A prospective study of colonoscopic examination at al-kindy teaching hospital

*** Dr.Riyadh Mohammad Hassan** *M.B.Ch.B., C.A.B.S*

Abstract

Background: Fiber-optic endoscopy is an important investigation of the large intestine, whether or not the radiologist (barium enema) has discovered a lesion in the bowel. Colonoscopy affords a unique opportunity to direct visualization of entire colonic mucosa. At the same time, the physician can obtain biopsy specimens, remove polyps, and decompress volvuli. Most experienced endoscopists and well prepared patients can reach the cecum in over 90% of patients. If colonoscopy is properly performed, it has a low risk of complications, such as perforation and bleeding.

Methods: A total of 70 consecutive patients admitted to Endoscopy department at Al-Kindy Teaching hospital from September- 2008 to July-2009. Bowel preparation was achieved with Polyethylene glycol lavage solution and 165 cm Pentax colonoscope EC_3385FK 4.2 was used in all cases. All patients were not sedated or given any other medication

Results: Seventy colonoscopies were performed in this study. Forty of them were male and the rest were female. The mean age was 42 years ranging from 4 years to 85 years. The most common indication for colonoscopy was rectal bleeding (44%) Polyethylene glycol lavage solution was used in all patients for bowel preparation. All patients did not receive premedications. Complete colonoscopy examination was done in (12.8%) of patients, the most common cause of incomplete examination was poor bowel preparation (50%). No complications were reported.

Conclusions: Rectal bleeding was the most common indication for colonoscopy. Poor bowel preparation was the main cause of incomplete colonoscopy.

Key wards: Colonoscopy, large bowel, bleeding per rectum

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Introduction:

The first successful total colonoscopy using the ''fibreoptic coloscope'' was reported in 1966 by Overholt and Pollard[1]. The procedure is more sensitive than radiological imaging and offers a range of therapeutic options. However, colonoscopy is a difficult skill to master. The procedure is often painful. Over sedation, perforation, bleeding and procedure related death is the main complications. Procedure related death remain the most feared complications [2].

In spite of these complications, Colonoscopy remains the gold standard investigation for most colonic diseases [3, 4, 5]. Several studies had shown that implementation of a screening program reduces mortality from colorectal cancer in asymptomatic individuals [6,7]. However the number of incomplete examinations limits its usefulness especially in the investigation of suspected colonic malignancy where full examination of the bowel is mandatory. Completion rates vary widely from 55-98.8 %[8]. Colonoscopy affords a unique opportunity to visualize the entire colonic mucosa. At the same time, the physician can obtain biopsy specimens, remove polyps, and decompress volvuli. Most experienced endoscopists can reach the cecum in over 90% of patients if colonoscopy is performed [9]. Six large prospective studies reports complications following diagnostic and therapeutic colonoscopy [10]. Rex *et al* [11] found that the sensitivity of a single colonoscopy is about (90%-95%) for cancers and large adenomas, and 75% for polyps < 1 cm. In a recent systematic review, the detection rates for adenomas > 10 mm, adenomas 5 - 10 mm, and adenomas 1- 5 mm were 98%, 87%, and 74%, respectively [12].

The purpose of this prospective cross sectional study was to assess the indications, completion rate and complications of colonoscopy in Endoscopy unit at Al-Kindy Teaching Hospital.

Department of SurgeryAl-Kindy College of MedicineUniversity of Baghdad

Corespondence Address to : Dr.Riyadh M. Hassan _ E- mail: ems_alsamaraie@yahoo.com

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Methods:

A total of 70 consecutive patients admitted to endoscopy department at Al-Kindy Teaching hospital from September- 2008 to July-2009. Bowel preparation was achieved with Polyethylene glycol lavage solution and 165 cm Pentax colonoscope EC_3885FK 4.2 was used in all cases. No premeditations were used. Colonoscopies were conducted in a proper way with change of patient's position as required to facilitate advancement of colonoscope through the bowel. Complete colonoscopy ends by visualization of the cecum which was confirmed by identification of the ileo-caecal valve, triradiate fold and/or by performing terminal ileoscopy. Referral source, patient sex, previous surgery, indications for colonoscopy, causes of incomplete colonoscopy, complication were all reported in the patient records.

Statistical analysis was done by measurement of p value by the use of fisher exact test.

P value of <0.05 was regarded as significant.

Results:

Seventy colonoscopies were included in this study, 40 of them were males and 30 were females. Mean age was 42 years ranging from (4-85) years. Indications for colonoscopy were diagnostic in 95% of the patients and surveillance in 5% of cases. The most common indications for colonoscopy was rectal bleeding (44%), abdominal pain (21%), change in bowel habit (20%), diarrhea (10%), and for follow-up of patients with multiple familial polyposis or after polypectomy for follow up in (5%).

