

VALUE OF DOUBLE CONTRAST BARIUM MEAL IN THE DIAGNOSIS OF UPPER GASTROINTESTINAL LESIONS.

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Abstract: The present study included 80 patients with upper gastrointestinal troubles. These patients were subjected to full history, clinical examination and routine investigations, also all of them were subjected to double contrast barium meal and endoscopy. The radiological and endoscopic findings were described in 80 patients, with upper gastrointestinal lesions in whom endoscopy has been requested by the radiologist to confirm or clarify a radiological opinion. There was radiological and endoscopic agreement about the diagnosis of these patients in 90%.

اهمية الاشعة بالتباين المزدوج فى تشخيص الاضطرابات الناتجة من امراض المريء والمعدة والاثنى عشر

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اجرى هذا البحث على ٨٠ حالة يعانون من اضطرابات فى الجزء العلوى من الجهاز الهضمى ويشمل ٥٠ ذكر و ٣٠ انثى اعمارهم بين ٢٠ و ٦٠ عاما .

وقد تم اجراء الفحوص المعملية اللازمة كما تم عمل اشعة بالتباين المزدوج (الباريوم والهواء) على المريء والمعدة والاثنى عشر كما تم فحصهم بالمنظار الخاص بالمريء والمعدة والاثنى عشر وتبين ان ٤٥ حالة طبيعية .

وتم تشخيص ٣٥ حالة بواسطة الاشعة بالتباين المزدوج وكذلك المنظار وكان التوافق فى التشخيص بالاشعة والمنظار يمثل حوالى ٩٠ ٪ من الحالات .

Introduction :

The upper gastrointestinal troubles are common complaint among wide variety of people of different age and sex .

Endoscopy is still one of the most useful techniques for diagnosis of upper gastrointestinal lesions .

Galfand and Hchia (1969) reported that the double contrast barium meal examination often demonstrates small gastrointestinal abnormalities especially mucosal irregularities like superficial gastric cancer not visible by conventional methods .

The present study was, therefore, undertaken to assess the usefulness of double contrast barium meal in the diagnosis of upper

gastrointestinal lesions and evaluation of mucosal pattern.

Patients and Methods:

The present study included 80 patients with upper gastrointestinal troubles. They were 30 females and 50 males. Their ages ranged from 20 - 60 years.

These patients were subjected to full history, clinical examination and routine investigations. Also, all of them were subjected to gastro-oesophagoscopy and double contrast barium meal.

Before the gastro-oesophagoscopy, the patient should fast for a period of 8-12 hours. Also, the patient should generally be sedated. A surface

active anaesthetic is applied to the throat by a spray nebulizer. With this preparation, the fibroscope passed with the patient sitting on left side. The instrument was guided over the cack of the tongue by left index finger and then asked to swallow. When the instrument was in oesophagus and then asked to swallow. When the instrument was in oesophagus which should be examined in detail during the initial introduction as well as later during withdrawal of the instrument. Then the instrument was steadily pushed into the stomach and duodenum to detect any lesion in them. In some of patients, endoscopic biopsy was done to confirm the diagnosis.

In patients who underwent surgery, the operative data were correlated with double contrast barium meal findings and endoscopic findings. The operative techniques included partial gastrectomy, truncal vagotomy with drainage operation, lower radical gastrectomy and splenectomy with devascularisation.

Technique of Double Contrast Barium Meal:

The barium used was barium sulphate powder which was less viscous and highly dense and in concentration of 500 gm for every 300 cc of water, 200 W/V. The effervescent agent used was gastrovison. Preparation of the patient was by just an overnight fasting. An intravenous injection of 20 mg of buscopan was given. After 5 minutes, the contents of the effervescent packet was given and swallowed with 5-10 ml. water, then we waited about 2 minutes for the gas to fill the stomach. The patient swallowed two glugs of the barium quickly and double contrast views of the oesophagus were obtained. The patient drank additional barium, and the patient turned onto the left, right and back. The quality of the mucosal coating was checked fluoroscopically, and if it was inadequate, further rotation was necessary. X-Ray films were taken in different positions for visualization of the fundus, body & antrum of the stomach and duodenal cap.

Results:

The predominant symptoms of these patients were epigastric pain, haematemesis, vomiting and dyspepsia. The clinical presentation was summarized in the Table (1).

