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CASE REPORT

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An atypical post colonoscopy complication: bladder herniation

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Abstract

Colonoscopy is both a diagnostic and therapeutic procedure that allows examination and treatment of the rectum, colon, and the distal portion of the ileum. The risk of serious complications following colonoscopy is usually low. Hernial complications are rare after colonoscopy, and are probably promoted by an increased abdominal pressure and patient's physical constitution. Inguinal hernia usually includes intestine and not parts of the urinary tract. In literature there no studies reporting cases of bladder herniation after a colonoscopy procedure. We presented a case of an 84-years-old man admitted to our emergency department reporting scrotum edema after a colonoscopy procedure; the abdominal computerized tomography scan showed a bladder herniation through the inguinal canal into the scrotum. The hernia was not manually reducible and required surgical correction.

Keywords: *inguinal hernia, bladder herniation, testicular disease, hernia reduction, colonoscopy-related complications*

Case report

An 84-years-old man was admitted to our emergency department for rising scrotum edema after a colonoscopy procedure, executed the previous day; the patient referred persistent constipation during the last 72 hours. He had a history of hypertension, paroxysmal atrial fibrillation and sigma neoplasia. His therapy at home included iron supplementation, beta-blocker and theophylline. The patient was afebrile, slightly tachycardic (heart rate 100 bpm), with normal blood pressure (110/65 mmHg). Physical examination revealed a large right scrotal-inguinal hernia, sore at palpation but without any inflammation sign, a treatable abdomen. At the rectal exploration there were mixed-blood feces. The blood tests showed normal white cell count, mild anemia (hemoglobin 11.1 g/dL), normal platelet count, a modestly elevated blood urea nitrogen (46.2 mg/dL).

Further investigations and management

EAfter a first attempt of manual reduction, the hernial status was unchanged, so it was decided to further investigate it with an abdominal computerized tomography (CT) scan. The abdominal CT scan showed the known sigma neoplasia and a voluminous bladder herniation in the right inguinal seat, without enteral expansion above it. A bladder catheter was temporary placed to ensure optimal emptying and the patient was referred for surgical treatment. The patient underwent a hernial reduction surgery; during the procedure a voluminous hernial sack was found, with the bladder completely dislocated into it. After verifying bladder continence, the bladder was replaced in its natural position and the trasversalis fascia was reconstructed (Figures 1 and 2).

Figure 1. *CT examination of the bladder herniation.*

Figure 2. *CT examination of the bladder herniation, frontal scan.*

Discussion

Colonoscopy is both a diagnostic and therapeutic procedure and allows examination and treatment of the rectum, colon, and the distal portion of the ileum. The risk of serious complications following colonoscopy is low. In a review of 12 studies with 57,742 screening colonoscopies, serious harm occurred in 2.8 per 1000 examinations [1]. Over 85% of complications occurred in the setting of polypectomy. In a database collecting data of 2.3 million colonoscopies performed between 1997 and 2004, the overall rate of complications resulting in hospitalization was 1.98 per 1000 examinations [2]. A meta-analysis of 21 studies comprising nearly 2 million colonoscopies performed from 2001 to 2012, reported perforation in 0.5 per 1000 colonoscopies, post-procedural bleeding in 2.6 per 1000 colonoscopies and death in 2.9 per 100,000 colonoscopies [3]. The reported mortality rate related to colonoscopy is 0.007% [4].

The risk of colonoscopy is not constant across groups: older adults are at increased risk for serious complications compared with younger patients [5]. The risk of serious complications is also increased among patients with comorbid conditions such as previous stroke, chronic obstructive pulmonary disease, atrial fibrillation, and heart failure. Hernial complications are rare after colonoscopy, and are usually promoted by an increased abdominal pressure and by the patient's physical constitution.

A scrotal-inguinal hernia is a swelling due to the passage of a bowel through the inguinal canal; the leak can be limited to the inguinal canal or just outside it or it may reach the scrotum with a large resulting swelling. Possible differential diagnosis of a scrotal-inguinal hernia includes pathologies related to the testicle like hydrocele, varicocele, neoplasia and inguinal adenopathy. Patients with an acutely incarcerated inguinal hernia but without signs of strangulation, should undergo urgent surgical repair. Hernia reduction can be attempted in patients who wish to delay surgery. If hernia reduction is successful, a close follow-up should exclude recurrent incarceration. If manual reduction fails, it is indicated to urgently proceed to surgical treatment. The incidence of testicular complications in hernial diseases ranges from 0.3 to 7.2% [6]. Interference with blood supply to the testicle, typically resulting from the dissection of an indirect hernia from the cord structures (open or laparoscopic), can lead to testicular ischemia and atrophy [7,8]. Complications may also result from direct injury, extrinsic compression of cord structures, or a fibrotic reaction to polypropylene mesh. Transection or obstruction of the vas deferens, which can lead to ejaculatory problems, is of particular concern in young men [9].

To our knowledge, this is the first case in literature reporting an inguinal herniation of the entire bladder and there are no other cases of bladder herniation after a colonoscopy procedure.

In conclusion, inguinal hernias are possible surgical and post-procedural complications and need proper management. With the improvement of imaging techniques, even rare cases can be easily detected and managed with minimal complications.

Conclusion

Colonoscopy is a very common diagnostic and therapeutic procedure, with a low reported rate of serious complications. Hernial complications are rare after colonoscopy, probably promoted by an increased abdominal pressure. Scrotal-inguinal hernia usually includes portions of the gastrointestinal tract, while bladder herniation is more uncommon. We reported a rare case of complete bladder herniation through the inguinal canal and, to our knowledge; this is the first case in literature reporting a bladder herniation after a colonoscopy procedure.

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