Complete colonoscopic examination was done in only 9 cases (12.86%).

Table-1- which shows that incomplete colonoscopy was reported in 61 (87.14%) of cases, 30 cases (49.18%) were due to poor bowel preparation, 22 cases (36.1%) was due to poor patient tolerance, looping is not reported as a cause for incomplete examination . The diagnosis was done in all patients Table-2 , shows that 21 (30%) of patients had colitis of undeterminant cause as shown in (figure-1-), 5 cases (7.1%) had polyp as shown in (figure- 2 -) and & 7(10%) of cases had diverticular disease as shown in (figure-3) no complication were reported .

Following complete colonoscopy 9 out of 10 cases (90%) found to have pathological lesions , while patients who underwent incomplete colonoscopic procedure 32 patients (52.45%) found to have pathological lesions inspite of incomplete examination. Out of 28 patients who were reexamined after good bowel preparation only 25(89.29%) patients were found to have pathological lesions and 3(10.71%) patients showed normal examination

table 3.

Discussion:

The potential of colonoscopy can only be realized if the procedure is completed safely with good visualization of the mucosa. Excellent bowel preparation is a prerequisite for good quality colonoscopy. Poor bowel preparation is associated with prolonged intubation time [13]. Bowel preparations usually include sodium phosphate (for example, Fleet), magnesium salts (for example, Picolax), or polyethylene glycol (for example, Klean prep). Sodium picosulphate also gave better bowel preparation [14], Sodium picosulphate was the most commonly used cleansing agent followed by polyethylene glycol[15]. In our study the patients used Polyethylene glycol lavage solution for bowel preparation.

Prior to colonoscopy, our patients did not receive any premeditation while other reports showed most patients had intravenous sedation and analgesia [16]. When combined sedation and analgesia is administered, pethidine should be injected before the benzodiazepine as this allows safer titration of the sedative drug [17].

The completion rate in our study was 12.8% while other results demonstrate the completion rate was 77.9% [18]. Improvement in the quality of bowel preparation would improve completion rates. In our study the completion rate was as low as 12.8% which mainly due to poor bowel preparation in 50% of cases of incomplete procedure. This study shows that the incomplete examination have decreased the diagnostic accuracy of colonoscopy in significant number of cases as incomplete procedure diagnose pathological lesions in 32 out of 60 patients (53.33%) while it diagnose pathological lesion in 9 out of 10 (90%) cases when the examination is complete. Reexamination of patients following good

bowel preparation increase the diagnostic accuracy of colonoscopy from 50.33% to almost 100%. There is little difference in the quality of currently available preparations, though patient compliance may be better with non-polyethylene glycol preparations, and in certain patient groups, for example the elderly, administering bowel preparation in hospital may improve compliance [19]. It is well recognized that colonoscopy is difficult in particular groups of patients. It tends to be more difficult in women due to a longer more tortuous colon [20], several studies also suggest that previous abdominal surgery, and especially abdominal hysterectomy, makes colonoscopy more difficult .in our study failure to reach the cecum and incomplete colonoscopy was reopted in 85.2% of cases, 50% were due to poor bowel preparation,35.2% was due to poor patient tolerance, looping is not reported as a cause for incomplete examination ,Colonoscopists reported failure to reach the caecum in 21% of cases. The commonest reasons for incomplete colonoscopy were patient discomfort (35.3%), looping (30.3%), and poor bowel preparation (19.8%). This higher rate of incomplete colonoscopy in our study was mainly due to poor bowel preparation.

There was considerable scope for addressing each of these complications. Patient discomfort and looping often reflect poor technique. Scrupulous attention to preparation should also reduce the number of failed procedures[15].

The most common indication for colonoscopy was lower gastrointestinal bleeding 30 (44%) of cases . Final diagnosis in 21 patients 62.5% was reached if early colonoscopy was done . It had been found that indeterminant colitis was found in 21 patients 30% while other study showed that polyps are the most frequent diagnosis (22.5%) [15]. No complications were reported in our study while other studies showed perforation in 0.2% [22].

Nowadays video capsule endoscopy had been attempted as a colorectal carcinoma screening modality instead of colonoscopy which is considered as noninvasive screening technique [23].