Table (1): The clinical presentation of 80 patients with upper gastrointestinal troubles.

| No. of Patients | Clinical presentation | % |
|-----------------|--|--------|
| 30 | Chronic spigastric pain | 37.5 % |
| 15 | Chronic epigastric pain with nausea & vomiting | 18.75% |
| 5 | Haematemesis | 6.25% |
| 25 | Dyspepsia | 31.25% |
| 5 | Haematemesis & pain related to meal | 6.25% |

7 patients were found to have oesophageal varices after double contrast barium meal study Fig. (1).

There was radiological and endoscopic agreement about the diagnosis of 72 patients with upper gastrointestinal troubles (90%).

There was no abnormality detected in 45 patients after double contrast barium meal. The endoscopic findings confirmed with double contrast barium meal findings in all of them. Fig. (788).

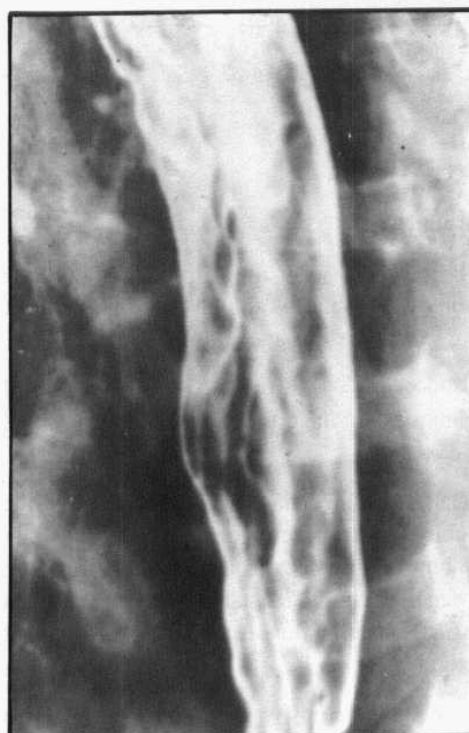


Fig. (1): Double contrast barium meal showing oesophageal varices

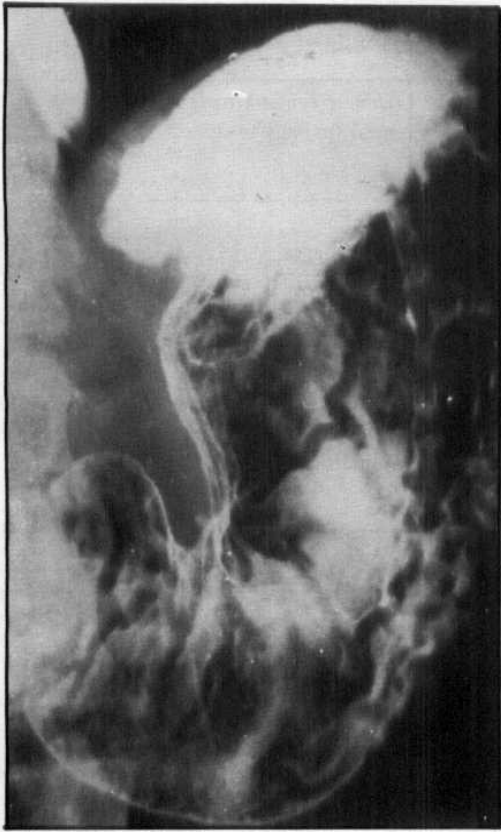


Fig. (2): Double contrast barium meal revealed Benign gastric ulcer in the lesser curvature.

Hiatus hernia was detected in 2 patients, oesophagitis in 5 patients, carcinoma of the stomach in 2 patients (Fig. 4 & 5), benign gastric ulcer in 2 patients (Fig. 2 & 3), gastric ulcer scar in 2 patients (Fig. 6), duodenitis in 3 patients and duodenal ulcer in 4 patients after double contrast barium meal examination (Fig. 9.).

The endoscopic findings confirmed the double contrast barium meal in all of them. In 3 patients, there was radiological doubt as to the presence of oesophagitis at endoscopy it was thought to be oesophagitis in all of them. In one patient, there was radiological doubt as to whether the gastric ulcer was benign or malignant. The diagnosis of this patient proved to be benign after endoscopic examination with biopsy. In 3 patients, there was doubt as to the presence of

duodenitis at endoscopic examination with biopsy it was thought to be duodenitis in all of them.

In one patient, a duodenal ulcer was seen endoscopically that had not been demonstrated at double contrast barium meal.

