

Does Routine Abdominal Ultrasound Enhance Diagnostic Accuracy in Irritable Bowel Syndrome?

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Objective: The current recommendation that irritable bowel syndrome (IBS) should be diagnosed positively using minimum investigation raises the possibility that some disorders, particularly gynecological, may be overlooked. Transabdominal ultrasound is now sufficiently sophisticated to allow assessment of all abdominal viscera for associated pathology, and this study was designed to evaluate its role in the diagnosis of IBS. **Methods:** An ultrasound scan was performed in 125 patients (100 females, 25 males) for whom a confident diagnosis of IBS had been made. **Results:** No serious intra-abdominal pathology was encountered, but 20% of females and 8% of males had an ultrasound abnormality. None of these abnormalities resulted in any additional therapeutic measures. A hepatobiliary abnormality was found in similar proportions of males and females (10 vs 8%). Gallstones were most common (5 vs 4%), but in no individual were they considered to entirely account for the presenting symptoms. Eight percent of the women were found to have a pelvic abnormality, but it was not regarded as serious in any of them. **Conclusions:** This study confirms that a positive approach to diagnosing IBS is a safe policy. Furthermore, routine ultrasound scanning in IBS is unnecessary and could be counterproductive by detecting many minor abnormalities, which can pose further therapeutic dilemmas.

INTRODUCTION

Fear of overlooking organic disease leads many practitioners to prefer making the diagnosis of irritable bowel syndrome (IBS) by a process of exclusion (1). This policy can be unrewarding and unnecessarily expensive for both patient and doctor. It is currently advocated that a more positive approach to diagnosing this condition should be adopted, concentrating on symptoms of particular discriminant value and keeping investigation to a minimum (2-4). Although a positive approach to the diagnosis of IBS has been shown to be a generally safe policy (5-7), there remains a concern that, in some cases, pathology might still be overlooked, particularly if it is localized to the gynecolog-

ical system. It is certainly not routine practice for gastroenterologists in the United Kingdom to undertake a detailed pelvic examination (including vaginal examination) in women, and the possibility of a gynecological diagnosis may not be at the forefront of their minds. Thus, there is a need for some form of investigation that might detect disorders exhibiting a symptom overlap with IBS as well as detect those diseases, e.g., colon cancer, that are, in some instances a coincidental finding rather than the cause of the presenting symptom.

Ultrasound examination of the abdomen and pelvis has now reached sufficient quality to allow assessment of all abdominal viscera for associated pathology (8, 9), and there are data to suggest that it may have potential in screening for IBD and colonic neoplasia (9-12). Thus, serious disease within the abdomen that might be either mimicking the symptoms of IBS or be coincidental to the problem should be detectable by this technique. Furthermore, transabdominal pelvic ultrasound will undoubtedly detect serious pelvic pathology although problems such as mild endometriosis or pelvic inflammatory disease may be overlooked. However, it could be argued that not detecting trivial pathology of questionable relevance to current symptomatology might be a good thing.

Because of its tendency to be regarded as a somewhat operator-dependant technique, there are still some reservations about the reliability of ultrasound in general. This is probably now an unnecessary concern because the sophistication of the equipment has rapidly improved, and experience with its use has become much more widely available. Thus, most hospitals should now be in a position to provide high quality, accurate, and reliable abdominal ultrasound.

Because it is safe and noninvasive and involves no radiation or discomfort, abdominal ultrasound has considerable appeal as a screening investigation tool, particularly for patients with IBS. It was the purpose of this study to assess whether the routine addition of an ultrasound examination of the abdomen enhances diagnostic accuracy in patients for whom a positive diagnosis of IBS had already been made.

METHODS

One hundred and twenty five consecutive outpatient general practice referrals (100 female, 25 male) for whom a

TABLE 1
List of Abnormalities on Ultrasound of 125 Patients with IBS

Abnormality	Females (n = 100) [n (%)]	Males (n = 25) [n (%)]
Total	20 (20)	2 (8)
Gallstones	5 (5)	1 (4)
Dilated common bile duct ^a	1 (1)	0
Fatty liver	2 (2)	1 (4)
Hemangioma of liver	1 (1)	0
Calcification in liver ^b	1 (1)	0
Benign follicular ovarian cyst	1 (1)	0
Benign uterine cyst	1 (1)	0
Fibroids	4 (4)	0
Loculated pelvic fluid	1 (1)	0
Dilated pelvic veins	1 (1)	0
Cyst in adenexae	2 (2)	0

^a Cause unknown but liver function tests normal and no gallstones found.

