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*Bleeding from gastro-intestinal tract caused by benign tumours
of the small bowel*

Gastro-intestinal /G.I/ bleeding, especially upper G.I. bleeding is a frequent and very often dramatic event in surgical practice. In order to standardise and ensure adequacy of diagnostic and therapeutical procedures for this entity, the standards have been established. These are contained in the Recommendation of the State Surgeon General Team (14).

Less remembered are neoplasms which are difficult to diagnose as a source of small bowel bleeding. Neoplastic proliferative changes in the small bowel are rare. It is thought that several factors account for the lesser exposure of small bowel to formation of neoplasms. Fast intestinal passage, considerable capacity of digestive juices, extensive exfoliation of epithelium, high pH, presence of IgA immunoglobulins on surface of mucous membrane – all these have been mentioned (4,8).

There exists a number of benign neoplasms which manifest themselves with bleeding: glandular polyp and hematoma, adenoma of Brunner's glandulae, neuroma, fibroma, smooth-tissue myoma, lipoma, tumors of intestinum, eosinophilic granulomas (4,5,7,12,13). Primary malignant neoplasms of small bowel are few: carcinoma or lymphoma, sarcoma, carcinoid, Kaposi's sarcoma in AIDS patients. Metastatic tumours to the small bowel are only exceptionally met /9/. In case of bleeding from benign tumours of intestine, patients are subjected to a routine set of diagnostic procedures. These are gastrofiberoscopy, colonoscopy, double-contrast X-ray examination of upper and lower G.I. In some cases also angiography of coeliac trunk or scintiscanning may be indicated. These procedures are expensive and, though routinely performed, rarely lead to the correct preparative diagnosis. In some centers equipped with more sophisticated instruments diagnostic scope is widened with "push enteroscopy". Efficacy of this method is high and many patients are spared diagnostic laparotomy /9/. Unfortunately, all these procedures are prone to fail in large haemorrhages to alimentary tract and/or shock. These patients are usually submitted to emergency laparotomy after diagnostically negative endoscopy. In the absence of macroscopic lesions surgeon is then faced with therapeutical dilemma. It is strongly believed that introduction of intraoperative fiberoscopy resolves many such problems by revealing the source of bleeding, otherwise obscured to viewing or palpation (2, 9, 10).

There are three techniques of performing intraoperative fibero-optic endoscopy:

1. The "push enteroscopy" during the operation which enables viewing small bowel level without opening its lumen. Efficacy of this method is estimated to be about 80-90% (9). The basic drawback

of this technique is the high price of equipment.

2. Intraoperative fiberoscopy of G.I. tract with commonly attainable endoscopes: a duodenoscope and a colonoscope. The shortcomings of this method is inaccessibility of distal sections of intestine for exploration.

3. The third variety of intraoperative endoscopy is examination of G.I. lumen with a sterilised fiberoscope inserted through a direct opening of intestine (2, 3, 10). Through insertion of endoscope proximally and distally in relation to performed 2-3 incisions, the whole small intestine and the right part of colon can be examined.

The purpose of the work is presentation of three cases of massive haemorrhage from the G.I. tract caused by benign tumours of the small intestine. Diagnostic and decision-making procedures are presented. The technique is described and usefulness of the intraoperative endoscopy of the gastrointestinal tract is underlined as the method enabling identification of the source of bleeding in diagnostically difficult situations.

