

Short Reports

Staphylococcal Pelvic and Rectal Infection in a Neonate

B. L. Hammond and A. K. Poznanski

C. S. Mott Children's Hospital, University of Michigan Medical Center, Ann Arbor, Michigan, USA

Abstract. An infant with neonatal staphylococcal infection had evidence of pelvic inflammation, peritonitis and proctitis which resulted in narrowing of the rectosigmoid, uterectasis, pyelocaliectasis, and partial obstruction of the inferior vena cava. Appropriate treatment resulted in resolution of these findings.

Key words: Colitis – Proctitis – Staphylococcus – Pyelocaliectasis – Inferior vena cava obstruction

Staphylococcal infection of the rectum, colon, or small intestine is rare in the newborn and plain films are usually non-specific. A patient with a neonatal staphylococcal infection of the pelvis and lower colon presented with abdominal distention which led to radiographic studies. The appearance suggested an inflammatory mass which was confirmed at surgery.

Case Report

A nine day old infant developed pyoderma, diarrheal stools, fever, vomiting, dyspnea and lethargy. Intravenous therapy with aqueous penicillin G was initiated. Cultures of blood and of a pustule yielded growth of coagulase positive *Staphylococcus aureus*. Penicillin was stopped and intravenous methicillin and gentamicin were begun. An infiltrative process was noted in the right lung field. The infant's abdomen became distended on the tenth day of life and he was referred to C. S. Mott Children's Hospital for further evaluation. An inferior vena cavagram was performed as part of an excretory urogram and consisted of injection of 14 cc of Conray 60 into a superficial foot vein. The inferior vena cava was narrowed in the lumbar region with numerous collateral vessels in the anterior abdominal wall (Fig. 1). Some of these vessels could be seen on clinical examination. The intraarenal collecting system was not visualized until 20 minutes when moderate dilatation of the intra-renal collecting systems and ureters was noted. Three hours after injection, a dilated bladder was evident. Subsequently, Hypaque 25% was then injected through a rectal catheter, and there was

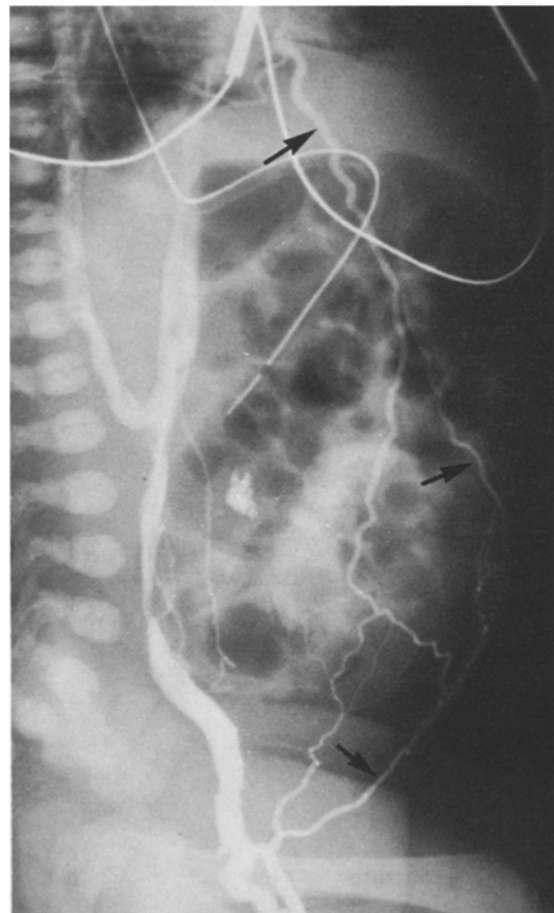


Fig. 1. Inferior vena cavagram performed by injection of a foot vein. There is narrowing of the inferior vena cava in the lower lumbar region. This appearance was also evident in the frontal projection. There are prominent collateral vessels over the anterior abdominal wall (arrows), these were also seen in the frontal view which was obtained at a different time than the lateral. This type of collateral circulation is different than that seen from increasing the abdominal pressure where it is usually perilumbar. Some contrast is seen in the abdomen from a previous colon study

