Surgical Peritonitis in Peritoneal Dialysis Patients: An Absence of (Radiological) Evidence is not Evidence of Its Absence

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To the Editor Mizuno et al. (1) are to be congratulated on not being deterred by nonspecific findings on abdominal computed tomography (CT) and on promptly proceeding to laparotomy in a peritoneal dialysis (PD) patient with cloudy effluent and evidence of polymicrobial infection. Perforated appendicitis was found and adequately treated, with a good clinical outcome.

In their otherwise comprehensive report, they missed two pertinent articles dealing with this diagnostic challenge. Faber and Yee expertedly reviewed the particularities of “abdominal catastrophe” in PD patients (2). One of their key messages is that even seasoned surgeons may misjudge clinical scenarios of this sort, with a potentially detrimental delay in laparotomy. They advocate close collaboration between nephrologists and surgeons.

Mizuno and colleagues are of course correct that CT generally performs well in diagnosing appendicitis. However, in the PD population, the picture is entirely different. In a chart review, Yehia and co-workers compared preoperative CT imaging results with the intraoperative findings in 12 patients undergoing laparotomy (3). In six, a drainable fluid collection was found, that was not previously noted on CT. Furthermore, they showed that surgery was typically delayed because of negative findings on CT. These authors concluded that “a negative CT scan should not lead to delays in important surgical intervention.”

In our own series of 140 peritonitis episodes in 153 PD patients, we observed anomalous peritonitis once in a 69-year-old man with vascular nephropathy. He was admitted with abdominal pain and cloudy effluent, but the initial dialysate cultures were negative. A CT scan performed four days later because of his unresponsiveness to antibiotics was reportedly without pathology. The patient’s condition deteriorated even after extending the antimicrobial therapy. On day 10, another CT scan showed changes highly suspicious of appendicitis. The patient was surgically treated immediately after that scan. Necrotizing appendicitis and diffuse peritonitis were found. Swab and dialysate cultures collected intraoperatively revealed polymicrobial infection at that time. Fortunately, the patient made a full recovery and could remain on PD. A recent report by Slovenian authors, however, showed that this situation may also end in fatality (4). Their patient died when laparotomy was performed with a delay of 11 days.

The tendency to overly rely on modern imaging technology has been criticized by renowned surgeons (5). Thus, based on Mizuno’s and our experience, surgical peritonitis should always be suspected in cases of polymicrobial infection. A quote ascribed to the late astronomer Carl Sagan, also well known in medicine, provides a succinct summary: “The absence of evidence is not the evidence of absence.”

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References