CASE NO. 1

A male, aged 60, a patient of the Nephrology and Dialisotherapy Department, (case history No. 12185/95), haemodialysed chronically because of renal insufficiency caused by polycystic degeneration, reported periodic discharge of pitchy excrement with which progressive anaemisation was observed, the repeated transfusions of erythrocyte mass was necessary. At this time the gastroduodenal tract endoscopic examination was performed three times at the whole length of an Olympus Q20 gastrofiberscope. No source of bleeding or blood traces in this section were found. Barium enema to the large bowel and fiberoscopy of the left part colon were also performed, but these examinations did not bring any essential information. The clotting system did not show any deviations from standard. The patient required continuous transfusions of the erythrocyte mass, in totalling over 10 units ml, therefore the diagnostic laparotomy was suggested, planning intraoperative endoscopy in case of difficulties with identification of the source of bleeding. The patient did not agree to the proposed procedure. A few days later he fainted in the bathroom, discharging by the rectum liquid haemolised blood and blood clots. He was urgently transferred to the operating theatre. After initial shock his blood pressure was established 160/100, Ht – 18%, Hb – 5.2 g %, and the patient was subjected to the urgent laparotomy. His abdominal cavity was opened with median incision. Sectional filling with blood of the small intestine was found and clot mass and blood filled the large intestine. Palpable and visual examination of the whole gastrointestinal tract was performed from the cardia to the rectum and macroscopic pathology which could be the reason of bleeding, was not found. The examination was made difficult by considerable lipomatosis of viscera. In this situation the intraoperative endoscopy of the gastrointestinal tract was decided to be done. A sterilised gastrofiberscope was inserted by a point opening in the jejunum done about 1 meter from the Treitz ligament. A fiberoscope was inserted without any difficulty to the vertical part of the duodenum, visualising there the head of a big polypus of a diameter of about 2 cm. Going further it was found that its base is in the final segment of the descending part. Because in the polypus's area there were no traces of blood, it appeared doubtful if it was the factual reason of bleeding. The endoscope was inserted by the existing incision in the jejunum in the distal direction exploring further about 1.5 meter of the jejunum and pathology was not found. Then the second incision was done in the small intestine in a distance of about 1 meter from the ileocaecal valve and insertion to explore through the endoscope proximally, then distally the whole small intestine and the right part of the colon. Other changes which can be the cause of bleeding, were not found. In this situation the polypus in the duodenum was considered to be the source of bleeding.

Incisions in the small intestine were closed with absorbable surgical sutures bilaminarily. The Kocher's manoeuvre, then duodenotomy on the descending part of the duodenum were done. A polypus was removed outside the small intestine lumen. The length of the polypus was about 8-10 cm, the base diameter about 0.5 cm, the head diameter about 2 cm. The polypus did not have macroscopic features of an adenoma. It was covered with mucous membrane of the duodenum, while several ulcerations were on its surface and there was a projecting blood vessel in one of them localised on the top. The polypus was cut out with a fragment of mucous membrane at the base. The membrane of the back wall was sewn, the duodenotomy was carefully closed bilaminarily. A Redon's suction drainage was placed in the duodenum area and a gastric tube was introduced to the stomach. The abdominal cavity was closed in a typical manner. In twenty-four hours after surgery the patient required haemodialysis because of increased level of potassium over 6.5 mmol/l. In the fourth post-operative day he was transferred to the Department of Nephrology, from which he was discharged on the twenty-fourth day with the wound healed correctly. The microscopic examination result from the removed lesion: Lipoma pendulum – No. 291549. The patient died five months later because of spontaneous cystoid kidney rupture which required nephrectomy at the Department of Urology. Recurrence of bleeding from the gastro-intestinal tract was not observed till the time of death.

CASE NO. 2

A female aged 74 admitted to the Department of Surgery, case history No. 23948/96, because of a considerable degree of weakness. She reported pitchy colour of excrements appearing for 5 days. In medical history there was diabetes regulated by a diet. Eight years earlier she stayed at another Department of Surgery because of similar symptoms. Endoscopy then performed did not reveal any source of bleeding. On admission the patient's condition was good, RR – 130/90, per-rectum-melaena. Laboratory investigations: Ht – 20%, Hb – 6.7g%, E – 2150000, L – 10000, urea – 62 mg%, glucose – 108 mg%. The endoscopic examination was done and no pathology was found in the reach of a gastrofiberscope. In order to normalise blood morphologic values 3 units of erythrocyte mass were transfused. Then ERCP was performed, but it brought no essential information. On the fifth day of hospitalisation when the dismissal to home was considered, again the bleeding episode took place with fainting and discharging by the rectum liquid hemolysed blood. The patient was qualified for the urgent laparotomy. The abdominal cavity was opened with median incision. There was extravasated blood in the small and the large intestine. During control of the gastro-intestinal tract in a distance of about 15cm from the Treitz's ligament there was found a proliferate lesion of the jejunum wall. It was in a form of a nodule – a diameter of about 2.5 cm, covered with serous membrane. The tumour was localised on the antimesenteric border of the intestine. A wedge-shape partial resection of the small intestine together with the nodule was performed. Assuming that finding the above-described change was not the cause of bleeding, before reconstruction of the continuity of the gastrointestinal tract, a sterilised gastrofiberscope was inserted to the proximal section retragradely coming-up to the stomach. No other pathology was revealed. The intestine was anastomosed the end to the end with two layers of absorbable surgical suture. Additionally a serous cyst of the left lobe of the liver was drained by cutting out its front wall (unroofing) with coagulation of its bottom. The abdominal cavity was closed in layers without drainages. Postoperative course was without any complications. She was discharged on the eighth day after the operation in good general conditions with the surgery wound healed out by first intention. The microscopic examination result: *Leyomyoma calcificans parietis intestini tenui. Excisio totalis*. The examination No. 380980. Three years' follow-up did not indicate any recurrence of bleeding from the gastrointestinal tract.

