Fibroma of the Heart

CASE REPORT

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Although primary tumors of the heart are of rare occurrence in children, it is important to bear them in mind, for they can be mistaken for congenital heart malformation. With the increasing progress in open heart surgery, the diagnosis during life is of paramount importance. The majority of primary heart tumors are benign. The most frequent are the myxomas, followed by fibromas, rhabdomyomas, hamartomas, lymphangiomas, teratomas, lipomas and cysts.

There have been only four proven primary malignant tumors of the heart reported in the medical literature. Bigelow1 reviewed eight cases of heart fibromas and added one. McCue2 reported another case. We believe this is the first report of a primary fibroma of the heart in an infant in our country.

Case Report

D. F., a colored girl, eight months old, was admitted to the Pediatric Service, “Nuestra Sra. de las Mercedes” Hospital, May 26, 1955, with shortness of breath. Present illness: the mother states that in the past two months the child had four spells of coldness, paleness, profuse sweating and crying. A week prior to admission, she was seen in another hospital for shortness of breath and slight temperature (37.4° C.) An x-ray film of the chest then showed an enlarged heart. Past history: Chicken-pox at the age of six months, and repeated bouts of bronchitis for two months. Psychomotor development: slightly retarded. Physical examination: Well developed (68 cms.), slightly undernourished (15.5 pounds), non-cyanotic girl. The thorax: There was

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FIGURE 1: Telecardiogram: Cardiomegaly with left ventricular hypertrophy.
FIGURE 2: Angiocardiogram: The left ventricle somewhat deformed perhaps resembling a filling defect.
slight elevation of the precordium, with visible apical heart beat on the 5th and 6th left interspaces and palpable on the fifth interspace and mid-clavicular line. Tachycardia, 120 pulsations per minute. A systolic murmur grade II was audible at the base area. Palpable femoral pulses. Blood pressure: Upper limbs, 88 mms. Hg. systolic, 50 mms. Hg. diastolic; lower limbs, 100 mms. Hg. systolic, 60 mms. Hg. diastolic. Forty four respirations per minute. Dullness on percussion of the mid right posterior hemithorax and bronchophony in the same area. The abdomen: the lower border of the liver palpable 2.5 cms. below the costal margin. The results of laboratory examinations were as follows: Blood count: 4.5 millions red cells, 11.5 grs. hemoglobin, 15,000 leucocytes, 1 per cent juvenils, 47 per cent neutrophils, 42 per cent lymphocytes, 6 per cent monocytes, 3 per cent eosinophils. Eritrosedimentation rate: 40-98 Westergren. Urea nitrogen: 24.14 mgs. per cent, blood sugar: 80 mgs. per cent, Kahn and Meinicke negative. Negative tuberculin test, urine and stool analysis. Telecardiogram: enlarged heart, left ventricular hypertrophy (Fig. 1). The electrocardiogram revealed tachycardia 166 per mn. negative T waves in D1, diphasic in D2, positive in D3. Sharp morphologic change of QRS from V2 to V3. T wave positive in V1 and V2, negative from V3 to V6; QRS pattern from V4 to V6 with tall R waves. Left ventricular hypertrophy with strain. Hospital course: Five days after admission her general condition and bronchitis had improved, she had received thiamine, B complex, vitamin C and aureomycin. Ten days later, she had another bout of bronchitis and improved again under the above treatment. A month after admission, she had coldness, sweating and restlessness. Next day she showed marked dyspnea and cyanosis. Absent breath sounds over the posterior mid-hemithorax and bronchophony over the upper half of the right side of the chest. Her pulse was countless. She was digitalized intravenously and sedated. An electrocardiogram showed myocardial ischemia, left ventricular hypertrophy and supraventricular paroxystic tachycardia. She improved some under digitals, but the paleness, coldness, profuse sweating and crying became more frequent. An angiocardiogram (Fig. 2) showed heart enlargement, but was not diagnostic. A muscle biopsy for glycogen storage disease was also negative. By elimination, the diagnosis of endocardial fibroelastosis was established. A Beck I operation was decided upon and performed on August 26, 1955. Under sodium pentothal, she was intubated endotracheally and pure oxygen was used. While making the incision on the left thorax, little bleeding was noticed from there on. The anesthesist reported absence of pulse

FIGURE 3: The main mass of the tumor occupying the interventricular septum.
and blood pressure. Immediately the thorax was entered and cardiac massage started. This was continued for 90 minutes when the diagnosis of irreversible cardiac arrest was established. At necropsy the heart was enlarged, especially the left ventricle. On opening the heart, there was a 7 cms. in diameter white-greyish rounded tumor mass (Fig. 3) arising from the ventricular septum, extending to the wall of the left ventricle and protruding into the left ventricular chamber producing a true sub-aortic stenosis. Macroscopically the tumor was identical to a uterine fibroma. No other cardiac anomaly was present. Aside from a slight liver congestion, the rest of the necropsy was negative. Microscopic studies revealed the fibroblastic nature of the tumor (Fig. 4). It was almost entirely composed of fibroblasts and fibrocytes mixed with collagen fibers. This tumor was fairly well encapsulated, although in certain areas cardiac myofibrills could be seen crossing those of the tumor.

**Discussion**

The diagnosis of heart tumor during life is difficult, but has been made on several occasions. In our case which had paleness, coldness, sweating and crying, we thought of the possibility of an anomalous coronary artery, arising from the pulmonary artery. The clinical course and the electrocardiogram ruled this out. Acute beri-beri was also ruled out by the absence of neurologic signs and the lack of response to the massive administration of vitamin B. Glycojen storage heart disease was ruled out by muscle biopsy. By elimination and with the positive findings of cardiomegaly with left ventricular hypertrophy and a murmur of low intensity, the diagnosis of endocardial fibroelastosis was clinically established. With this diagnosis in mind and trying to revascularize the heart, the Beck I operation was recommended. Looking back, perhaps the correct diagnosis could have been established from the angiocardigrams (Fig. 2). On the films the right side cavities seem somewhat displaced from left to right, and the right ventricle is not well outlined. The right ventricle outflow tract and pulmonary artery seem somewhat elevated. On the late films (Fig. 2) the left ventricle seems somewhat deformed losing its ovoid shape, perhaps resembling a filling defect. On the other hand, the tumor arising from the septum and protruding within the left ventricular cavity, acting as a sub-aortic stenosis, could well explain the coronary symptoms. According to medical literature, the most frequent location of primary fibromas of the heart is the left ventricle. Next to this location is the interventricular septum established by the auricles. Bigelow established the differential diagnosis between fibromas and rhabdomyomas. He believes that rhabdomyomas are not true neoplasms. The so-called fibromas are much like the uterine leiomyomas while rhabdomyomas resemble hemartomas. True fibromas have been reported under the name of rhabdomyoma, fibrosarcoma and hamartoma.
REFERENCES