A CASE OF HÆMORRHAGIC NEPHRITIS IN A NEWBORN BABY

BY

C. PAGET LAPAGE, M.D., F.R.C.P.,

Physician, Royal Manchester Children's Hospital, and St. Mary's Hospital.
(From the Department of Diseases of Children, Manchester University.)

Cases of hæmorrhagic nephritis are fairly frequent in young children, but they are not common in very early infancy. Aldrich¹ records 186 cases of all ages, and groups nephritis under several headings, putting acute post-infectious hæmorrhagic nephritis as occurring in 129 instances. Copeman⁴ records cases in children aged eleven and fourteen years. Hanssen⁷ recorded two cases in young children about four years old.

Griffiths and Mitchell⁵ give many references to acute nephritis in the newborn including a case of true congenital or foetal nephritis described by Widakoivich and Dutrey¹³. They also quote Mensi's¹⁰ report on 17 cases seen in infants from ten to forty days old. Weisswanger and Rietschel¹² give details of the findings when the new-born child of an eclamptic mother developed a severe hæmorrhagic nephritis which lasted some six days.

The following case is judged worthy of being placed on record because of the onset at a very early age, the lack of evidence of any causal agent, and the clinical and pathological records that are available.

Case report.

Infant, P. W., male, aged 11 days. Sent to St. Mary's Hospital, April 9th, 1927.

HISTORY (Dr. Chas. Wilcocks).—Pregnancy was uneventful. The mother's urine was examined several times and contained no albumen. Forceps delivery, placenta adherent. The mother had no drugs except cascara and liquid paraffin. The baby was well for a day or two then became restless and distressed and passed blood in the urine, and the kidneys could be palpated more easily than usual. Very little urine had been passed since birth and the stools though infrequent were dark and slimy. The temperature was not raised. The baby would not take breast milk and only took small quantities of milk and water.

CONDITION ON EXAMINATION.—The baby seems to be in pain. The buttocks are inflamed and there is a rash on the flexor surface of the elbows and on the shoulders. Palpation of the abdomen revealed a swelling the size of a tangerine orange in the left renal region. Mr. Morley examined the case and confirmed the palpable enlargement of the kidney.

April 10th. By catheter about 20 drops of blood-stained urine were obtained.

April 11th. Baby was worse, respirations gasping, no rise in temperature. Stools frequent, dark brownish green. Thirty drops of blood-stained urine by catheter.

April 18th. Convulsions and death.

PATHOLOGIST'S REPORT (Dr. Annie E. Somerford).—The measurements of the right kidney were—length 4.75 cm.; breadth 3.2 cm.; thickness 3.0 cm. Of the left kidney the corresponding measurements were—4.75 cm.; 3.0 cm.; 2.2 cm.

The capsule in each case was glossy, thin and non-adherent to the kidney substance. Each kidney showed extensive irregular mottling of a deep reddish purple colour, the right side being more affected.

On section it was found that the mottling seen on the surface was continued through the kidney substance. Hence the cut surface showed areas of pale, apparently normal, renal tissue alternating with deep purple areas. The contrast between the cortex and medulla was poorly marked (Fig. 1).

FIG. 1.—Hæmorrhagic nephritis. The dark areas are those in which hæmorrhage has taken place. These can be seen on the external surface of the kidney as well as on the cut surface.

The pelvis in each case did not present any abnormality. Under the microscope widespread hæmorrhage was seen involving both cortex and medulla, but being entirely confined to the interstitial tissues. The microphotograph (Fig. 2) shows the appearances of the kidney tissues outside the hæmorrhagic areas. There was marked necrosis of the cells of the tubules, and these cells had been shed into the lumina of the tubules in large numbers.

There was no evidence of congenital cystic kidney.

Discussion.

Cases of acute hæmorrhagic nephritis in new-born babies are not common. Jacobi⁹ emphasizes the intestinal and toxic origin of these cases.

Such an explanation seems to be much the most likely after the infant has had time to develop a bowel disturbance or an infection. The case recorded, however, occurred at a very early age and enquiry revealed nothing which indicated that the mother might have had a chemical poisoning which could have affected the infant's kidneys, nor was it likely that the infant had had any treatment or infection which might have caused such a severe nephritis in the first few days of life.

Cassell³ quotes syphilis as a cause of nephritis in the new-born. Paterson and Wyllie¹¹ mention babies of four and six months who had had albuminuria. My case does not appear to have been syphilitic.

There has been a good deal of literature recently on acute hæmorrhagic nephritis in children. Ball and Evans² emphasize the frequency of streptococcal infections and say that such infections may occur from the tonsils or from the skin or from the digestive tract. Wyllie and Moncrieff¹⁴ say that the disease is due to a streptococcal infection from focal sepsis elsewhere and probably is in the nature of a streptococcal embolism. It is just possible that acute nephritis in a new-born infant might be due to a septic focus in the mother, but the foetus is usually so well protected that this origin is unlikely.

FIG. 2.—This section does not show hæmorrhage but shows almost complete disintegration of the tubules, leaving only the nuclei and their debris visible. Other sections of hæmorrhagic areas seen in the photograph showed typical appearances.

Hurst⁸ gives instances of hereditary familial congenital hæmorrhagic nephritis, and Guthrie⁶ records cases. In such cases, however, there is a marked family history going through several generations and the condition is probably one of hematuria rather than of nephritis, and it may be an allergic condition. In one of Hurst's cases abnormal urine was discovered when the patient was only three weeks old.

It is interesting to note that the kidney swelling could be clearly palpated. It has been my experience in another case of acute nephritis in a young infant, to be able to palpate both kidneys as globular swellings about the size of a tangerine orange. In the early stage of an acute infection the kidneys are likely to be distended.

REFERENCES.

1. Aldrich, G. A., *J. Am. Med. Ass.*, Chicago, 1930, XCIV, 1637.
2. Ball, W. G., & Evans, G., '*Diseases of the Kidney*,' London, 1932, p. 211.
3. Cassell, *Berlin klin. Woch.*, Berlin, 1904, XLI, 558.
4. Copeman, W. S. C., *Clin. J.*, Lond., 1927, LVI, 166.
5. Griffith, J. P. C., & Mitchell, *Text book of Pediatrics*, London, II, 443.
6. Guthrie, L. G., *Lancet*, Lond., 1902, i, 1243.
7. Hanssen, *Deut. med. Wochnschr.*, Leipsic, 1926, LII, 1343.
8. Hurst, A. F., *Guy's Hospital Rep.*, Lond., 1923, LXXIII, 368.
9. Jacobi, A., *New York Med. J.*, N.Y., 1896, LXIII, i, 65.
10. Mensi, *Riv. clin. pediat.*, 1903, I, 505.
11. Paterson, D., & Wyllie, W. G., *Arch. Dis. Child.*, Lond., 1926, I, 103.
12. Weisswanger, & Rietschel, *Munch. med. Woch.*, Munich, 1909, LVI, i, 366.
13. Widakoivich, & Dutrey, *La Semana Med.*, B.A., 1918, XXV, 58.
14. Wyllie, W. G., & Moncrieff, A., *Lancet*, Lond., 1926, i, 128.