

## **Case of univentricular or tricoelian heart / by Robert Elliot.**

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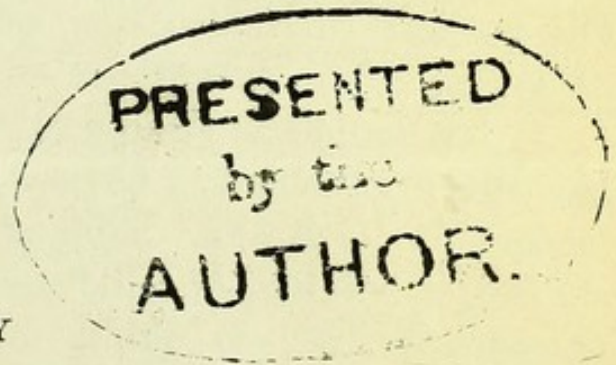
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CASE OF UNIVENTRICULAR

OR

TRICELIAN HEART.



BY

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*Fellow of the Royal College of Physicians of London.*

CAMBRIDGE:

PRINTED AT THE UNIVERSITY PRESS.

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CASE OF UNIVERGICAL

TRICOLLIAN TRAIT

PRESENTED

AUTHOR

ROBERT MILLIOT, M.D. (1873)

Author of the book 'Lectures on the History of the French Republic'

CAMBRIDGE

PRINTED AT THE UNIVERSITY PRESS

1873

[From the *Journal of Anatomy and Physiology*, Vol. XI.]

Erasmus Wilson Esq. F.R.S.  
with Dr. Elliot's kind regards

CASE OF UNIVENTRICULAR OR TRICÆLIAN HEART<sup>1</sup>.

By ROBERT ELLIOT, M.D., F.R.C.P. *Carlisle*.

THE case of J. C——, a clerk in a public office, most nearly approximates to the 17th of Dr Peacock's 2nd Edit., p. 148; and to the 4th of Dr Cockle in the *Med-Chir. Trans.*, Vol. XLVI. p. 200, quoted from Mr King.

The peculiarity of J. C.'s case was that transposition of the great vessels; smallness of the aorta, and large size of the pulmonary artery; total absence of ventricular septum—coexisted with all but total freedom from pericardial adhesion; equally healthy and efficient lungs; the attainment of the age of 19 years and 8 months; and great amiability and humour.

Cyanotic signs were first observed at 3 months of age, and gradually increased as he grew older. The livid complexion, the clubbed finger ends, the sensibility to cold, the inaptitude for bodily exertion, the stuffy breathing, the high intelligence, were such as are usual in cyanosis. He was short and slight in figure, had no beard, his chest was small, rounded and projecting, especially at the left border of the sternum, and with trifling movement. On percussion of the chest there was dullness in the precordial region far beyond normal limits. The heart's action was nervous and thumping, with a whizzing bruit which only occasionally accompanied the systolic sound, the 1st and 2nd sounds, however, were otherwise normal. His pulse was an exceedingly shabby one, and strangely variable in force, but not in frequency, being always about 80. There was no other indication of valvular defect, nor any sign of pericardiac disease.

<sup>1</sup> Read to *Med-Chir. Soc.* London, June 23, 1868. Abstract in *Proceedings* of that date.

Appetite good, bowels regular, urine generally turbid, sleep of average length and depth, but with thick stuffy breathing. In summer, especially in warm weather, feels himself best. His health was wonderfully good and uniform.

In his last and only important illness, extending over three weeks, his appetite was extremely poor, he vomited frequently, his tongue was dirty, aphthous, and sore; and his pulse was small and rapid; he had much precordial pain and oppression, his breathing was laborious, so that he was obliged constantly to sit up, he had drowsiness gradually deepening, extremities slightly œdematous, very cold and livid, face still more livid, and mouth and tongue most so. He died calmly, and as if through gradual exhaustion, on May 19th, 1867. He got great relief from the inhalation of oxygen, but was not troubled with any other medication. Under the influence of this gas his precordial pain lessened, his colour mightily improved, his bowels, skin, and kidneys, all acted better, and he breathed so much more freely, that he said he had not felt so easy and well for years.

I made an autopsy with the kind aid of Drs Walker and Robertson 2½ days afterwards. There was great œdema of the extremities, the body was generally livid, and especially so were the extremities, the neck and face, and the inside of the mouth most intensely so, as in life.

The brain was not inspected.

Both lungs were quite healthy: no trace of tubercle or of any disease in either of them. Slight effusion existed in each pleural sac. No adhesions.

The liver was healthy.

The pericardium externally was normal, internally there was slight effusion, and but one trifling adhesion, old, and elongated.

*The heart*, after more than two months immersion in spirit, was very carefully examined, on 24th July, 1867, with the important help of Dr Embleton, of Newcastle-on-Tyne.

