Clinical Notes

Spontaneous transuretero-ureterostomy after complete stenosis of an ileal conduit, with four years of conservative follow-up

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Abstract

Introduction: Stenosis of an ileal conduit is a rare complication of this urinary diversion. In the case described here, such a complication went unnoticed for some time, and put the patient in a high risk situation. After a bilateral nephrostomy was done, a spontaneous transuretero-ureterostomy was found.

Clinical case: A 70-year-old man with an ileal conduit performed 15 years before because of bladder tumor, was admitted with signs of severe intra-abdominal infection and oliguria. The imaging studies showed an intra-abdominal abscess, and an almost complete stenosis of the ileal conduit, which was conservatively treated with a bilateral percutaneous nephrostomy. After discharge, he reported an accidental fall of the right nephrostomy; normal urine amounts were collected from the single left nephrostomy. The presence of a spontaneous transuretero-ureterostomy was verified, with stenosis of the distal portion of the ileal conduit. Since then, the patient remains with the nephrostomy, which is periodically replaced, and after four years of follow-up he has no significant kidney deterioration.

Comment: The origin of this stenosis is attributed to inflammatory or immunologic changes induced by the chronic presence of the urine on the wall of the intestinal segment. This case is unique because of the curious result of an in situ transuretero-ureterostomy, and because of the long conservative follow-up in a patient who maintains a good quality of life.

Key words: ileal conduit, complications

Complete or partial stenosis of the ileal conduit is one of the most rare complications of this classic urinary diversion, which has become less common in the last few years due to the tendency to reconstruct continent orthotopic diversions whenever possible. This complication is not well known, and few cases have been described in literature; however, it is important because it may entail diagnostic and therapeutic difficulties, with a risk to the patient's life due to bilateral compromise of the kidneys or to the infections it generates. In the patient we present here, these circumstances were present, for the complication went unnoticed for some time at another Center, and put the patient in a life-threatening situation. A complete stenosis of the distal end of the ileal conduit was found, with the curious result of a spontaneous transuretero-ureterostomy; it was treated conservatively, with no significant complications after four-years of follow-up.

CLINICAL CASE

A 70-year-old male with a urinary diversion of the ileal conduit performed 15 years before due to a bladder tumor of unknown clinical stage, was admitted to the General Surgery Service with signs of severe intra-abdominal infection. A CT scan showed an intra-abdominal abscess which was treated with antibiotics for a few days; a definitive diagnosis was not reached. After being transferred to our Hospital with oligoanuria, kidney failure, and persistent signs of intra-abdominal infection, with an inflammatory plate in the right iliac fossa, the findings were bilateral hydronephrosis, urinary leakage in the area of the ileal conduit, which was responsible for the intra-abdominal infection, and a urinary fistula from the ileal conduit proximal to the distal ileum loops (Fig 1), as well as almost complete stenosis of the ileal conduit (Fig 2). The patient was
treated conservatively with bilateral nephrostomy, and he was discharged with antibiotic treatment to take at home. At the next visit a few days later, the patient reported the accidental fall of the right nephrostomy; normal urine amounts were collected from the only left nephrostomy. We verified the existence of a spontaneous transuretero-ureterostomy with stenosis of the distal portion of the ileal conduit (Fig 3 A). The patient was offered surgical treatment, with the options of constructing a new ileal conduit or reconverting to a transverse colon conduit; he rejected these options arguing that he was comfortable in his present condition. The patient remains with the nephrostomy (balloon catheter), which is replaced monthly, and the ileal conduit is non-functioning. In four years of follow-up the patient has not had significant kidney deterioration or other incidents (Fig 3 B).

**FIGURE 1.** Bilateral pyelogram through nephrostomy: complete stenosis of the conduit in the proximal portion (A), with intra-abdominal leakage of the contrast dye (B), responsible for the intra-abdominal infection and fistula that allows the filling of the distal ileum loops (C, CT image).

**FIGURE 2.** Loopogram: long, rosary-like stenosis of the conduit; there is no ureteral reflux. On the right, the ileal conduit contains a catheter and some air bubbles (arrows); there is oral contrast medium in the colon.
Comment:

The origin of the stenosis of the ileal conduit is not clear, but a critical role has been attributed to the inflammatory and immunologic changes induced by the chronic presence of urine and/or microorganisms in the intestinal segment; this would produce a long-term deterioration of the intestinal wall\textsuperscript{1-3}, with lesions predominantly in the mucosa and submucosa, which in more severe cases may be transmural. Chronic segmental intestinal ischemia due to atherosclerotic vascular disease does not seem to have an important role; however the case of chronic evolution stenosis presented here is similar to one caused by acute ischemia due to thrombotic infarction or by volvulus of the ileal mesentery, which develops with an acute anuric crisis\textsuperscript{4}. One of these forms of ischemia also seems to be the cause of the spontaneous ruptures of orthotopic diversions and bladder enlargement, a condition feared because of the subsequent peritonitis. The histologic study of these perforated intestinal segments have, in fact, shown the presence of vascular thrombosis and mural ischemic infarction, as well as atrophy of the muscular layer of the intestinal wall\textsuperscript{5}.

Although the symptoms and x-ray images of the stenosis of the ileal conduit may look typical, eventually it will be necessary to make a differential diagnosis (with the appropriate radiologic, endoscopic, and biopsy methods) with stenosis limited to the stoma, with other benign conditions with hydronephrosis, oliguria or anuria in a patient with urinary deviation\textsuperscript{6}, and with malignant complications, usually late, such as transitional cancer in the ureters, or cancer in the intestinal segment, which is less common.

The case described here is unique due to the spontaneous “in situ” transuretero-ureterostomy that followed the complete stenosis of the distal portion of the ileal conduit, a finding that, as far as we know, has never been recorded. Also noteworthy are the conservative treatment provided which avoided other options with a higher morbidity, and the long follow-up period during which no significant complications were found in a patient who maintains a good quality of life.
REFERENCES


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