Rectosigmoid carcinoma presenting as full-thickness rectal prolapse

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Abstract

A 34-year-old man with recent-onset constipation presented with colonic obstruction due to a palpable rectal tumour. Colostomy relieved the obstruction and biopsy revealed carcinoma. During workup, full-thickness rectal prolapse occurred with the tumour at the apex of an intussusception. Imaging revealed a low rectal tumour and no metastases. An abdominal oncological rather than perineal resection of the rectum was planned. At laparotomy, the tumour was reduced and was seen to originate at the rectosigmoid junction. Surgery was successful and follow-up has been clear. Histology revealed an adenocarcinoma with microsatellite instability. Rectal prolapse due to tumour intussusception is very rare. In this young man, it was due to straining at stool because of constipation and tenesmus rather than pelvic floor abnormality. An associated colorectal tumour should be considered in patients with rectal prolapse. In such cases, surgical and adjuvant management may need to be modified.

Background

Rectal prolapse or rectal procidentia in adults is full-thickness protrusion of the rectum through the anal orifice. It is a condition that is commonly treated by gastrointestinal surgeons. Prolapse occurs mainly in older women with laxity of the pelvic floor musculature and weakness of the anal sphincters.[1] There is no clear consensus regarding the actual pathophysiology of the condition. Brodén and Snellman, using cineradiography, demonstrated that prolapse was an intussusception of the rectal wall starting approximately 6–8 cm from the anal verge.[2] Constipation and chronic straining at defecation play a role in the development of prolapse. The incidence of a coexisting colorectal tumour in patients with rectal prolapse has been reported to be higher than in a control population.[3] The actual prolapse of a colorectal cancer presenting as full-thickness rectal prolapse is extremely rare and has only been described in a few case reports.[4–9] In such cases, the presence of a tumour may have a profound effect on the choice of a surgical procedure for rectal prolapse. Surgery and adjuvant therapy may have to be adapted to the individual circumstances.

We describe a case of a young man who presented initially as an obstructing rectal tumour, and later as rectal prolapse due to intussusception of the tumour.

Case presentation

A 34-year-old African man presented with constipation and intermittent red rectal bleeding for a few months. He had been taking laxatives intermittently but for the last few days was

unable to pass stools. He had no other complaints and apparently no comorbidities. There was no history of colorectal cancer in the family. The patient appeared to be a fit, healthy young man. Clinical examination was unremarkable except for the abdomen which was mildly distended and tympanic on percussion. On digital rectal examination, a firm tumour was palpable 6 cm from the anal verge. The tumour seemed to fill the whole lumen of the rectum.

A diagnosis of an obstructing rectal tumour was made. A transanal biopsy of the tumour was performed which later revealed adenocarcinoma. A diverting sigmoid colostomy was fashioned through a trephine incision in the left lower abdomen. This relieved the symptoms and further workup was commenced. Routine haematological and biochemical tests were normal. A CT scan (figure 1) revealed circumferential thickening of the rectal wall with rectoanal tumour prolapse. No lymph node or liver metastases or ascites were seen. MRI of the pelvis was performed for staging of the tumour (figure 2). This showed a T2 rectal tumour and small lymph nodes in the mesorectum.

