Ischemic appendicitis: Two pediatric cases of a dangerous entity

Claudia M. Mueller PhD, MD and Meredith Lahey NP

Division of Pediatric Surgery
Stanford University School of Medicine
Stanford, CA USA

Background and aims

Although appendicitis is usually no longer considered a true surgical emergency, it can still prove dangerous to children. Here we describe two pediatric cases of an unusual variant of appendicitis with grave consequences and discuss signs and symptoms which may help clinicians identify it.

Methods and Results

Two boys, aged 8 and 9 years, presented to an urban emergency room with several days' history of abdominal pain, fever, vomiting, and diarrhea. Both had elevated WBC and CRP as well as ultrasounds that showed evidence of appendicitis with a significant amount of free intraperitoneal fluid. Both were given iv antibiotics and taken to the OR for laparoscopic appendectomy. Intraoperatively, both appendices appeared ischemic without perforation, and the free fluid was hemorrhagic but not purulent. Laparoscopic appendectomies were performed without incident. Postoperatively, both boys developed evidence of profound sepsis within 12 hours of surgery in spite of continuous antibiotic treatment. One succumbed to his disease on POD1; the other recovered after massive volume resuscitation. Histological analysis confirmed acute suppurative appendicitis without perforation; microbiological analysis of intraperitoneal fluid and blood failed to identify any bacteria. PCR analysis of the appendices did not reveal any viral involvement.

Figure 2 Intraperitoneal hemorrhagic free fluid

Conclusions

We suggest that these two cases represent an unusual variant of appendicitis which results in a rapid septic reaction that is unresponsive to traditional antibiotic therapy. Hallmark features are a significant amount of free intraperitoneal fluid and ischemia of the appendix without perforation. Early recognition of this entity, close post-operative monitoring, and rapid fluid resuscitation are imperative in order to avoid fatal consequences.

Figure 1 Ischemic abdominal wall with hemorrhagic fluid

Figure 3 Nonperforated appendix with ischemic abdominal wall and hemorrhagic fluid