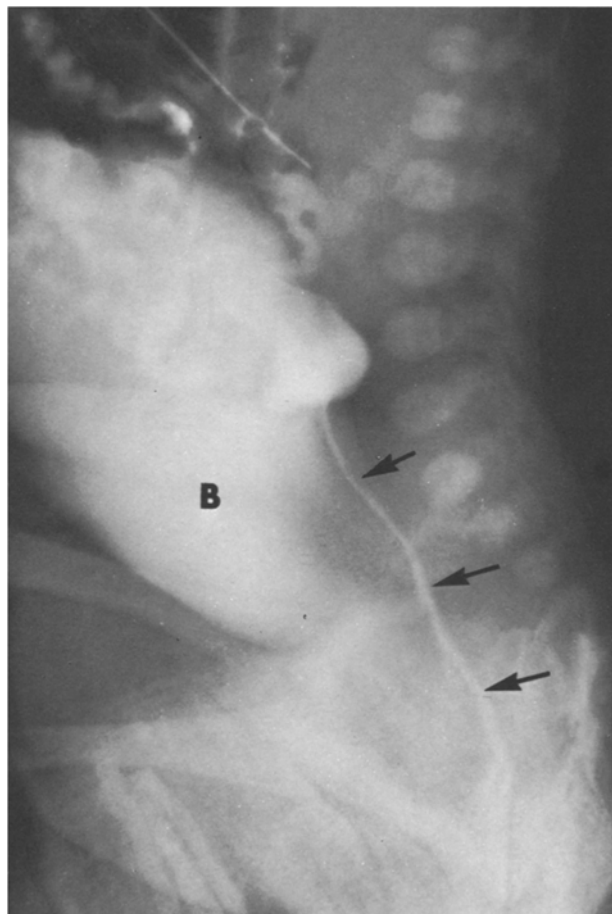


Fig. 2. Colon study – contrast medium was injected through a rectal tube. There is marked narrowing of the rectum and sigmoid which appears as a thin line (arrows). There is some impression on the posterior-inferior aspect of the urinary bladder (B) by the soft tissue components surrounding this narrowed colon. This appearance of the colon persisted on multiple views. The contrast in the bladder was from the previous excretory urogram

marked persistent narrowing of the rectosigmoid which was separated both from the bladder and from the sacrum. The narrowing extended to the level of the 5th lumbar vertebral body (Fig. 2). The urinary bladder was indented along its inferior and posterior border.

At eleven days, a transverse loop colostomy was performed. Although a catheter was placed in the bladder preoperatively, a cystic mass was palpated in the region of the bladder at surgery. Aspiration of the mass was not attempted. Culture of the peritoneal fluid showed a large growth of *Staphylococcus aureus*. Methicillin and gentamicin were continued and the infant improved. Follow-up Hypaque enema and excretory urogram twenty days later showed no abnormality, the mass effect in the pelvis had disappeared. The colostomy was closed at age ten months and the child has been followed for four years and has remained asymptomatic.

Discussion

Staphylococcal infection of the rectum or colon is rare in the newborn and is usually associated with epidemics in newborn nurseries or with indwelling feeding catheters [1]. Infants may present with severe vomiting, diarrhea, pyoderma, tetany and signs of sepsis and dehydration [2]. Radiographs of the abdomen may show complete absence of intestinal gas but this is certainly non-specific.

Caffey illustrates a patient with an inflammatory narrowing of the colon which is in appearance similar to our patient but there is no information given regarding culture or whether the inferior vena cava was affected [3].

Our case is unusual in that staphylococcal peritonitis is associated with a staphylococcal proctitis and an inflammatory mass in the pelvis which compressed the inferior vena cava and resulted in urinary obstruction. The urinary obstruction was due to either compression of the ureters and or the bladder neck by the mass. Obstruction of the bladder neck has been previously reported in association with appendiceal abscess and with benign and malignant neoplasms [4]. Narrowing of the rectosigmoid and an inferior vena cava obstruction from staphylococcal proctitis has not, to our knowledge, been previously reported.

References

1. Gutman, L. T., Idriss, Z. H., Gehlbach, S., Blackmon, L.: Neonatal staphylococcal enterocolitis: Association with indwelling feeding catheters and *S. aureus* colonization. *J. Pediatr.* **88**, 836 (1976)
2. Smith, R. T.: Epidemic staphylococcal gastroenteritis in a newborn nursery. *Am. J. Dis. Child.* **92**, 45 (1956)
3. Caffey, J.: *Pediatric x-ray diagnosis*, 6th ed., p. 701. Chicago: Year Book Medical Publishers, Inc. 1972
4. Howze, C. P., Jaeger, D. S.: Retention of urine in children due to extravascular pelvic disease: Report of two cases. *J. Urol.* **52**, 319 (1944)

Date of final acceptance: January 8, 1979

A. K. Poznanski, M. D.
Division of Pediatric Radiology
C. S. Mott Children's Hospital
University of Michigan Medical Center
Ann Arbor, MI 48109
USA