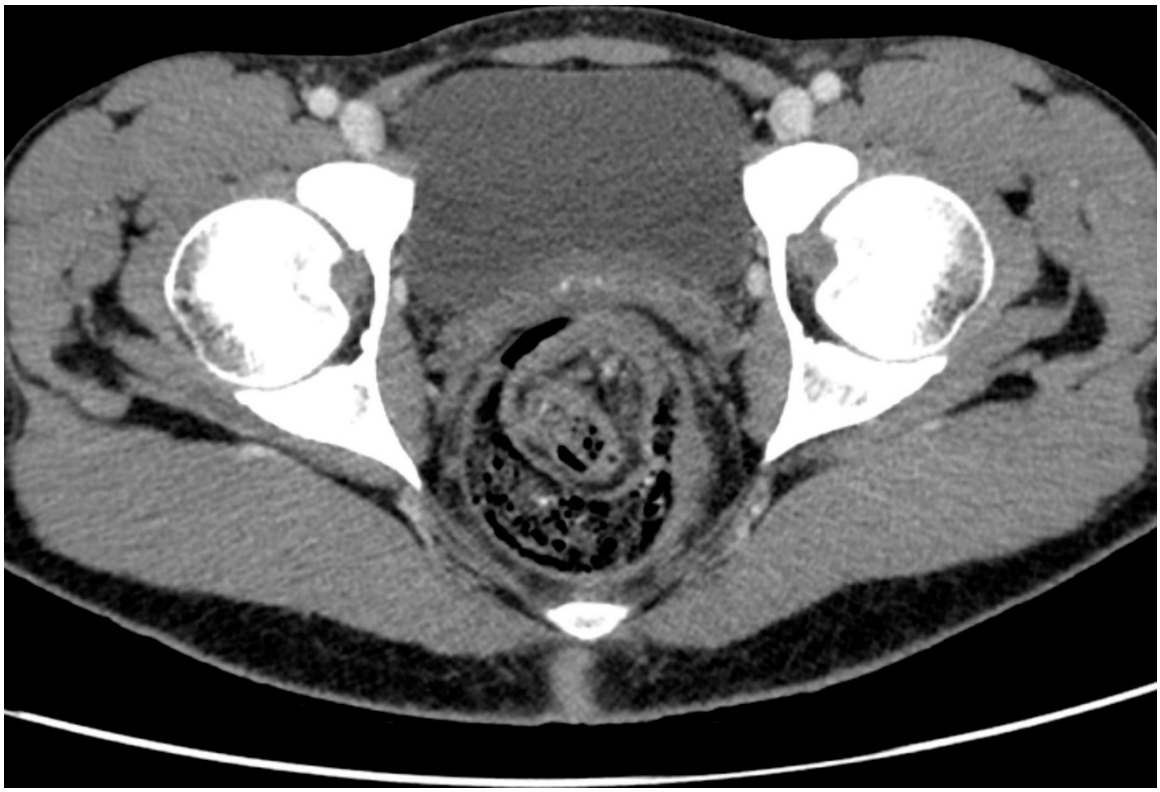

Figure 1. Transverse slice of a CT scan of the pelvis showing rectoanal prolapse with a tumour at the centre of the rectum.

