Computed tomography of the colon in elderly people

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Barium enema has long been the standard imaging test for investigating the colon. It may, however, be unsuccessful in elderly people and is often poorly tolerated by patients and disliked by staff; frail patients often have to be admitted to hospital for it. A previous, pilot study suggested that computed tomography might be a satisfactory alternative.¹ We report our experience of using computed tomography as the initial radiological examination to investigate possible disease of the colon in frail elderly people.

Patients, methods, and results

In 1992, 66 elderly patients (age range 70-93, mean 82) were referred for computed tomography of the colon. Fifty one were referred by geriatricians who had helped to develop this new diagnostic approach in our pilot study. Thirty two patients were already inpatients when investigated, and the rest were seen as outpatients.

In July 1993 the notes of these patients were reviewed. The main reasons for the referrals had been possible gastrointestinal blood loss (28 patients), an altered bowel habit (26), and abdominal pain (7).

Top: Computed tomogram of colon of 81 year old woman, showing large soft tissue mass (M) lying centrally in area of sigmoid colon with extensive diverticulosis (U=fundus of uterus). Although carcinoma was suspected, the report was classified as equivocal because of the diverticulosis and barium enema was recommended. Bottom: Barium enema image, showing mass (arrows) in and among diverticula. In many ways the carcinoma is better seen in the computed tomogram

Dilute oral contrast medium had been given in four 300 ml doses starting two days before the examination to ensure full opacification of the colon. No contrast medium had been administered rectally. Computed tomography (Somatom Plus) had been performed with sections 1 cm thick at 1.5 cm intervals through the abdomen and pelvis. A senior registrar or consultant in radiology had supervised and reported each examination.

In 50 patients computed tomography showed a normal colon or diverticula. No further investigations of the large bowel were performed, and no disease of the colon became evident during 6-8 months of follow up.

In eight patients computed tomography showed an abnormal colon. In three of these patients carcinoma was confidently diagnosed; this was confirmed by resection in one patient, and by the presence of liver deposits in one, and malignant ascites in one. Four patients had possible carcinomas, but no further tests were performed as one patient had dementia and the three others died soon after the investigation. In one patient computed tomography showed the typical features of a colitis (probably ischaemic colitis), but no further tests were done.

The report of the computed tomogram was equivocal in eight patients, prompting seven barium enemas and one colonoscopy; these showed two further carcinomas (figure).

Comment

Iron deficiency anaemia is common among elderly people, and both the upper and lower gastrointestinal tracts need to be investigated.^{2,3} Elderly patients who are iron deficient, and others clinically suspected of having cancer of the colon, are usually investigated with a barium enema. This procedure can be difficult, distressing, and unrewarding in frail elderly patients as they may be anxious, incontinent, or immobile, or may not tolerate the preparation. Our pilot study,¹ in which such patients had both computed tomography and a barium enema, indicated that computed tomography should be an adequate alternative to a barium enema.¹ Our experience of using computed tomography as an alternative confirms the findings of that study. As computed tomography is non-invasive it was well tolerated. It provided diagnostic information on all patients, and no patients required admission. It also showed lesions of organs other than the colon.

Although computed tomography detects large masses in the colon and diverticular disease,⁴ it does not match barium enema or colonoscopy in detecting small polyps and subtle mucosal abnormalities. However, such findings are not so relevant in elderly patients.

In our hospital computed tomography is now established as the initial imaging investigation of the colon in frail elderly patients, most of whom are spared a barium enema. Since adopting this procedure we have become more familiar with the appearance of both the normal and the abnormal colon on computed tomography. We are also able, therefore, to use computed tomography in younger patients who are not suitable for barium enema or colonoscopy or in whom these procedures give inconclusive results.

- 1 Day JJ, Freeman AF, Coni NK, Dixon AK. Barium enema or computed tomography for the frail elderly patient? *Clin Radiol* 1993;48:48-51.
- 2 Cook IJ, Pavli P, Riley JW, Goulston KJ, Dent OF. Gastrointestinal investigation of iron deficiency anaemia. *BMJ* 1986;292:1380-2.
- 3 McIntyre AS, Long RG. Prospective survey of investigations in outpatients referred with iron deficiency anaemia. *Gut* 1993;34:1102-7.
- 4 Balthazar EJ. CT of the gastrointestinal tract: principles and interpretation. *Am J Roentgenol* 1991;156:23-32.

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