Images in Nephrology
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Radiological view of sclerosing peritonitis

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Sclerosing peritonitis

This is a rare condition characterized by thickening of the peritoneum in patients undergoing continuous ambulatory peritoneal dialysis (CAPD). The process starts gradually and presents with colicky abdominal pain, progressive loss of dialysis, and eventually bowel obstruction [1,2]. The earliest signs may be seen on ultrasound, with trilaminar thickening of the bowel wall, adhesion of bowel to the anterior abdominal wall and small bowel dilatation [3]. This can be accompanied by ascites after CAPD has ceased. Sampling may reveal clear, milky or blood-stained fluid.

The peritoneal thickening develops calcification, often starting as a small plaque which gradually becomes widespread [4]. This can be seen on a plain abdominal film and at an earlier stage by computerized tomography (CT). When obstruction occurs, the presence of the thickened calcified peritoneum makes laparotomy very difficult. By this stage the prognosis is poor, death occurring within a few months [5].

Sclerosing peritonitis was first reported in 1980, and complication by calcification in 1987. The differential diagnosis of the condition includes tuberculosis, peritoneal mesothelioma, and pseudomyxoma peritoneii in the adult, and meconium peritonitis in neonates. The cause of the condition is unknown but may be related to acetate buffer in the dialysate, recurrent infection, secondary hyperparathyroidism, or blood in the dialysate (more specifically ferric ions) [6].

CT is the most sensitive early test for calcification, while ultrasound shows the bowel wall thickening most clearly.

Suggested reading


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Fig. 1. Early calcification of pelvic peritoneum. Note marked vascular calcification.

Fig. 2. Same patient two years later with extensive peritoneal calcification. Note CAPD catheter now removed.

Fig. 3. CT scans at same stage as Fig. 2. Peritoneum surrounding bowel is calcified and small bowel fixed and dilated.