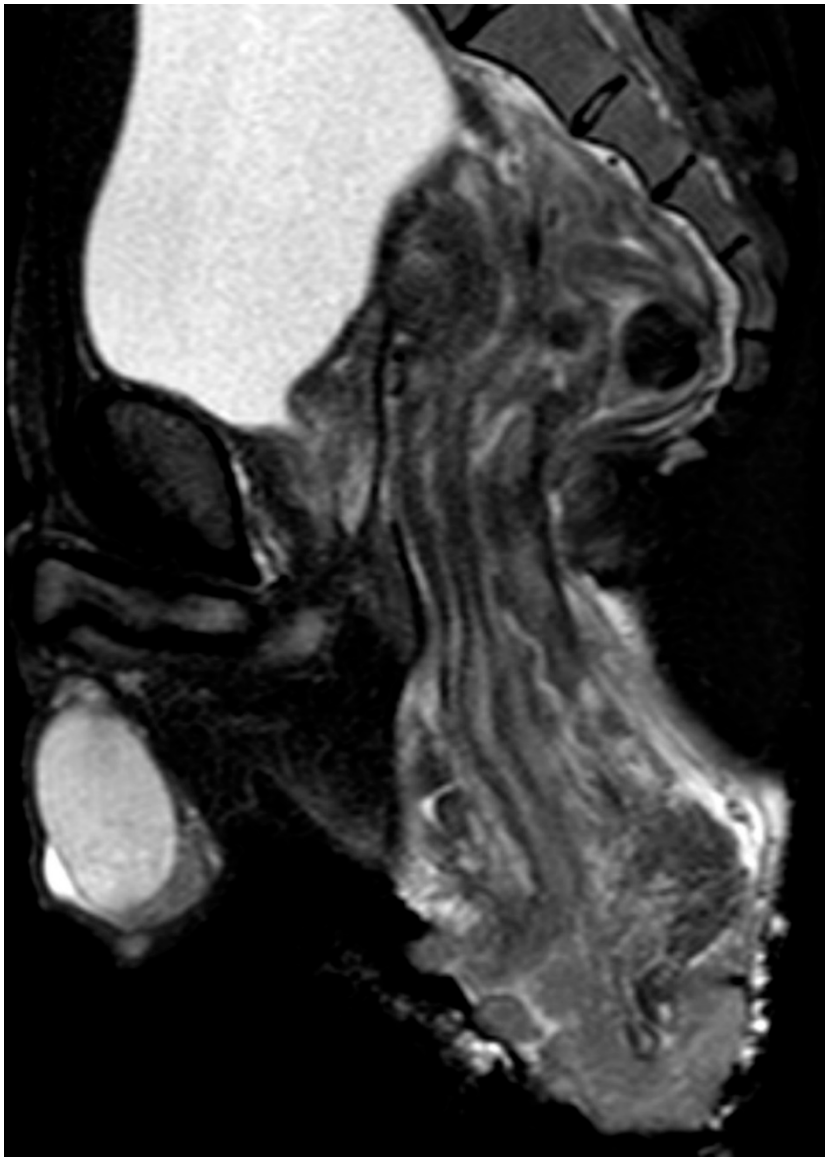

Figure 2. MRI scan of the anally prolapsed rectum with a tumour at the apex.

While awaiting surgical treatment, the patient presented with complete prolapse of the rectum and tumour through the anus (figure 3). It was clear that the tumour that had been palpated digitally and seen on imaging had now prolapsed through the anal orifice. The initial presentation was therefore that of an internal (occult) prolapse into the rectum by intussusception of a more proximal tumour. It was decided to perform an anterior resection in order to manage the prolapse and resect the tumour.

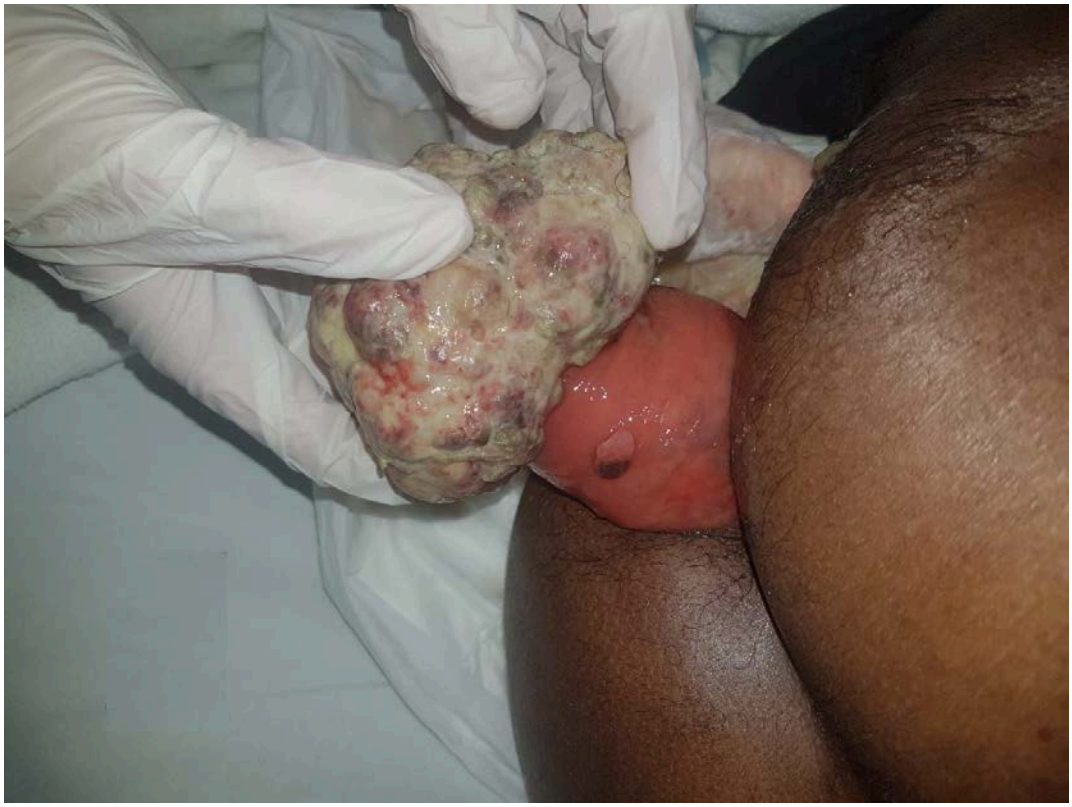

Figure 3. Photograph of the prolapsed rectum and tumour just before surgery.

Treatment

Under general anaesthesia and in the lithotomy position, the tumour was manually reduced through the anus into the pelvis. It was found at laparotomy to be originating at the rectosigmoid junction. Total mesorectal excision (TME) and sigmoidectomy were performed and the stoma taken down. The descending colon was anastomosed to the rectal stump. The postoperative course was uneventful and the patient was discharged on the fifth postoperative day. The histology report confirmed a moderately differentiated adenocarcinoma in which the tumour invaded the muscularis propria. There were no metastases in eight sectioned lymph nodes. Final staging was therefore T2N0M0 (stage 1). Adjuvant therapy was not administered to the patient.