17 patients of the whole series were operated upon. The operative technique included; partial gastrectomy in 3 patients of gastric ulcer, truncal vagotomy with drainage operation in 5 patients of duodenal ulcer, lower radical gastrectomy in 2 patients of gastric carcinoma and splenectomy with devascularization in 7 patients with oesophageal varices.

The operative findings confirmed the endoscopic findings in all of them and double air contrast barium meal in 14 patients.

The results were summarized in the Tables II, III & IV.



Fig. (3): Double contrast barium meal showing benign ulcer posterior wall of the stomach

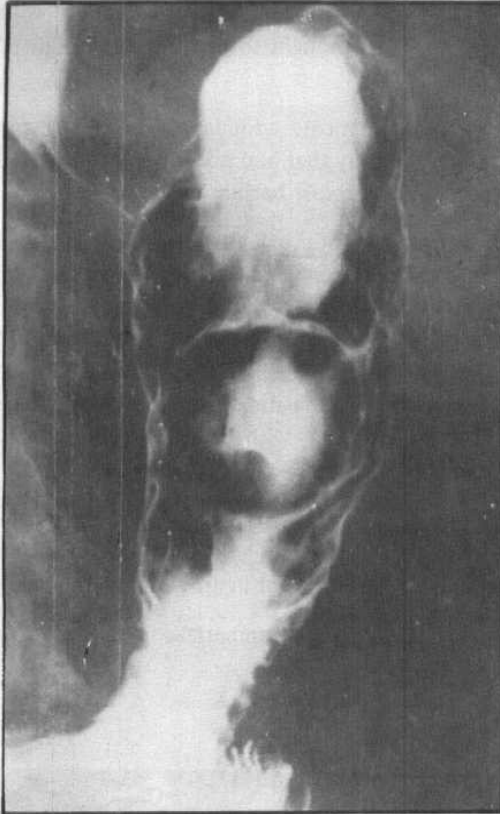


Fig. (4): Double contrast barium meal revealed cancer body of the stomach.

Table (II): Comparison between double contrast barium meal & endoscopic examination of 80 patients with upper gastrointestinal troubles.

| No. of Patients | Double contrast barium meal | Endoscopy |
|-----------------|-----------------------------|----------------------|
| 45 | Free | Free |
| 7 | Oesophageal varices | Oesophageal varices |
| 2 | Hiatus hernia | Hiatus hernia |
| 5 | Oesophagitis | Oesophagitis |
| 3 | Free | Oesophagitis |
| 2 | Cancer stomach | Cancer stomach |
| 2 | Benign gastric ulcer | Benign gastric ulcer |
| 2 | Gastric ulcer scar | gastric ulcer scar |
| 1 | Benign gastric ulcer | Benign gastric ulcer |
| 3 | Doudenitis | Duodenitis |
| 3 | Free | Doudenitis |
| 4 | Doudenal ulcer | Doudenal ulcer |
| 1 | Free | Doudenal ulcer |

Table (III): Double contrast barium meal findings of 80 patients with upper gastrointestinal troubles.

| No. of Patients | Double contrast barium meal findings | % |
|-----------------|--------------------------------------|-----|
| 52 | Free | 90% |
| 7 | Oesophageal varices | |
| 2 | Hiatus hernia | |
| 5 | Oesophagitis | |
| 2 | Cancer stomach | |
| 2 | Benign gastric ulcer | |
| 2 | Gastric ulcer scar | |
| 1 | ? Benign gastric ulcer | |
| 3 | Doudenitis | |
| 4 | Doudenal ulcer | |
| 80 | | |



Fig. (5): Double contrast barium meal showing cancer antrum of the stomach.

Table (IV): Endoscopic findings in 80 patients with upper gastrointestinal troubles.

| No. of patients | Endoscopic findings | Accuracy |
|-----------------|----------------------|----------|
| 45 | Free | 100% |
| 7 | Oesophageal varices | |
| 8 | Oesophagitis | |
| 2 | Cancer stomach | |
| 3 | Benign gastric ulcer | |
| 2 | Gastric ulcer scar | |
| 6 | Doudenitis | |
| 5 | Doudenal ulcer | |

80



Fig. (6): Double contrast barium meal showing malignant ulcer stomach (anterior wall of the body).

Discussion:

In the present study, there was radiological and endoscopic agreement about the diagnosis of 72 patients of whole series (90%).

