

Mechanical ileus caused by a tablet of Tralgit SR 100 stuck in a stenotic rectum affected by carcinoma : case report and literature survey

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Abstract

A patient with an advanced carcinoma in the recto-sigmoidum was taken for urgent operation because of abdominal pain, significant distension of colon, clinical symptoms and radiological proofs of ileus. The cause of the complete obstruction of the proximal rectum which was significantly narrowed by a tumour was one tablet of Tralgit SR 100, which had been administered to the patient for 4 weeks after osteosynthesis of the right femur neck following fracture. According to the radiologist between 45 and 50 tablets of the medicament had been found in the digestive tract. The mechanical ileus was solved by operation according to Hartmann. This case has two aspects : 1) surgical – mechanical ileus resulting from a rare set of circumstances, and 2) pharmacological and metabolic – disorder of medicament absorption in the digestive tract. The cause of maldigestion (disorder of absorption) of the Tralgit tablets is further investigated. (*Acta gastroenterol. belg.*, 2011, 74, 564-566).

Key words : mechanical ileus, medicament maldigestion, large intestine, tablet.

Introduction

The causes of ileus of the distal digestive tract are most often colon tumours or adhesive ileus in the small intestine. Further causes of intestinal lumen obstruction can be foreign bodies, gallstones or phytobezoars. Published cases since the 1960s have proved that the intestinal obstruction can be rarely caused by tablets of a non-absorbed medicament both in the small and large intestine. For these obstructions, the terms “pseudo-bezoar” or “pharmacobezoar” (1) or, e.g., “nifedipine bezoar” (2), “pill bezoar” (3), etc. have been variously used in the specialist literature. Digestive tract obstruction is more often caused by a combination of a narrowed intestinal lumen caused by an inflammatory or tumour disease (1,4,5), and a stuck tablet conglomerate. The case of a tablet bezoar of Procardis XL in the small intestine simulating intestinal cystic pneumatosis was published by Kwon *et al.* (6). Other quoted drugs which have caused digestive tract obstruction are nifedipine (2,7), Procardia XL, Isocal and others (3,5,6,8). In connection with the use of modified-release tablets it is necessary to mention also extremely rare cases of intestinal obstruction caused by swallowing of a tablet in its blister packaging (9,10). It is known that some forms of slow-release tablets (analgesics) can reach the lower part of the digestive tract undigested. This situation has to be

taken into account when considering the effects on the patient's treatment. Under certain pathological conditions an undigested medicament can cause obstruction of the intestinal tract and the effect of the medicament – when not properly digested – can be diminished or even completely absent. It is not clear why in some patients the tablet is not digested and absorbed in the proximal jejunum at the latest. This case report seeks to draw attention to such conditions since they may occur more often than we would suppose. Hopefully it will also encourage further studies focused on (non)-digestion of perorally administered medicaments in clinical practice.

Case report

The patient P.N., aged 64, weight 74 kg, height 186 cm, BMI 21.4, blood pressure 131/75 mm Hg, pulse 81 per minute regular. He had not been treated for any chronic disease, but he used to be a heavy smoker (between 30 and 40 cigarettes a day for 40 year and now had been a non-smoker for about five years (stop-smoker).

The patient was admitted to hospital for urgent surgery due to obstruction of his digestive tract in the area of the proximal rectum. A month prior to this event he had undergone surgery on a femur neck fracture. Tralgit SR 100 tablets were administered as a painkiller, 2-3 tablets per oral (p.o.) daily. Warfarin Orion 5 mg was administered prophylactically, 1 tablet p.o. daily.

Before his current hospitalization the patient had been suffering for about 24 hours from persistent and intensifying abdominal pains of a spasmodic nature. The patient had no difficulty passing urine, but was suffering from the lack of appetite and was slightly hypohydrated. Blood count revealed no extraordinary data, but the faecal occult blood test was positive. There were faint sounds of peristalsis and palpation elicited no pain ; per

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Fig. 1. — Tralgit SR 100 tablet “sitting” in the constricted proximal rectum by cancer. A reconstruction of the ghost view (CT).

rectum there was no stool in the rectum and no blood on the finger.