CASE NO. 3

A male 49 years old was hospitalised at the Department of Surgery in a district hospital because of considerable weakness and tarry stools. During two days 6 units of erythrocyte mass were transfused. The endoscopic examination was performed and no pathological lesions were found. Six days later he was admitted to our Department of Surgery, case history No. 17911/98. On admission the patient's condition was severe. He was pale with tendency to fainting in upright position. RR in rest was 125/75, pulse – 90/min. His abdomen was slack without painfulness and pathological resistance. The immediate endoscopic examination was performed, which once again did not find any abnormalities (standard Olympus Q20 fiberoscope). Further 6 units of erythrocyte mass were transfused, with improvement of the patient's general condition. However several hours after admission massive haemorrhage again took place with a shock and liquid blood by the rectum. The patient was subjected to the urgent laparotomy with eventual performance of intraoperative fiberoscopy. After opening of the abdominal cavity with median incision, control of the whole gastrointestinal tract was performed and a tumour of the intestine wall was found at the height of the proximal part of the small intestine. The tumour of about 5cm in diameter together with about 15 cm of the intestine was removed. A resected intestine revealed ulceration with protruding blood vessel on the intestine membrane.

It was considered to be efficient proof that the resected change is the source of bleeding and planned intraoperative endoscopy was withdrawn. The intestines were anastomosed the end to the end. The abdominal cavity was closed in layers without any drainage. The postoperative course was without complications. The patient was discharged on the eighth day after the operation with the wound healed out by first intention. The microscopic examination result: *Tumor stromalis fusocoellularis benignus intestini tenui. Excisio totalis*. No. 316514. One year follow-up after the surgery did not reveal any recurrence of bleeding.

DISCUSSION

All the presented patients underwent emergency surgery in the course of gastro-intestinal bleeding. The diagnosis was established during the laparotomy. Endoscopy was performed intraoperatively in two cases. It has enabled to detect difficult for palpation change in horizontal part of the duodenum in one case. In the third case it allowed for elimination of suspicion of accompanying change. The technique of the intraoperative endoscopic examination by minimal enterotomy allows examination of the whole G.I. tract. It enables to establish the source of bleeding in a firm way, which is essential in multifocal pathology. Prolongation of the surgery for time necessary for performing endoscopy – about 30 minutes, as well as additional opening of the G.I. tract lumen does not seem to have essential meaning for complications of postoperative course. The above described technique can also be helpful in control of entero-enterostomies, search for foreign bodies, intraoperative differential diagnosis of Leśniowski-Crohn disease. Two different histological types described by authors belong to typical benign tumours of the small intestine, and only exceptionally seems to be a tumour coming from the interstitium, as described in the third case.

CONCLUSIONS

While carrying out differential diagnosis of haemorrhage causes from the upper G.I. tract when there are no essential changes in the reach of a gastrofiberscope, it

should be remembered that there exist benign neoplasms of the horizontal part of the duodenum and the small intestine as well as other scarce reasons of bleeding localised in this area. In patients operated on in immediate course and/or without earlier established diagnosis it is recommended to perform the intraoperative endoscopy, which is a cheap and certain way of identifying the source of bleeding.

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SUMMARY

The paper discusses three cases of mass bleeding from the upper section of gastrointestinal tract caused by benign tumours of the small bowel. The technique of the intraoperative endoscopic

examination of gastrointestinal tract has been described. The authors stress the usefulness of this technique in the case when the source of bleeding is difficult to localise.

Krwawienie z przewodu pokarmowego spowodowane nowotworami łagodnymi jelita cienkiego

Przytoczono trzy przypadki masowego krwawienia z górnego odcinka przewodu pokarmowego, których przyczyną były łagodne nowotwory jelita cienkiego. Opisana została technika śródoperacyjnej endoskopii przewodu pokarmowego. Autorzy podkreślają użyteczność tej techniki wówczas, kiedy źródło krwawienia jest trudne do zlokalizowania.