Laufer (1976) reported that, in a review of 1500 consecutive double contrast barium meal examination of whom 225 had also been examined by endoscopy, he stressed that correlation with endoscopy was of particular value in assessing the finer points of

interpretation. In the same paper, he also demonstrated that when the radiologist was confident of his diagnosis there was almost 100% correlation with endoscopy, but when the radiologist was in doubt an error that approaching 25% could be expected.

In this study, there was radiological and endoscopic agreement about the presence of oesophagitis in 5 patients out of 8 (72 . 5 %) This compared with an agreement in 60 % of cases obtained by Ott et al (1981) and Fraser & Earnshaw (1983) found that there was radiological and endoscopic agreement about the presence or absence of oesophagitis in 32 out of 44 (73 %).



Fig. (7): Endoscopic picture of the cancer stomach.



Fig. (8): Endoscopic picture of the chronic duodenal ulcer, with evidence of fibrosis.

In the present study, there was endoscopic and radiological agreement about the diagnosis of 7 patients of oesophageal varices (100%) and 2 patients of hiatus hernia (100%). There is an agreement about the diagnosis of oesophageal varices and hiatus hernia in 85% of cases obtained by Ott et al (1981).

In this study, there was radiological and endoscopic agreement about the presence of

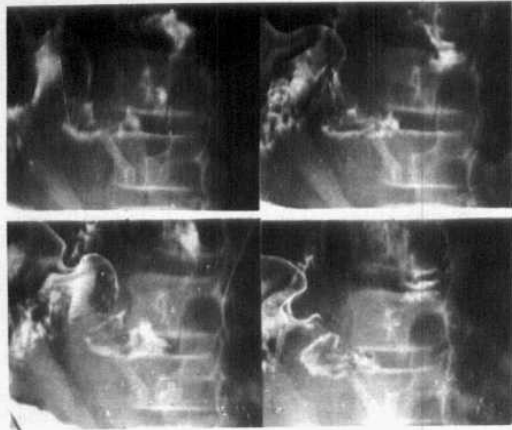


Fig. (9): Double contrast barium meal showing chronic duodenal ulcer.

benign gastric ulcer in 2 patients out of 3 (66,3%). In one patient, there was radiological doubt as to whether the gastric ulcer was benign or malignant. The diagnosis of this patient proved to be benign after endoscopic examination with biopsy. Also, there was radiological and endoscopic agreement about the presence of gastric scar in 2 patients (100%).

In study done by Fraser and Earnshaw (1983), fifty five patients had a gastric ulcer, and of these 40 patients (73%) were thought to be benign at the double contrast barium meal.

An ulcer was considered to be benign if the area gastric pattern or in the healing phase, the radiating mucosal fold pattern extended to the edge of the crater. The benign nature of these ulcers was confirmed by endoscopic biopsy and follow up to healing in all. In 14 patients, there was radiological doubt as to whether the ulcer was benign or malignant.

Mountford et al. (1981) advise repeated endoscopy and biopsy of all gastric ulcers until they are completely healed.

In study done by Gordon et al. (1980), six patients had a gastric ulcer scar at double contrast barium meal. Endoscopic biopsy was requested to exclude gastric cancer. There was no endoscopic evidence of malignancy in these six patients.

In this study, there was radiological and endoscopic agreement about the presence of duodenitis in 3 patients out of 6 patients (50%) and duodenal ulcer in 4 patients out of 5 patients

(80%). In three patients, there was doubt as to the presence of duodenitis, at endoscopic examination with biopsy there was duodenitis in all of them.

In one patient, a duodenal ulcer was seen endoscopically that had not been demonstrated at double contrast barium meal.

Eraser et al. (1971) reported that endoscopic and radiological agreement about the presence or absence of duodenitis in 10 patients out of 21 (48%).

In study done by Langkemper et al. (1980), twenty-five patients had either a duodenal ulcer or scar of a healed duodenal ulcer at double contrast barium meal. The endoscopic findings confirmed the double contrast barium meal findings in all of them. In three patients, an ulcer was seen endoscopically that was not demonstrated at double contrast barium meal.

Conclusion:

The double contrast barium meal and endoscopy are complementary diagnostic techniques and are not mutually exclusive. Whenever there is doubt about the interpretation of the appearances at double contrast barium meal an endoscopic opinion should be sought. It would be advised to start investigations of the gastro-duodenal lesions by double contrast barium meal as it is much less uncomfortable for the patient than endoscopy. So, endoscopy should be reserved for patients with intractable symptoms, in whom the X-Ray examination is normal and those in whom the radiological diagnosis of a benign ulcer is equivocal.

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