Ultrasound examination of the abdomen was limited by a significant pneumatosis of the colon. The liver and the biliary system were within normal limits, as were other organs of the peritoneal and retroperitoneal area. There were traces of free liquid in the peritoneal cavity ; the colon was dilated by liquid and gas, and the small intestine dilated slightly in the area of ileus. A native abdominal picture in the upright position showed no pneumoperitoneum, but minor levels in the large intestine. CT examination of the digestive tract with contrast medium p.o. (Telebrix, Guerbert Roissy, France, 10 ml/ 750 ml of tea) proved stenosis of the recto-sigmoideum with a tumour of about 70 mm in length, with a tablet lodged in the proximal stenotic area (Fig. 1), and colon distension (7-90 mm) transiting to ileum distension (25-35 mm). More tablets were found in the caecum and other parts of the colon and small intestine (Fig. 2).

The patient was operated through a lower middle laparotomy and the previously described prestenotic dilation of the sigmoideum transiting to higher parts of the colon was confirmed. A significantly dilated caecum with partial deserozation due to distension was also found. Palpation confirmed a large quantity of tablets in the caecum. Desufflation of the colon was carried out by interruption at a distance of about 80 mm above the tumour (a well differentiated intestinal tubular adenocar-



Fig. 2. — Collection of the tablets in the caecum – the ghost view (CT).

cinoma partially necrotized, 23 examined lymphatic nodes- three of them were positive for the above-mentioned adenocarcinoma). Repair of the deserozated caecum was performed in two layers by resorbable sero-muscular stitches, followed by operation according to Hartmann. The rectal stump was closed in two layers. Sigmoidostomy was led out and stitched laterally to the left of the laparotomy and a stomic bag attached. In the postoperative period the patient started to take in food p.o. early, but because of his lack of appetite and hot weather parenteral nutrition was administered via a peripheral vein and the patient was encouraged to sip. Liquids ingested p.o. were adequate. Urination and excretion through the sigmoidostomy were within standards. Symptomatic therapy was administered parenterally when needed (prophylactic antibiotics for 5 days, analgesics, omeprazole, prokinetics). The operation wound healed soon per secundam, and outpatient treatment of the remaining small skin and subcutaneous defect was carried out.

Pharmacological consideration

Tralgit SR 100 tbl. (tramadol hydrochloride 100 mg) is an analgesic or anodyne with controlled release. The effector substance is incorporated into lipophilic non-coated matrices on a base of glycerol dibehenate. It is disintegrated by lipolysis, and under physiologic conditions in the gastrointestinal tract, it should be completely dissociated during passage of the small intestine. This medicament lowers attention and can have side effects which can affect the central nervous system, cardiovascular system and motility of the digestive tract. The complication we observed has to date not been published in the specialist literature. After p.o. administration more than 90 per cent is absorbed ; the slow-release form (SR) reaches maximum plasma concentration after 4-5 hours, is metabolised in the liver, and around 90 per cent of it is

Table 1. — Distribution of Tralgit SR 100 tablets in the bowels and the state of the parts of the intestine on the day of hospitalization

location of tablets	state of the organ	number of tablets
stomach	not dilated	0
duodenum	not dilated	0
jejunum	not dilated (distally to 20 mm)	contrast medium
ileum	dilated (to 35 mm)	2-3
caecum	dilated (to 80 mm)	around 35
ascendens	dilated (to 90 mm)	4
transversum	dilated (to 70 mm)	3
descendens	dilated (to 70 mm)	0
sigmoideum	dilated (do 70 mm)	2
rectum	stenotic (4-5 mm)	1

excreted in the urine, the remainder in the stool. It is absorbed in the proximal jejunum at the latest. In slow-release forms of medicaments it is possible that the effective substance is absorbed as intended, but the “shell” of the tablet may travel further through the digestive tract.