^b Minor, cause unknown.

confident diagnosis of IBS was made at first attendance were studied. The mean age of female IBS patients was 38 yr (range 20–77 yr), and the mean age of male IBS patients was 42 yr (range 23–73 yr). All patients were evaluated within 6 months of diagnosis and had to conform to the Rome criteria (13) for IBS and have abdominal pain, abdominal distension, and some abnormality of bowel habit (constipation, diarrhea, or an alternation between the two). In addition, it was necessary for stool examination and hematological and biochemical indices, including erythrocyte sedimentation rate (ESR), to be normal. Sigmoidoscopy was performed in all patients, and, for those over 45 yr of age, a barium enema or colonoscopy was also undertaken. All were normal except for some cases of diverticular disease.

A detailed record of symptoms was made to allow correlation with any potential abnormality found on ultrasound examination. This included symptoms regarded as discriminatory for IBS (2, 13) as well as a record of the site of pain and its radiation and duration. Noncolonic symptomatology (14) and the presence of any symptoms indicative of pelvic pathology were also noted. All patients had complete ultrasound assessment of abdominal contents including pelvic organs in women, undertaken in a standard systematic way by one radiologist using a 3.5-MHz transducer (A. T. L. Ultramark 9).

When an ultrasound abnormality was found, a detailed review of the patient's symptoms and case notes was undertaken. In addition, females with pelvic abnormality were referred for a gynecological opinion.

RESULTS

Twenty percent of women and 8% of men were found to have some form of ultrasound abnormality (Table 1). The prevalence of a hepatobiliary abnormality was approximately the same in both sexes (10 vs 8%) with gallstones

being the most common finding. A gynecological abnormality was found in 8% of women, but these abnormalities were varied and in no instance were regarded as serious. No case of IBD, colonic neoplasia, or other serious structural disease was identified. Review of symptom patterns in light of the ultrasound findings did not result in a revision of the diagnosis of IBS in any patient.

DISCUSSION

This study indicates that routine ultrasound examination of the abdomen in patients presenting with IBS is probably unnecessary. Although 18% of patients were found to have some form of ultrasound abnormality, in no case was any disorder identified that could have compromised the patient's safety.

The combination of clinical history and judicious use of contrast radiology or endoscopy should eliminate the diagnoses of IBD and neoplasia in most cases. The results of this study show that ultrasound examination did not enhance diagnostic accuracy in this area. However, confusion between IBS and gynecological pathology is of much more serious concern and cannot be eliminated so easily by the usual investigations adopted by gastroenterologists. Although laparoscopy would be necessary to provide detailed information on the state of the pelvis, the results of this study give some reassurance that, although a small amount of gynecological pathology would have been overlooked had a scan not been undertaken, it was not of serious consequence.

Despite the findings of this study, it might still seem tempting to use ultrasound as an initial screening investigation in all patients with IBS, particularly because it is relatively cheap and may avoid the necessity for contrast radiology. However, this policy would prove to be prohibitively expensive in a condition so common as IBS, and the yield of serious disease would be very poor. Furthermore, by revealing a not inconsiderable amount of minor pathology of questionable significance, such an approach could result in unnecessary worry on the part of the patient, therapeutic dilemmas, and a deviation from the patient's primary problem. For patients presenting with IBS for whom it is current policy to undertake either endoscopy or radiology (e.g., for those patients over 45 yr of age), the possibility of abandoning this practice in favor of ultrasound cannot yet be recommended until it is known that the specificity and sensitivity of this technique in detecting colonic disease are equal to that of the currently available investigation tools.

The results of this study indicate that routine abdominal ultrasound examination is unnecessary in patients for whom the diagnosis of IBS is not in doubt.

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