Push Enteroscopy: Value and Diagnostic Yield

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Abstract

Objective:
To assess the value and diagnostic yield of push-type enteroscopy according to its indication.

Setting:
Gastroenterology and Hepatology Teaching Hospital- Baghdad.Design:
Retro-prospective study.

Method:
Between March 2002-Sep,2005 , 55 patients had been examin by pus -type entroscopy

Result:
33 were male,22 female , mean age were 33.3

Push-type enteroscopy, a recent method for investigating the small intestine, is currently undergoing assessment. Its diagnostic yield varies in the studies reported to date.

Methods:

Clinical records of patients examined by push type enteroscopy from March 2002 to September 2005 in the Gastroenterology and Hepatology teaching Hospital in Baghdad were reviewed regarding the demographic characteristics, indications, diagnostic yield and complications. Technique:Push-type enteroscopy was performed with Olympus SIF-100 videoenteroscope (220 cm in length). The upper route was used in all of the patients. The lower route was not used. Intravenous sedation (diazepam or midzolam (5mg) with or without pethidine (50mg) or tramadol) was used for all patients. Gastric overtube was not available. Progression along the small intestine was ensured by push-pull motions; helped if necessary by manual compression of the abdomen and changing the patient's position.

Results:

The group of patients consisted of 55 patients, 33 were male and 22 were female, with a mean age of 33.3 years (7-85 years).All of them already had OGD that are either normal or hadn't settle the patient's diagnosis.

Seven patients underwent colonoscopy that was either normal or failed to provide diagnosis.

The average procedure duration was 20 minutes. The jejunum was examined through mean length of 105cm (100210cm) from the incisor teeth. Examination of the jejunum was possible without complications in all patients except three who had obstructing lesions. Table 1 demonstrates the five groups of patients according to the clinical indication of the procedure. Chronic diarrhea was the indication for 24 patients. In this group 9 patients had normal enteroscopy results while for the remaining 15 enteroscopy reported various abnormalities. The search for a source for patent digestive bleeding is the indication in the second group that included 11 patients, five of them showed various abnormal enteroscopic findings while enteroscopy examinations were reported as normal for the remaining six patients.In the third group the indication was repeated vomiting. With exception of two patients with normal enteroscopy results, all of the remaining five patients had abnormal results.

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A group of six patients were subjected for enteroscopy because of abdominal pain among whom abnormalities were reported in three patients while no abnormal findings were reported in the last group of patients for whom enteroscopic examinations were carried

out for miscellaneous reasons (weight loss, recurrent intestinal obstruction relieved by medical treatment, foreign body ingestion, abdominal mass and celiac disease with recent constipation).Table 2 demonstrates the results of push type enteroscopy among patients with chronic diarrhea. It showed that enteroscopy was normal in nine patients. Lymphoma was the diagnosis in four patients and celiac disease related findings in another four patients. Intestinal polyps as a part of familial adenomatous polyposis coli syndrome and gastric bezoar were the diagnoses in two other patients.

Non specific endoscopic findings (mild erythema, mild edema, suspicion of thickened intestinal folds) are seen among five patients in whom histopathology demonstrated no significant pathology.

Table 3 show that among eleven patients in whom push enteroscopy was done in search for a source of patent digestive bleeding no abnormality was seen in 6 patients and enteroscopy reported as normal. Bleeding from ampulla of Vater, severe diffuse gastropathy, bleeding from cardia erosions, ulcerated Peutz-Jegher polyps and bleeding from a gastrojejunostomy stomal ulcer, each was the diagnosis in one patient. Table 4 shows that push enteroscopy was done for seven patients because of recurrent vomiting. It was normal in only two patients. Findings of tumor obstructing the DJ, external compression on the early

Table 1: indications for push type enteroscopy:

Indication	No. (%)	normal	abnormal
Unexplained chronic diarrhea	24	9	15(62.5%)
Unexplained Patent digestive bleeding	11	6	5(45.4%)
Repeated vomiting	7	2	5(71.4%)
Abdominal pain	6	3	3(50%)
Miscellaneous*	7	7	0
Total	55	27	28

*
(weight loss, recurrent intestinal obstruction relieved by medical treatment, foreign body ingestion, abdominal mass and celiac disease with recent constipation)

Table 2: Results of push-type enteroscopy for chronic diarrhea

Indication	No. (%)	normal	abnormal
Unexplained chronic diarrhea	24	9	15(62.5%)
Unexplained Patent digestive bleeding	11	6	5(45.4%)
Repeated vomiting	7	2	5(71.4%)
Abdominal pain	6	3	3(50%)
Miscellaneous*	7	7	0
Total	55	27	28

Table 3: Results of push-type enteroscopy in the exploration of unexplained digestive bleeding

Normal enteroscopy	6 (54.55%)
Bleeding from the ampulla of Vater	1 (9.1%)
Diffuse gastropathy	1 (9.1%)
Bleeding from cardia erosions	1 (9.1%)
Ulcerated Peutz-Jegher polyps in stomach and duodenum down to jejunum	1 (9.1%)
Stomal ulcer	1 (9.1%)
Total	11

Table 4: **Enteroscopic findings in patients with repeated vomiting**

Result of enteroscopy	No. of patients
Normal enteroscopy	2 (28.57%)
Tumor obstructing the duodenojejunal flexure	1 (14.29%)
External compression on the early jejunum	1 (14.29%)
Gastric polyps	1 (14.29%)
Dilated stomach and bowel	1 (14.29%)
Big hiatus hernia	1 (14.29%)
Total	7

Table 5: results of enteroscopy in patients with unexplained abdominal pain.