Discussion

The situation when a tablet of medicament causes complete obstruction of an already stenotic colon with rectal carcinoma is very rare. The cause of intestinal obstruction caused by tablets of medicaments is rarely presented in the specialist literature. Ileus caused by just one tablet in the aboral area of the large intestine has never been presented so far. The combination of an injury and its subsequent therapy with analgesics leading suddenly to ileus with until that time no clear clinical demonstration of developing rectal carcinoma is a rare coincidence. Such states can be solved by endoscopy (3, 9,10) or surgery (1). In our case only the classical surgical laparotomic method could be used since the large intestinal stenosis caused by the tumour created an obstruction for the endoscope. Besides the surgical problem it is necessary to address the question of medicament maldigestion both generally and in individual cases – whether the problem is of wider significance with respect to the quality and composition of the drugs, or is merely an individual case caused by a resorption disorder of the organism (7,8). It can be supposed that the problem of maldigestion of Tralgit SR tablets with the effectual substance (tramadol hydrochloride) controlled releasing is caused by lipophilic non-coated matrices features. This matrices can be non-absorbable in some non-physiologic conditions. The causes of this undesirable situation can be as follows : congenital bowel function disorder(s) of an individual patient or influence of some acute conditions on bowel function or both these reasons combined. The cause of maldigestion of the Tralgit SR tablets is further investigated now in co-operation with our clinical pharmacologists. Furthermore,

there is also the problem of differential diagnosis of lower dyspeptic disorders, since traumatogenic and post-operative states of a patient can give rise to problems similar to those of a developing tumour of the digestive tract. These are mainly hypohydration, risk of thromboembolic diseases and disorders in peristalsis, resorption, or defecation and colon gas release. Unlike the published cases (1,2,4,6) our patient suffered from ileus caused not by a bezoar but by just one tablet of a medicament whilst more of these tablets were found in the ileum and in oral parts of the large intestine (see Table 1).

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References

- SILBERGLEIT R., LEE D.C., Bowel obstruction and radiopaque vitamin B12 “pseudobezoar”. *Am. J. Emerg. Med.*, 1995, **13** : 112-113.
- JARRY J., SASSOUST G. A rare case of nifedipine bezoar. *Presse Med.*, 2008, **37** : 428-430.
- LIAN L., FAZIO V., SHEN B. Endoscopic treatment for pill bezoars after continent ileostomy. *Dig. Liver Dis.*, 2009, **41** : e26-28.
- SHAW A., REDDY M.S., YEUNG J., SEMERARAO D., LUND J.N., TIERNEY G.M. Barium enema : diagnosis and an unusual discovery. *Gut*, 2008, **57** : 827 and 849.
- HARRISON I. Impaction of ingested undissolved tablets proximal to carcinoma of hepatic flexure. *Am. Surg.*, 1973, **39** : 532-534.
- KWON H.Y., SCOTT R.L., MULLOY J.P. Small bowel Procardia XL tablet bezoar mimicking cystic pneumatosis intestinalis. *Abdom. Imaging*, 1996, **21** : 142-144.
- NEZABITOWSKI L.M., NGUYEN B.N., GUMS J.G. Extended-release nifedipine bezoar identified one year after discontinuation. *Ann. Pharmacother.*, 2000, **34** : 862-864.
- O'MALLEY J.A., FERRUCCI J.T. Jr, GOODGAME J.T. Jr. “Medication bezoar” intestinal obstruction by an isocal bezoar. Case report and review of the literature. *Gastrointest. Radiol.*, 1981, **6** : 141-144.
- GLASSBRENNER B., SCHWEITZER A., LUDOLPH T. A rare cause of sigmoid obstruction in a 77-year-old patient. *Endoscopy*, 2003, **35** : 886.
- STORR M. An unusual cause of azathioprine inefficacy. *Endoscopy*, 2006, **38** : E 61.