Case Reports

A Case of Patent Ductus Arteriosus in a 60-year-old Female

Hideo TOHGI, M.D., Satoru MATSUSHITA, M.D., Masao HATTORI, M.D.,
and Kazuhiko MURATA, M.D.

PATENT ductus arteriosus is generally accepted to be surgically treated in infancy or childhood. Our knowledge, however, of its natural history is still not enough. Reports of elderly patients of this anomaly without surgical treatment is such a rarity that only 15 cases over 60 years of age could be detected in a search of the available literature.¹⁾⁻¹²⁾

In the case to be reported, a diagnosis of patent ductus arteriosus was made in a 60-year-old woman who had had an almost ordinary life since her birth. To the best of our knowledge, this is the oldest case of patent ductus arteriosus reported in Japan.

CASE REPORT

A 60-year-old woman was admitted to the hospital on Nov. 7, 1965, with a history of good health until approximately 5 years prior to her admission. She had been known to have a cardiac condition since childhood, but had spent her active life as a house wife or a matron with four normal deliveries. She had never been cyanotic, edematous nor severely dyspnoeic. In the last 5 years, however, she had repeatedly caught cold and complained of cough and foamy sputum especially at night. Since 2 years before admission, increased pulmonary markings had been noticed in chest X-ray films.

Fig. 1.

From the Third Department of Internal Medicine, Faculty of Medicine, University of Tokyo.
Received for publication May 23, 1966.

Fig. 2.

Fig. 3.

Physical examination revealed an obese woman. Her pulse rate was 66 per min. and regular, her blood pressure 142/60 mm.Hg. Radial artery was sclerotic. Slight edema was found in the dorsum of the feet. Rales were heard all over the lung field. The cardiac dullness was enlarged to the left one finger breadth beyond the mid-clavicular line. At the Erb's point, a grade 4, harsh systolic murmur was heard and continuously followed by a decrescendo, blowing diastolic murmur, pulmonary second sound being masked in the murmur. By holding deep inspiration this continuous murmur decreased its intensity and single second

Table I. Results of Cardiac Catheterization

	Pressure (mm.Hg)	Oxygen Content (Vol. %)
PA	33/19	13.1
RV	35/0-5	11.6
RA		11.5
SVC		12.1
IVC		10.7
Fem. Art.		15.7 (92.4%)
O ₂ Consumption	261 ml./min.	

Pulmonary blood flow 10.0 L./min.

Systemic blood flow 6.4 L./min.

L-R shunt 3.6 L./min.

Pulmonary vascular resistance 112 dyne·sec·cm.⁻⁵/M.²

sound of normal intensity was clearly audible. At the apex of the heart only grade 2, systolic murmur was heard. Phonocardiogram is shown in Fig. 1. The chest roentgenogram (Fig. 2) revealed cardiac enlargement, dilatation of pulmonary artery segment, calcification of the aortic arch and increased pulmonary markings. Electrocardiogram (Fig. 3) revealed left ventricular hypertrophy. Venous pressure of the right arm was 140 mm.H₂O. The circulation times were 9 sec. for arm to lung and 24 sec. for arm to tongue. Cardiac catheterization disclosed slight pulmonary hypertension and 36% left-to-right shunt (Table I).

COMMENT

Patent ductus arteriosus in the aged has attracted attention since the first report of Josefson in 1897.¹⁾ Only 15 cases surviving over 60 years of age without surgical treatment have been reported,¹⁾⁻¹²⁾ 8 of whom were confirmed by autopsy and 4 by cardiac catheterization. Eight cases were 70 years of age and over, the oldest being 85 years old.

Fourteen cases (93%) were female. The preponderance of female is much more marked in the aged than it is in series of all ages and of children. For example, in Abbott's series¹³⁾ of 97 cases in which the average age was 21.2 years at death, the females comprised 63 per cent of the total. Also in Keys & Shapiro's series⁵⁾ of 60 cases, all of which were 17 years of age and over, 75.7% were female. The rarity of this anomaly in the aged alleged in the literature requires further scrutiny. In Abbott's series,¹³⁾ 97 patients with uncomplicated patent ductus arteriosus revealed an average age at death of 21 years. Chevaz et al.¹⁴⁾ in a series of 243 cases of this anomaly, found only one over 50 years of age. Reanalysis by Keys and Shapiro⁵⁾ of 60 autopsied cases of 17 years of age and over reported up to 1943 with uncomplicated patent ductus arteriosus

revealed the average age at death of 38.9 years for men and 35.5 years for women. These results, however, were obtained from collections of cases in which autopsies were performed or some symptoms were complained. Consideration should be given to a possibility of an appreciable number of symptom-free, living patients (at least 20,000 in the United States by rough calculation of Keys and Shapiro⁵ in 1943) and cases overlooked at autopsy, when the deaths are noncardiac in nature. In this regards, patients with patent ductus arteriosus who live out a natural life without surgical correction seem to be more than can be confirmed.

Although there is no reason to withhold surgery at an early age before acquisition of other complications, there remains the necessity of further knowledge of natural history for accurate evaluation of surgical treatment.

SUMMARY

A patent ductus arteriosus in a 60-year-old woman was reported as the oldest case on record in Japan.

ACKNOWLEDGEMENT

Authors' acknowledgement is due to Prof. K. Nakao and Associate Prof. M. Ikeda for their valuable guidance and advice.

REFERENCES

1. Josefson, A.: Nord. Med. Ark. **7**: 1, 1897 (Abstract in Zblt. inn. Med. **19**: 634, 1898).
2. White, P. D.: J.A.M.A. **91**: 1107, 1928.
3. Brody J. G. and Rendell, A.: Ohio State M. J. **31**: 599, 1935.
4. Walker, G. C. and Ellis, L. B.: Proc. New England Heart Ass. p. 26, 1940-1941. Cited from Fishman, L. and Silverthorne, M. L. (6)
5. Keys, A. and Shapiro, M. J.: Am. Heart J. **25**: 158, 1943.
6. Fishman L. and Silverthorne, M. L.: Am. Heart J. **41**: 762, 1951.
7. Storstein, O., Humerfelt, S., Müller, O., and Rasmussen, H.: Brit. Heart J. **14**: 276, 1952.
8. Holman, E., Gerbode, E., and Prudy, A.: J. Thorac. Surg. **25**: 111, 1953.
9. Bain, C. W. C.: Brit. Heart J. **19**: 574, 1957.
10. Fishman, L.: Am. J. Cardiol. **6**: 685, 1960.
11. Aiken, J. E., Bifulco, E., and Sullivan J. J., Jr.: J.A.M.A. **177**: 330, 1961.
12. Bermúdez, F., Lozada, T., and Hamdan, G.: Arch. Inst. Cardiol. Méx. **33**: 102, 1963.
13. Abbott, E. M.: Atlas of congenital cardiac disease, New York, American Heart Association, 1936.
14. Chavez, I., Espino Vela, J., Limor, R., and Dorbecker, N.: Arch. Inst. Cardiol. Méx. **23**: 678, 1953.