

Medical Memoranda

Bristle in the Heart

Brit. med. J., 1968, 4, 812

Septicaemia due to Gram-negative organisms is usually associated with infections of the urinary tract or bowel. They rarely cause endocarditis, a very uncommon condition in infants whatever the organism (Macaulay, 1954). Perforation of the heart by a foreign body is also most unusual in this age group, and mostly presents with haemopericardium, though endocarditis has been described (Barrett, 1950; Mathey and Binet, 1962).

CASE REPORT

A 1-year-old boy was admitted to hospital with a three-week history of general malaise, with episodes of crying, shivering, and apparent pain. He had become increasingly febrile, pale, and anorexic, with occasional vomiting.

On examination he was pale and ill. His temperature was 39.1° C. (102.4° F.) and heart rate 140/min. There was no jaundice or skin rash. A short apical systolic murmur was audible, but there was no evidence of congestive heart failure. The liver was enlarged to 5 cm. below the costal margin and the spleen was just palpable.

Investigations.—Hb 6.8 g./100 ml. (47%); W.B.C. 12,000/cu. mm. (neutrophils 60%, with a marked shift to the left); platelets 20,000/cu. mm. Blood culture produced a heavy growth of *Escherichia coli* and *Proteus mirabilis*. Gram-negative organisms were seen within the cytoplasm of the neutrophils. Urine examination showed no pyuria. Chest x-ray examination showed two rounded opacities in the right lower lobe, while the heart shadow appeared normal.

He was given a blood transfusion and chloramphenicol, but did not improve. Marked abdominal distension developed, with appar-

ently localized tenderness in the right upper quadrant, where there was some localized oedema. A subphrenic abscess was suspected, and a limited laparotomy was performed by Mr. V. A. J. Swain. Pus was not found, and the appendix appeared normal. The liver was somewhat enlarged, but there was no evidence of abscess formation. Liver biopsy showed no abnormality.

His condition deteriorated postoperatively with persistent fever, rigors, and increasing oedema. Purpura developed, and he bled from the operation wound. A pericardial rub developed, and he had a variable triple rhythm. E.C.G. showed inverted T waves in III and V6 and raised S-T in V2, 3, and 4. Immunoglobulins were in the normal range. Culture of the bone marrow and further blood cultures persistently produced heavy growths of *P. mirabilis* despite large doses of carbenicillin, gentamicin sulphate, and ampicillin.

No evidence of a pericardial effusion was obtained and chest x-ray film showed clearing of the original opacities. There was no evidence suggesting further embolism apart from purpura. Repeated blood transfusions were required and digoxin and diuretics were given. A short course of prednisone brought no improvement. He died seven weeks after the onset of illness.

Post-mortem examination showed purulent pericarditis and acute bacterial endocarditis of the tricuspid valve, large vegetations attached to the valve almost filling the right ventricle. Embedded in this fibrinous mass was a bristle of vegetable origin, about 5 cm. long, lying in an abscess track through the apex of the right ventricle, pericardium, and diaphragm (see Fig.). No definite site of perforation of the gastrointestinal tract could be detected, but the situation of the bristle suggested that it had passed through the stomach wall and thence into the heart. Bilateral pneumonia of embolic origin was present.

COMMENT

The child presumably swallowed the bristle, probably from a household brush, bearing the infecting organisms from the alimentary tract to the tricuspid valve.

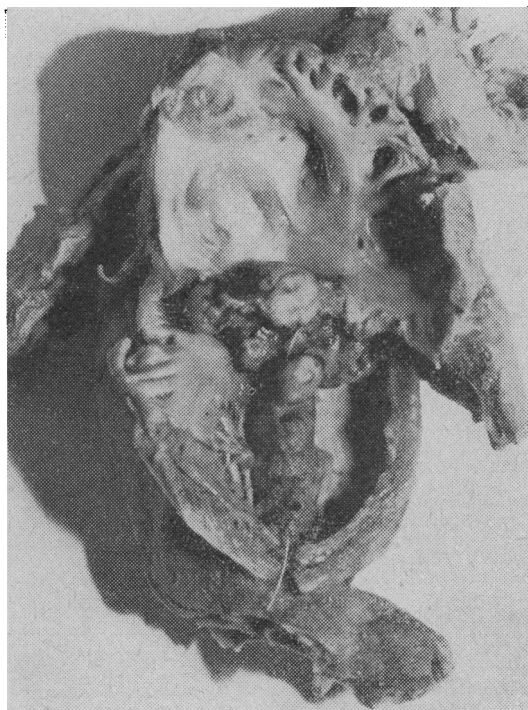
A comprehensive review of foreign bodies in the cardiovascular system (Barrett, 1950) did not include any cases quite like this. However, the case reported by Farber and Craig (1956) is not dissimilar. They described the case of a 21-month-old boy with a four-months history of persistent *E. coli* septicaemia despite massive antibiotic therapy. At necropsy a broom straw in the right atrium was the nidus of a large thrombus attached to the tricuspid valve. In neither this nor the present case was the presence of a foreign body in the heart as the focus of acute endocarditis suspected. Farber and Craig reported that invasion of the heart by a foreign body from the stomach is not uncommon in cattle, but it is extremely rare in the human.

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Right side of heart, showing track of bristle.