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Rectal invagination due to rectal carcinoma – case report

Intestinal invagination (intussusception) is a rare disease present most often in up to two year-old children. In literature different anatomical types of invagination are described: jejuneal, ileal, ileocecal, ileocolic, cecocolonic colotransversal, colosigmiodeal, sigmoideorectal, rectal and/or anal (2). Acute intussusception in adults is very rare and in the top of intussusceptum, polypus, papillomatous carcinoma, ileal (Meckel's) diverticulum, appendix or myxoglobulosis usually occur. They result in perystaltic movement stimulation and cause invagination. It may only occur if the muscular layer of the colon is not infiltrated and cancers with wall infiltration usually do not induce invagination. In adults, the ileocolic is the most common picture of intussusception caused by carcinoma of the cecum or inflamatory fibroid polyp of the ileum (5).

Rectal invagination with carcinoma is incidental. In the literature data, an obstructed defecation with chronic constipation is the most common reason for the intra-rectal and intra-anal intussusception. Sometimes it correlates with rectal prolapse (1,6). Very few papers describe occlusion caused by sigmoideo-rectal invagination with carcinoma (4).

CASE REPORT

A female patient N.J., aged 61 (evidence number 2409/02) was admitted to 2-nd Dept of Surgery, Medical University in Lublin on 14th of November 2002. In the medical history she complained of the constipation with nausea and the signs of three months lasting anal haemorrhage with fresh blood in the stool. In the *per rectum* examination a round infiltration with signs of cancer and with rectal stricture placed 4–5 cm from sphincter's line was found. The rectoscopy was performed and in the distance of 5 cm from anal sphincters a round infiltration was found. It caused rectal stricture without a possibility for the stool to pass over it. In the specimens in the histological evaluation the rectal gelatinous carcinoma was diagnosed. Abdominal computed tomography was performed and a big: 6.0 x 5.0 x 5.0-cm polypoid mass localised in the middle part of rectum was visualized. In the central part of the infiltration, the area with the density of the adipose tissue suggests rectal invagination into the mass. In the mesorectum, lymph nodes enlarged up to 1 cm were found (Fig.1). In the abdominal ultrasonography and X-ray chest examinations there were no signs of metastasis.

The patient was treated with neoadiuvant radiotherapy in a dose of 2500 cGy and with surgery afterwards. During the operation the rectal round shaped tumor localized 7–8 cm away from the external anal sphincter was dissected. It caused the invagination of the upper part of

Fig. 1. CT scan of invaginated rectal cancer (asterisk)

Fig. 2. The resected part of the rectum with invaginated tumor

Fig. 3. The invaginated tumor with incised rectum

the rectum and its infiltration with lumen stricture in the distance of 6–7 cm and the distant part of the rectum was shortened (evaluated in rectoscopy) (Fig. 2, 3). The anterior rectal resection with lymphadenectomy and end-to-end anastomosis with one-layer sutures were performed. Postoperative period was without any complication. The patient was discharged from department in a good condition eight days after surgery. In postoperative histological examination the carcinoma gelatinosum G3 was confirmed. The tumor was with 8 x 4.5 ulceration and with infiltration at the distance of 2.8 cm, and with lymph node metastasis.

DISCUSSION

In many patients with rectal invagination (RI) the rectal evacuation is incomplete. Prolonged unsuccessful straining in the presence of an intussusception, combined in some patients with hypertonic anal sphincter and pelvic floor responses to this straining, may result in traumatic or ischaemic rectal ulceration. This mechanism, named solitary rectal ulcer syndrome (SRUS), was described by Cruveilhier (3), and popularized by Madigan and Morson (10). Many but not all patients with SRUS have a coexisting internal rectal intussusception. In addition to this, it is combined with overt rectal prolapse in an estimated incidence of 6%–39% of all patients (14). An alternative explanation for the development of a SRUS, the repeated desire to defecate without doing so successfully, may result in the patient self-digitating and causing local trauma (13). In patients with RI differences were found in the thickness of the rectal wall, particularly in the muscularis propria, which was substantially thicker in patients with solitary rectal ulcer (9). Colorectal motility undoubtedly plays an important role in RI pathogenesis and some patients give a history of lifelong straining while others seem to have a degree of underlying irritable bowel syndrome. Pelvic outlet obstruction or pelvic floor dysfunction have been shown on videoproctography in 16% to 38% of the patients (8). Some patients with RI have reversed anorectal pressure gradients compared with normal controls and they may be susceptible to the subsequent development of a mucosal or external prolapse. Defaecating proctography is a useful method of diagnosis in patients with RI. The presence of

an internal intussusception in proctography is associated with the highest operative success rate (11). The resting anal pressure evaluation with manometric evidence of a function of the internal anal sphincter is very important in patients if the RI coexists with external prolapse and especially if there are faecal incontinence symptoms (7).

Management of these patients can be particularly difficult and should be restricted to dietary advice with fibre supplements, retraining of the musculature of the pelvic floor and the use of laxatives or suppositories for all but the most difficult cases (6). Operation should be reserved for those patients in whom medical treatment has failed and it may be expected to relieve symptoms in over two thirds of patients. Operation is the primary treatment of external prolapse and absence of intussusception in proctography should be a relative contraindication to the operation. Patients with prolonged evacuation times are a group at highest risk of not benefiting from the operation. The choice of surgical approach (transabdominal or perineal) should be tailored according to the expertise available, the medical condition of the patient and the presence or absence of pre-existing constipation or incontinence (6,7). The wide spectrum of surgical procedures from the rectopexy by the colostomy up to partial/subtotal colectomy or rectal resection can be used. The laparoscopical management has been considered, too. Acute intestinal occlusion caused by rectal invagination is not frequent. In the beginning, fluid intestinal contents are passed through the invagination area and the most important symptom is intermittant abdominal pain, often accompanied by abdominal tumor and hematochezia. In this case, RI leads to ileus with subsequent peritonitis (4,12).

In the case of our patient, she was admitted for surgical treatment as the symptoms of gastrointestinal bleeding, constipation and signs of hematemezia occurred. After diagnosing invagination with rectal cancer, she was treated with surgery combined with neoadjuvant radiotherapy and adiuvant chemotherapy (follow up – five months).

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SUMMARY

Rectal invagination has been considered an important cause of defecation difficulties and blockade (obstructed defecation). The most common the intra-rectal and intra-anal invagination is reported. In this paper authors present a case of a 61 year-old woman with intrarectal invagination due to 6.0-cm tumour localized in the rectum. The computed tomography and colonoscopy were performed for diagnosis of the rectal carcinoma. Histopatological analysis confirmed diagnosis. The patient was treated successfully with radiotherapy followed by rectal anterior resection with lymphadenectomy and adjuvant chemotherapy.

Przypadek wgłębienia odbytnicy z powodu raka

Wgłobienie odbytnicy głównie spowodowane jest zaburzeniami defekacji. Ma to miejsce najczęściej na podłożu obstrukcji i prowadzi do wgłobienia odbytniczo-odbytniczego lub odbytniczo-odbytowego. W pracy autorzy przedstawili przypadek 61-letniej chorej, u której doszło do wgłobienia odbytniczo-odbytniczego na podłożu 6.0 cm guza nowotworowego, potwierdzonego w badaniu histopatologicznym, umiejscowionego w bańce odbytnicy, uwidocznionego w badaniu kolonoskopowym oraz w tomografii komputerowej. Pacjentkę leczono chirurgicznie wraz ze skojarzoną radio- i chemioterapią.