between the two circulations.

Autopsy data of cardiac malformation in the first months of life are as follows (cited from some centres) (Rowe, 1970):

1. Hypoplastic left heart syndrome.
2. Coarctation of the aorta.
3. Transposition of the great arteries.
4. Hypoplastic right heart syndrome.
5. Tetralogy of Fallot.
6. Truncus arteriousus.
7. Endocardial cushion defect.
8. Ventricular septal defect.

Indication for cardiac surgery :

1. No surgery 16.67%
2. Surgery contra-indicated —

3. Surgery indicated :
   — Urgent 29,63%
   — Non urgent 33.33%
   } 62,96%
4. Inoperable 7.40%
5. Surgery not indicated because of associated anomalies 8 %

Indication for cardiac surgery is based on the criteria as suggested by Loh (1970).

Loh findings are as follows :

1. Non surgery 18%
2. Surgery contra indicated —
3. Surgery indicated 64%
4. Inoperable 10%
5. Surgery not indicated because of associated anomalies 8%

62,96% of our cases were indicated for surgery but only in 5 out of 34 cases (14,7%) surgical treatment could be carried out. This is due to social, economical and psychological problems of the parents and the patient as well, so it is important to take into account these various aspects, in managing congenital heart diseases.

During the last three years the patients were sent to a cardiac centre with the following results :

YEAR 1976 :

Sent with the diagnosis of:

1. Persistent Ductus Botalli/Atrial septal defect with pulmonary hypertension (one patient)
2. Persistent Ductus Botalli (one patient)

Diagnosis from the centre :

1. Atrial septal defect with pulmonary hypertension and mitral insufficiency
2. Persistent Ductus Botalli

YEAR 1977 :

3. Atrial septal defect type I (one patient)
4. Persistent Ductus Botalli, pulmonary hypertension (one patient)
5. Pulmonary stenosis (one patient)

Diagnosis from the centre :

— Atrial septal defect, type I with pulmonary hypertension.
— Persistent Ductus Botalli
— Pulmonal stenosis. Differential diagnosis: Atrial septal defect.

Clinical symptoms on admission to the hospital were :

1. Frequent cough : 53.7 %
2. Dyspnea/Dyspnea d'effort : 55.55%
3. Cyanosis : 37.04%
4. Abnormal growth : 66.66%
5. Heart failure : 14.8 %
6. Electrocardiographic abnormality : 79.63%
7. Radiographic abnormality : 81.48%
8. Organic murmur : 96.3 %

Frequent cough,dyspnea d'effort, lack of growth are the most important symptoms of our patients. So if the three symptoms above were found on examination, congenital heart disease had to be considered, and in case of organic murmurs electrocardiographic and radiogra-

phic abnormalities, the diagnosis of congenital heart disease can be determined, and further steps are to prevent complications, especially of respiratory tract infection.

Reasons for seeking medical helps :

I. Coming to the hospital voluntarily (not referred by a physician) : 18.5%

II. Referred by a physicians :

a. With the diagnosis of other disease : 31.5%

b. With the diagnosis of heart diseases : 50 %

1. with the diagnosis of congenital heart disease : 35.2%
2. with the diagnosis of specific congenital heart disease : 3.7%
3. with the diagnosis of specific congenital heart diseases but different from our diagnosis : 11.1%

Indications for referral to the cardiac centre (Namara, 1975) :

It is suggested to refer to the cardiac centre if one or more of the following cardiopulmonary symptoms either specific or not are found :

1. Persistent tachypnea under basal resting condition.
2. Difficulty in taking food.

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