Gonococcal perihepatitis and gonococcaemia

Presentation of a case with cutaneous manifestations

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Gonococcal infections are usually localized to the urogenital tract, but may sometimes spread extra-genitally and cause cutaneous manifestations, arthritis, tenosynovitis, meningitis, endocarditis, or perihepatitis (Stajano, 1920; Bruusgaard and Thjøtta, 1925; Curtis, 1930; Fitz-Hugh, 1934; Williams, 1938; Abu-Nassar, Hill, Fred, and Yow, 1963; Keiser, Ruben, Wolinsky, and Kushner, 1968; Amman, Zehender, Jenny, and Bass, 1971; Förström, Mustakallio, Sivonen, and Kousa, 1972). Acute gonococcal perihepatitis has remained largely unrecognized despite its description by Stajano (1920) over 50 years ago. It was 'rediscovered' by Curtis (1930) and was also described by Fitz-Hugh (1934), and has since been called the Fitz-Hugh-Curtis syndrome. With one exception this syndrome has been described only in females (Kimball and Knee, 1970).

The case of a patient with concurrent gonococcal perihepatitis and cutaneous manifestations of gonococcaemia is presented below.

Case report

An 18-year-old schoolgirl had had right upper abdominal pain for 3 days before she was admitted to hospital. The pain had started after sexual intercourse, and the next day she began to have intermittent fever reaching 39°C., pain in the right wrist, knee, and calf, and erythematous patches and pustules on the extremities.

Examination

She looked pale and was in acute distress from abdominal pain, which was increased by deep breathing and movement. The right upper part of the abdomen was extremely tender on palpation. There was evidence of bilateral salpingitis with a pyosalpinx on the right side, but pelvic tenderness was less marked than in the right upper quadrant. Erythematous patches and papules with central pustular areas were found on the extremities, especially on the extensor surfaces (Figure). A biopsy of one such lesion showed a histopathological appearance

compatible with gonococcal dermatitis, *i.e.* acute inflammation in the upper dermis with destruction of capillaries, extravasation of erythrocytes and neutrophils, and perivascular lymphocytic infiltration. The patient complained of joint pain but no objective signs of polyarthritis were found. She was also infected with *Pediculosis pubis*.

FIGURE *Gonococcaemic lesion on the wrist*

Laboratory investigations

The white cell count was 5,500 and the erythrocyte sedimentation rate 53 mm./1st hr. Serum transaminases and total bilirubin were normal. Serum electrophoresis showed an increase in the α_2 -fraction. The urine was normal.

The gonococcal complement-fixation test was non-reactive on admission but 3 days later it was positive at a dilution of 1:10. Oxidase-positive, Gram-negative diplococci, fermenting dextrose but not maltose or sucrose, were isolated from the urethra and cervix but not from the rectum. Blood culture also revealed gonococci on an aerobic but not on an anaerobic medium.

The gonococci isolated were highly sensitive to antibiotics, being inhibited by 0.01 unit/ml. penicillin G, 0.1 μ g./ml. ampicillin, 0.4 μ g./ml. cephalixin, and

0.3 µg./ml. tetracycline. The VDRL slide test was non-reactive.

Radiographs of the chest and gall bladder showed no abnormality.

Therapy

Treatment was started with 12 m.u. benzyl penicillin intramuscularly daily for 3 days and continued with 2.4 m.u. procaine penicillin daily for 6 days.

Result

Considerable relief of the abdominal pain occurred within 24 hours and the patient was asymptomatic within 48 hours. Physical examination 10 days after starting treatment showed no signs of pelvic inflammation.

Comment

Gonococcal perihepatitis occurs chiefly in young females with a previous history of pelvic inflammatory disease, sometimes several years earlier. In some cases, however, the pelvic infection has been sub-clinical. The condition starts suddenly with a sharp pain in the right upper abdomen. The pain is exaggerated by deep breathing or coughing or by movements of the trunk, such as bending. Nausea is frequent but vomiting occurs less often. Fever is usually present (Stanley, 1946; Amman and others, 1971). Physical examination suggests acute cholecystitis, but other acute conditions, such as acute pyelonephritis, nephrolithiasis, pleurisy, hepatitis, perforated peptic ulcer, and subphrenic abscess, must be kept in mind. On the other hand, many cases of gonococcal perihepatitis are probably misdiagnosed as some of the above. The clinician must have good reason to suspect gonococcal infection in order to make the correct diagnosis. In our case the gonococcal nature of the condition was suggested by the skin signs. In some cases other evidence pointing to gonococcal infection, such as arthritis or tenosynovitis, may be present (Stanley, 1946), but the diagnosis should always be considered in cases of apparent acute cholecystitis in young women and the appropriate tests should be made.

Routine laboratory examinations may be of little help as in the present case. The white cell count and serum transaminase may show normal values. A chest X ray may reveal a slight pleural effusion (Stanley, 1946; Amman and others, 1971). The gall bladder may not be visualized in the acute stage, but the cholecystogram is normal later (Fitz-Hugh, 1934). *N. gonorrhoeae* can often be isolated from the urogenital tract. The patient described above seems to be the first case in which a positive blood culture has been reported. Kimball and Knee (1970) were able to culture gonococci from a liver biopsy specimen in their case.

As a residuum of the infection, 'violin-string' adhesions develop between the anterior surface of

the liver and the anterior abdominal wall. This type of adhesion is probably fairly common (Curtis, 1930) and is also often associated with gonococcal inflammation of the Fallopian tubes.

It is still uncertain how the infection reaches the subphrenic space. In most cases it probably spreads directly from the Fallopian tubes along the peritoneum between the pelvis and diaphragm. In some cases spread may occur *via* the retroperitoneal lymphatics (Kimball and Knee, 1970). In our case, signs of gonococcal perihepatitis and gonococcaemia appeared simultaneously. This seems more likely to be a coincidence rather than an indication that the perihepatitis was the result of gonococcal bacteraemia.

Summary

The case is reported of an 18-year-old girl with cutaneous manifestations of gonococcaemia and gonococcal perihepatitis, a rare complication of urogenital gonorrhoea. She was also found to have bilateral salpingitis and unilateral pyosalpinx. Gonococci were cultured from the urogenital tract and from the blood, and were highly sensitive to penicillin. Routine laboratory examinations were of no help in the diagnosis. Penicillin treatment proved to be highly effective.

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Péri-hépatite gonococcique et gonococcémie. Présentation d'un cas avec des manifestations cutanées

SOMMAIRE

On rapporte le cas d'une jeune fille de 18 ans présentant des manifestations de gonococcie et une péri-hépatite gonococcique, rare complication de la gonococcie urogénitale. On constata également chez elle une salpingite bilatérale et un pyo-salpinx unilatéral. Des gonocoques furent obtenus par culture dans les voies génitales et le sang et furent très sensibles à la pénicilline. Les examens de laboratoire courants n'aiderent pas au diagnostic. Le traitement par la pénicilline se montra très efficace.