ON MEASLES AS A CAUSE OF ENDOCARDITIS;

BEING AN ACCOUNT OF FOUR CASES IN WHICH ORGANIC
MITRAL MURMURS DEVELOPED DURING THE
COURSE OF THE DISEASE.

BY

JOHN HANLEY HUTCHINSON, M.R.C.S.,
CATTERICK, YORKSHIRE.

(COMMUNICATED BY W. B. CHEADLE, M.D.)

Received January 13th—Read April 14th, 1891.

THE occurrence of endocarditis in the course of an attack of measles is either a rare complication, or one that is very generally overlooked. Cases have indeed been noted by several observers in Germany, and by Dr. Sansom in this country, but endocarditis is not even mentioned in connection with measles in any of the text-books of medicine with which I am acquainted. I hope, therefore, that having met with four cases complicated with endocarditis during a recent outbreak of measles, I am justified in placing my experience on record.

In a large preparatory school a boy fell ill with measles a few days after his return. He was immediately isolated, but between twelve and twenty-two days afterwards no

fewer than fifty-eight out of eighty-five boys contracted the disease. The outbreak was on the whole of a mild type; few of the cases were complicated, and all finally recovered.

The boys were all in one house, which was well situated, recently built, and furnished with the most perfect sanitary appliances; they all belonged to the upper middle class, and were well cared for in every way. Four of those who contracted measles developed cardiac symptoms during the course of the attack.

CASE 1.—A delicate looking boy, æt. 10, of a very rheumatic family, one brother having died of valvular disease of the heart. The boy had been examined by the family medical attendant previous to his leaving home a fortnight before, and pronounced free from disease. He is stated to have had chorea, but never to have suffered from articular rheumatism.

He was first examined by me on the second day of the prodromal stage, when he was suffering from catarrh and fever, the temperature being $103\cdot5^{\circ}$, the pulse 116.

On listening to the heart I found a well-marked mitral systolic murmur audible over the apex, and conducted towards the axilla.

On the following day the pulse had become irregular, and in addition to the systolic apex murmur, a præ systolic murmur was audible over a limited area midway between the apex-beat and the left edge of the sternum; the second sound was accentuated in the pulmonary region, and reduplicated.

On the fourth day the temperature and pulse fell to normal in the morning, but rose again towards evening, when the rash appeared.

From this time the measles ran the usual course; the cough was rather troublesome, but there were no signs of broncho-pneumonia. The præ systolic murmur continued to be heard until the twelfth day, after which it could no longer be made out; but the systolic bruit persisted,

changing in character from day to day, yet always present during the fortnight the boy remained under my observation. Six weeks later I was informed by the family medical attendant that this murmur had also disappeared, but the pulse was still irregular, and intermitting, 1 in 40, and the boy remained anæmic.

CASE 2.—A boy, æt. 9, stated to have had croup, but I could obtain no history of rheumatism. The measles was of only moderate severity until the fourth day of the eruption, when a severe attack of catarrhal croup came on, and fine râles with bronchial breathing and some dulness on percussion were observed over limited areas at the bases of both lungs.

These signs gradually subsided, and all appeared to be going well. The heart had been examined daily, but the sounds remained normal until the fifteenth day of the disease, when the pulse became slightly irregular, and a systolic murmur was heard over the apex-beat, and conducted towards the axilla. This caused no subjective symptoms; convalescence has slowly progressed, and the boy considers himself quite well. The murmur, however, is still distinctly audible.

CASE 3.—A small delicate boy, æt. 9, subject to bronchitis, but he has never had articular rheumatism. Several members of his family are said to have suffered from heart disease; his father dropped down dead at the age of forty-two; his paternal uncle and grandfather and several relations on his mother's side are reported to have had heart complaints, but it is not known whether they were of rheumatic origin.

On the second day of the rash fine crepitations with bronchial breathing and dulness on percussion were observed in patches scattered over both lungs, with pleuritic friction over a considerable area on the left side, followed later by signs of effusion. The respiration was quickened, and the temperature went up. The heart's sounds were

clear. On the fourth day the pulse became irregular and very intermittent, and on auscultation a systolic murmur was audible at the apex, with a præsystolic murmur also a little more to the right, near the left edge of the sternum.

During the following three weeks the pulmonary symptoms gradually disappeared. The heart signs varied from day to day, the pulse being at times very irregular and infrequent, falling to 48 beats per minute, and at other times ranging from 70 to 80, but never regular.

Six weeks after the commencement of the attack both the murmurs were still present, and some hypertrophy had taken place, indicated by the fact that the apex-beat had advanced to the nipple line. The boy was not conscious of any cardiac discomfort.

CASE 4.—A boy, æt. 11, commenced with the usual catarrh, and, in addition, rather severe tonsillitis. The tonsils were evidently hypertrophied, and had suffered from previous inflammatory attacks. The boy had never had articular rheumatism, nor was there any history of family predisposition. The rash, which was abundant, and the cough, which was extremely troublesome, disappeared in the usual course, and convalescence seemed to be well established, when on the fourteenth day the pulse became irregular, and a soft blowing systolic murmur was heard at the apex for the first time. The heart had been frequently examined previously, and its sounds had been perfectly normal. This complication was not caused by a chill, as the boy had never left his room. Signs of sub-acute broncho-pneumonia also developed, but the rise of temperature was very slight. The cough remained troublesome for some weeks. The murmur altered considerably in character, and became less loud, but at the end of seven weeks, when the boy passed from under my observation, the mitral regurgitant bruit was still distinctly audible.

Remarks.—The development of endocarditis during the course of the attack of measles in these cases was no doubt

directly due to the effect of the measles poison. But it becomes a question how far an hereditary rheumatic taint may have prevailed in inducing the heart complication. In Case 1 there was a strong rheumatic history, and although the boy had never had articular rheumatism, he had suffered from chorea. The patient in Case 3, in whose family so many instances of heart disease occurred, was probably of rheumatic ancestry; and in Case 4 the boy had had repeated attacks of follicular tonsillitis. None of the cases presented any symptoms of articular rheumatism whilst under my personal observation.

It will be noted that the endocarditis developed in one instance (Case 1) during the prodromal stage; in another (Case 3) during the height of the measles, and in the other two (Cases 2 and 4) during convalescence, viz. on the fifteenth and fourteenth days respectively.

In none of the cases were there any subjective symptoms; there was no palpitation or pain, or dyspnœa; and the diagnosis was founded entirely upon the physical signs, viz. the irregular pulse, the apex murmurs, and the accentuated and reduplicated pulmonary second sound. I am aware that these signs have been stated to be sometimes present where myocarditis alone existed, but in these cases I cannot interpret the physical signs otherwise than as evidence of organic valvular mischief. The persistence of the murmurs, especially of the præ systolic in Case 3, the accentuated and reduplicated second sounds over the pulmonary area, and in one case (Case 3) the supervention of hypertrophy, are, I think, conclusive on this point. There were no physical signs of pericarditis in any of the cases.

I may state that in all these cases of measles the condition of the heart and lungs was examined daily, and my experience leads me to believe that if this rule were more generally observed, we might find, as Dr. Sansom affirms in his Lettsomian Lectures, "that the influence of measles in predisposing to endocarditis, has been much underrated."

(For report of the discussion on this paper, see 'Proceedings of the Royal Medical and Chirurgical Society,' Third Series, vol. iii, p. 112.)