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Tables

Table -1- Causes of incomplete colonoscopy by age & gender

	Poor bowel preparation No. %	Obstructing disease No. %	Excess looping No. %	PatientsIntolerance No. %
Male	**20 28.5**	**0 0**	**0 0**	**15 21**
Female	**15 21**	**1 1.4**	**0 0**	**10 14.2**
All	**35 50**	**1 1.4**	**0 0**	**25 35.7**
Age>75years	**0 0**	**0 0**	**0 0**	**2 2.8**
Age<75years	**35 50**	**1 1.4**	**0 0**	**23 32.8**

Table -2- Colonoscopic diagnosis of lower gastrointestinal symptoms

Diagnosis	No.	%
Hemorrhoid	10	14.2
Polyp	5	7.1
Proctitis	6	8.5
Carcinoma	1	1.4
Indeterminate colitis	21	30
Ulcerative colitis	1	1.4
Fissure in ano	1	1.4
Diverticular disease	7	10
Normal	18	25.7

Table 3: show the association between completion rate of colonoscopic examination and the detection rate of pathological lesions in the colon

P value was statistically significant 0.038 (Fisher exact test).

colonoscopy	Positive pathology	Negative pathology	Total number	percentage
Complete	9	1	10	90%
Incomplete	32	28	60	53.33%

Figures

Figure -1- colonoscopy showed indeterminate colitis.

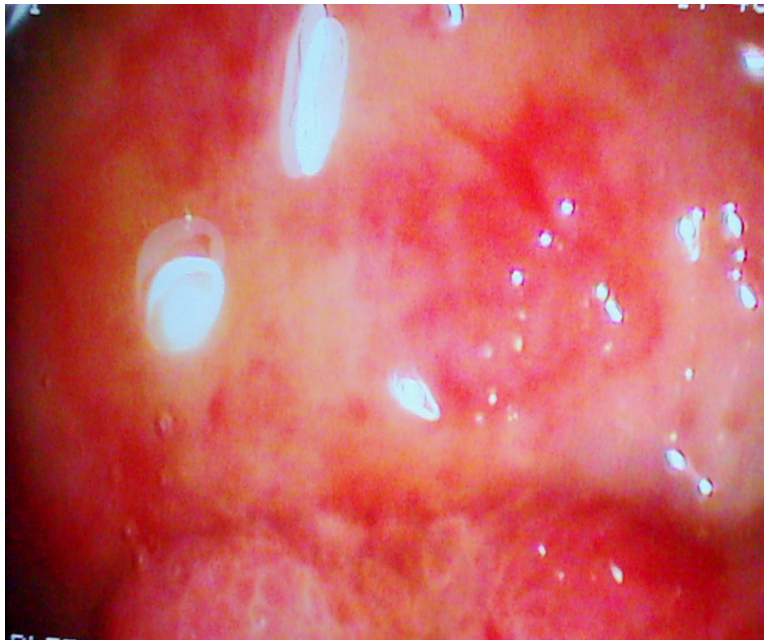


Figure -2- colonoscopy showed colonic polyp.

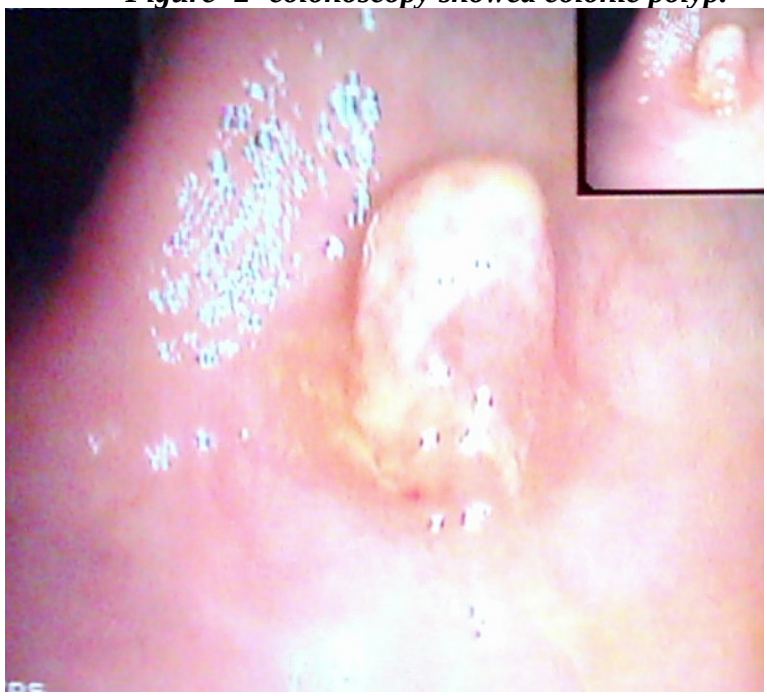
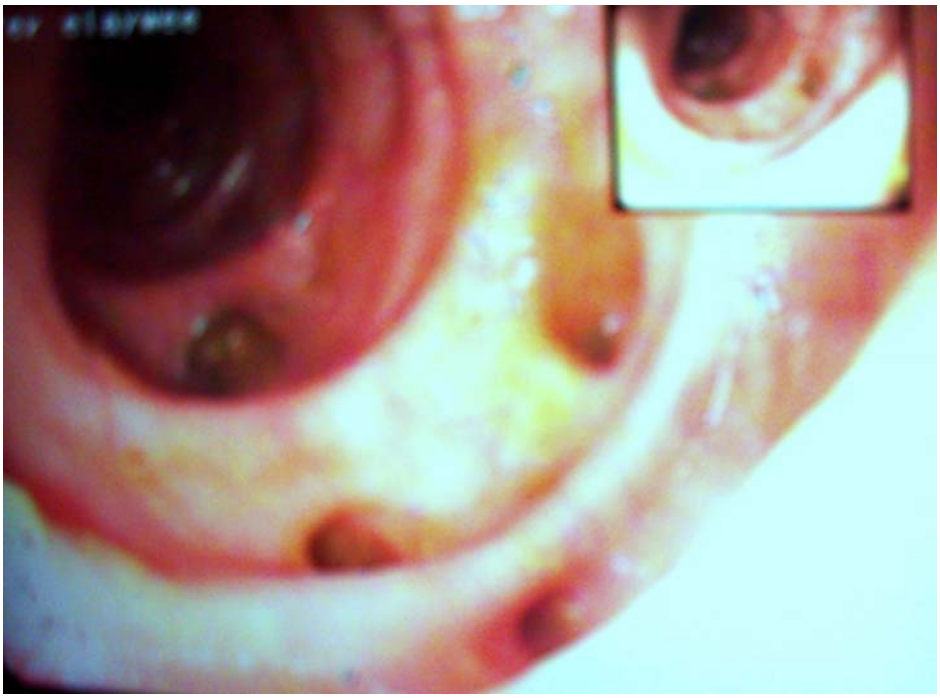