Result of enteroscopy	No. of patients
Normal enteroscopy	3 (50%)
Previously undiagnosed celiac disease	1 (16.67%)
Jejunocolic fistula	1 (16.67%)
Severe pangastropathy	1 (16.67%)
Total	6

Discussion:

With the use of sedation the procedure of enteroscopy was reasonably tolerable for all of our patients. Push-type enteroscopy is performed by most groups under light benzodiazepine sedation[16,26]. While B Landi et al[5] reported poor patient tolerance for the overtube introduction and the use of the double way (upper and lower) and prefer the routine use of intravenous propofol and they had reported higher mean depth of insertion beyond the ligament of Treitz. (a mean of 120 cm) while in our series the depth of insertion is reported as the distance from the incisor teeth .Gastrointestinal bleeding often remains unexplained after oesophagogastroduodenal endoscopy and colonoscopy. Barium transit of the small intestine, intestinal arteriography and scintigraphy are often disappointing in this indication [16,26,27,30-34]. In our study push enteroscopy identified lesions potentially responsible for bleeding in 45%, however all of these lesions were accessible for the gastroscope but were not condemned at time of OGD because the intermittent nature of bleeding in some of them or only considered potentially responsible of bleeding after the failure of push enteroscopy to identify more distal lesion. In Landi et al[5] series they identified previously undetected lesions of the upper and lower digestive tract (13% of cases). Push-type enteroscopy can identify lesions potentially responsible for bleeding in the small intestine in 18 to 50% of cases[16,26,27,30-34].

A higher yield (83%) has been reported by some workers[35]. Arteriovenous malformations are the most frequent lesions[26,30-32]. B Landi et al[5] series. Lesions of the small intestine were only found in 13% of cases. The discovery of ileal lesions by means of retrograde push-type enteroscopy, which was not practiced in our series, was rare in this indication (one case). Several factors may explain the differences in the diagnostic yield of push-type enteroscopy in the exploration of unexplained digestive bleeding in reported series[26,30-35]. (1) The length of small intestine examined differs according to whether a paediatric coloscope or an enteroscope is used, the latter sometimes being used by the upper route or both the upper and lower routes. (2) The study populations are not always comparable. (3) Arteriovenous malformations can be confused with traumatic lesions. (4) The potential responsibility of certain abnormalities is judged differently according to the authorfor example, diverticulitis in the small intestine.(5) The study populations can differ from one centre to another, especially with regard to the patients' ages and whether or not the centre specializes in the exploration of the small intestine[5]. Push-type enteroscopy has rarely been assessed in the aetiological diagnosis of abdominal pain or intractable recurrent vomiting[1-7]. In our series, six patients were explored for unexplained abdominal pain diagnosis achieved in three patients (50%)

while the remaining three had normal enteroscopy finding. In B Landi et al[5] series it was not useful, but in both studies there were relatively few patients examined. push enteroscopy was done for seven patients because of recurrent vomiting and abnormalities detected in five of them, in three patients there was intestinal obstruction in the other two patients there was a big hiatus hernia in one and severe H.pylori gastritis in the other. A barium meal is probably a more suitable first-line examination when a patient has clinical or radiological signs of partial obstruction of the small intestine[16]

.In 24 patients with chronic diarrhea subjected for enteroscopy in our series, a specific diagnosis was reached in nine of them (37.5%) two of these cases were accessible for the gastroscope. in addition it contributed positively to the workup of another four patients.

It has been suggested that enteroscopy can occasionally be useful in the aetiological diagnosis of unexplained chronic diarrhoea [16,27]. In most cases of diffuse abnormalities of the small intestine, the results of duodenal biopsies are similar to those of jejunal biopsies. However, the lesions can sometimes be heterogeneous and predominate in the proximal jejunum[16,27]. Indeed, jejunal biopsies allowed a diagnosis to be made in six out of 32 patients in two reported series, whereas duodenal biopsies were of little value[16,27]. This was also the case of three out of eight patients in B Landi et al[5]
series.

Conclusion:

1) Enteroscopy had no significant complications in our series.
2) Jejunal intubation was always possible unless there is an obstruction beforehand.
3) In our series enteroscopy was most helpful in the workup of patients with unexplained chronic diarrhea.
4) All of the identified causes of patent gastrointestinal bleeding in our series were accessible to the ordinary gastroscope.
5) Our sample was too small to promote judgment about the usefulness of push-type enteroscopy in the workup of patients with repeated vomiting and unexplained abdominal pain.

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