*Externally*: The organ appears large, measures round its

widest part  $11\frac{1}{4}$  inches, and in length  $4\frac{1}{2}$ . The bulk was chiefly due to the right or pulmonic heart which was distended with grumous blood. External surface healthy, except the old adhesion above-named, on the front near the apex. On placing the heart with its anterior surface upwards, the anterior longitudinal furrow with its vessels holds the usual position, ending above and to the right side of the apex.

The aorta and pulmonary artery are seen to be reversed in position. From the right side of the heart springs the aorta, having, on each side of its origin, the right and left auricular appendages. The aorta is only half an inch in diameter, its arch is formed as usual, and the customary three branches are given off from it. All three are small, and in proportion to the size of the trunk from which they arise; the innominata bifurcates within half an inch of its origin. Immediately behind the origin of the aorta is placed that of the pulmonary artery, which measures an inch and three quarters in diameter, at its commencement, and passing up behind the ascending part of the aorta, it bifurcates as usual under its arch; and just below its bifurcation its diameter is 2 inches. The ductus arteriosus is quite closed. The right auricle and the right side of the ventricular part of the heart appear unduly large; this auricle is much larger than the left one, both as to its sinus and its appendage.

The venæ cavæ enter the right auricle normally, and the usual four pulmonary veins are normally connected with the left auricle.

*Internally:* The ventricular division of the heart is one large cavity, no trace of septum is visible, the organ having been freely opened from the apex towards the base. The reticulations of the columnæ carneæ on the right side are not nearly so numerous and complicated as those on the left side; the muscoli papillares are nearly as large on the right as on the left side, and the ventricular wall on the right is very nearly as thick as that on the left side.

The aortic aperture is in the position of that of the pulmonary artery, and the latter in that of the former; the orifice

of the aorta is small, its valves are of the usual form, and are healthy in appearance.

The pulmonary orifice is somewhat constricted, contrasting thus with the wide calibre of the trunk above, and yet it has about twice the diameter of the aortic opening, the latter admits only a fore-finger, whilst the former can admit two fingers.

The valves of the pulmonary artery are thickened, particularly at their borders, but unequally so, the anterior and the right posterior segments being much more so than the left posterior, which is not only thinner but also a little smaller than the others. Together, however, these valves appear to be competent to close the opening. The thickened edges of these valves appear incapable of causing the whizzing sound which sometimes accompanied the ventricular systole.

On close examination, just under the right posterior segment of the pulmonary valve, is seen a little bag of membrane, valve-like, convex and bulging towards the pulmonary aperture, concave towards the right auriculo-ventricular opening, and having two or three chordæ tendineæ attached to its otherwise free border. Its exact position was between the last-mentioned segment of the pulmonary valve and the left segment of the tricuspid valve, and might assist that segment in preventing the direct passage of blood from the right auriculo-ventricular aperture to that of the pulmonary artery, but when distended with blood it would be carried somewhat over the pulmonary orifice, and thus, in all probability, give rise to the occasional whizzing above mentioned. This little valvular bag lies in the uppermost part of the space, that is left vacant by the absence of the interventricular septum, and its attached border is fixed between the right auriculo-ventricular aperture and that of the pulmonary artery. A little below this bag, and further back, against the posterior wall of the general ventricular cavity, are seen the adjacent segments of the tricuspid and bicuspid valves connected together, a small papillary muscle running up along a part of their line of union. These two sets of valves appear to be otherwise normally arranged as regards their seg-

ments. The right auricle is a good deal dilated, and its walls hypertrophied, the appendage is unusually capacious, and the muscoli pectinati strong.

The vestige of the Eustachian valve is visible. The valve of the coronary vein shews a perforation. At the upper and back part of the fossa ovalis exists a rather oblique opening which would admit an ordinarily sized goose-quill. This is the only communication between the auricles, and could not be the cause of the whizzing murmur. Nothing abnormal in the left auricle.

*Somewhat similar*

For ~~other~~ cases of Malformation of Heart, see *Reports of Proceedings of Northumberland and Durham Med. Soc. Session 1862-63*, and ditto 1850, 1st by Dr Embleton and 2nd by Mr Wallis, South Shields, and again, 1858, in ditto, by Mr Bolton. Also, Dr Peacock's work on "Malformations, &c. of the Human Heart," *Brit. Med. Journ.*, Sept. 28, 1872, p. 351, a case by James Johnson, M.B. of Birmingham, (Deficiency, not absence of sept. ventricul.), and the same *Journ.* for Jan. 11th, 1873, a "Case of Tricelious Heart in which sept. ventricul. was absent, with figs. of exterior and interior," by S. M. Bradley, F.R.C.S. of Manchester.



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