Figure-3- colonoscopy showed diverticular colitis.



دراسة نتائج فحص ناظور القولون في مستشفى الكندي التعليمي

الخلاصه :

خلفية البحث: تنظير القناة الهظمية وسيلة مهمة مِنْ وسائل فحص الامعاء الغليظةِ، سواء ابان الفحص الشعاعي الملون بمادة الباريوم اي أذى في الأمعاءِ ام لا. تنظير القولون يَوفر فرصة فريدة للنظرالمباشر لكامل الغشاء المخاطي للقولون. في نفس الوقت، يُمْكِنُ للطبيب أنْ يَحْصلَ على نماذج للفحصِ النسيجي،او يزيل سلائل من القولون، ويُفتح التواء القولون. معظم خبراء التنظير يمكنهم في معظم المرضى المُعدّون بشكل جيد جداً لعملية التنظير أنْ يكملوا الفحص الى الأعورَ في ٩٠ % مِنْ الحالات. إن تنظير القولون اذا اجري بشكل صحيح فان نسبة مضاعفات قليلة، مثل انثقاب القولون والنزف .

طرق البحث: تم فحص ٧٠ مريض في قسم تنظير الجهاز الهظمي في مستشفى الكندي التعليمي مِنْ سبتمبر/أيلول - ٢٠٠٨ إلى يوليو/تموز -٢٠٠٩. تم تحضير أمعاءِ المرضى بمسحوق (كولوكلين (polyethylene glycol) (وباستعمال جهاز تنظير القولون من نوع (Pentax EC_3385FK 4.2 ذي ١٦٥ سنتيمتر في كُلّ الحالاتِ. لَمْ يُعطى المرضى أيّ دواء او مسكن للالآم.

النَتائِج: تم اجراء عملية تنظير القولون لسبعين مريضا ادرجو ضمن الدراسة. أربعون منهم كَانوا من الذكور والبقية كَانوا من الاناث. كان متوسط اعمار المرضى ٤٢ سنة وتراوحت بين ٤ سَنَواتِ إلى ٨٥ سنةِ . كان الداعي الأكثر شيوعاً لتنظير القولون هو النزف من المستقيم (٤٤ %). تم استحدام مسحوق كولوكلين (polyethylene glycol) لتحضيرِ القولون لكل المرضى. لم يتم اعطاء اي مسكن أو أدوية مضادّة للتشنّج لكل المرضى.كانت عملية تنظير القولون كاملا في تسعة مرضى فقط (١٢.٨ %)،وكان السبب الرئيسي لعدم اتمام الفحص هو التحضيرَ السيئ للقولون (٥٠ %) . أخيراً، لم تحصل اي مضاعفات تذكر.

الإستنتاجات: كان نزف المستقيم كَانَ السبب الرئيسي لاجراء فحصِ تنظير القولون في مستشفى الكندي التعليمي. كان التحضيرِ السئ للقولون هو السبب الرئيسي لعدم اتمام الفحص والوصول الى الاعور.

الكلمات الرئيسية: ناظور القولون، أمعاء غليظة، نزف من المستقيم.