Outcome and follow-up

The patient has been followed up regularly and does not show any recurrent disease.

Discussion

The prevalence of full-thickness rectal prolapse is estimated at 1/1000 of the population.[1] Colorectal tumours are not usually mentioned as a cause of prolapse. However, Rashid and Basson, in reviewing 70 cases of rectal prolapse, found 4 cases of non-protruding colorectal tumours.[3] They computed a relative risk of 4.18 for a concomitant tumour when compared with a matched group. The authors recommended that patients with rectal prolapse should

routinely have a flexible sigmoidoscopy as a minimum investigation to rule out colorectal cancer. They postulated that the predisposing factor may be straining as a result of an obstructing cancer. This is analogous to the known higher incidence of colorectal tumours in patients with inguinal hernias.

Tumours that are clearly situated in the rectum may prolapse through the anal canal because of proximity.[4,5] Tumours situated above the rectum may also lead to rectal prolapse due to intussusception of the tumour.[6,8,9] Intussusception of the bowel in adults is almost always associated with a pathological luminal lesion which acts as a lead point.[10] However, intussusception caused by a tumour that ultimately prolapses at the tip of the prolapsed bowel, as in this case, is rare. A case very similar to ours was reported by Chen *et al*.[7] Internal prolapse followed by full-thickness rectal prolapse together with a colonic tumour was diagnosed in an elderly woman presenting with colonic obstruction. An anterior resection was performed after reduction of the tumour. Cetinkaya *et al* reported a similar case of a rectosigmoid tumour that prolapsed through the anus in an elderly man with metastatic disease.[11] An Altemeier procedure of the prolapse and the tumour was performed for palliation, rather than an oncological procedure. The Altemeier procedure seemed to be a simple attractive option for our patient who had no distant metastases. However, a decision to do an abdominal oncological resection was thought to be more appropriate.

The association of cancer with rectal prolapse poses unique challenges. Both conditions need to be addressed effectively. Traditional perineal prolapse operations such as the Altemeier would not be appropriate because of the inability to do a proper oncological procedure. More recently, however, transanal resective procedures have been gaining popularity. Lacy *et al* reported on transanal TME for rectal cancer in 140 patients.[12] They achieved satisfactory pathological margins with 97% complete mesorectal excision. The international registry for this procedure reports an 85% complete TME in 720 patients.[13] However, no randomised studies comparing transanal TME and abdominal procedures have been published yet. In addition, appropriateness of transanal TME for cancer has recently been questioned because of an unexpectedly high local tumour recurrence rate.[14]

Transanal TME has not been tested in patients with classic rectal prolapse and an associated cancer. The procedure does not address the predisposing factors such a laxity of pelvic floor musculature and fasciae, or anterior compartment prolapse.

The current gold standard surgical treatment of rectal cancer is transabdominal TME. This is performed equally successfully by open and laparoscopic surgery.[15] However, neoadjuvant radiotherapy for T3 and T4 tumours would not be possible in case of rectal tumour prolapse because of mobility of the tumour and mesorectum. Postoperative adjuvant radiotherapy regimens may have to be considered. In addition, the abdominal procedures do not address the pelvis floor issues mentioned above. Pexy procedures would be inappropriate after removal of the rectum. However, colporrhaphy and levator muscle plasty may be conceivably combined with resection. It would be appropriate in these cases to also perform sigmoidectomy in previously constipated patients.[16] Fortunately neoadjuvant therapy and prolapse surgery were not required in the present case because of the early stage of the cancer and a normal pelvic floor.

In conclusion, colorectal cancers can predispose to rectal prolapse. Rarely a tumour may prolapse through the anus. A patient with rectal prolapse without predisposing factors should be investigated for a concomitant tumour. The association of rectal prolapse and cancer presents unique challenges. Both conditions need to be addressed and neoadjuvant therapy may have to be modified. A patient with a prolapsed cancer should undergo an abdominal resection as this offers oncological surgery with lymph node dissection.

Learning points

- Cancers or large adenomas can act as the lead point for an intussusception.
- If the lesion is in the rectum or sigmoid colon, the intussusception may present as/with a rectal prolapse.
- Management in such cases may require modification of standard surgical procedures and adjuvant therapy.
- Surgery may need to address the prolapse in addition to the cancer.

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