secondary deposits in the left axilla, followed six months later by a malignant left pleural effusion. Shortly after this she left London. She was not seen again and presumably has died.

Discussion

Subungual melanoma is uncommon. It occurs in middle-aged and elderly patients and most commonly affects the thumbnail or great toenail.[4 5] Malignant melanoma is more common in women than men,[6] but subungual melanomas occur equally often in both sexes.[7] There is a relatively high incidence in Negroes,[6 8] when one considers that malignant melanoma is rare in that race.[9]

The palms, soles, genitalia, and subungual areas have an increased incidence of malignant melanoma proportional to their surface area. This has been attributed to trauma but is more likely to be related to the fact that moles in these areas usually remain as junctional or compound naevi.[10] Only relatively few moles on the rest of an adult's body show junctional activity. Many patients attribute the onset of their tumours to trauma,[2 4 11] but more probably when the lesions are injured they do not heal and are therefore noticed.

Primary melanoma is diagnosed microscopically by the presence of junctional activity; secondary tumours are said to remain entirely beneath the epidermis.[12] Multiple primary melanomas are said to occur in 3·6% of patients with malignant melanoma.[10]

Of particular interest in one of our patients (case 1) was the symmetry of the lesions. Peterson *et al.*[6] described five patients with multiple primary malignant melanomas, of which three showed bilaterally symmetrical lesions; other workers have not noticed this. Duperrat[7] described a patient (case 13) who had a painful subungual melanoma of his right index finger and who, one year later, developed a painful pigmented lesion under his left great toenail. This was thought clinically to be a second melanoma but histological examination showed it to be a glomus tumour.

The present patients were thought to be suffering from ingrowing toenails, simple split nail, junctional naevus, and chronic paronychia before the correct diagnosis was made. In three of the four patients no pigmentation was visible in the early stages, and in two the tumours were amelanotic when they were removed. Such lesions usually look inflammatory and are almost never diagnosed clinically.[13] Malignant melanoma should be considered as a possible cause of any persistent abnormality of the nailbed or the nail itself, whether it is pigmented or not.[13 14] Only half of the cases are diagnosed within two years of the tumour appearing and 30% of patients already have metastases in the lymph nodes when they are first seen.[14] The prognosis ought to be better than for malignant melanoma elsewhere because a wide margin of excision is guaranteed if the digit is removed,[15] provided the correct diagnosis is made initially.

We should like to thank Drs. Gold, Forman, Samman, and Wilson Jones for permission to report on patients under their care, and Professor J. S. Calnan and Mr. A. K. Munro for follow-up details of patients.

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PRELIMINARY COMMUNICATIONS

Colonic Response to Pentazocine

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British Medical Journal, 1974, 1, 312-313

Summary

The effects of pentazocine on colonic motor activity were studied in five normal subjects, five patients with irritable bowel syndrome, and five patients with diverticular disease. The drug decreased intraluminal colonic pressures in all patients but one. Since morphine, which increases intraluminal colonic pressures, is contraindicated in patients with abdominal pain of colonic origin (diverticular disease, irritable bowel syndrome), we suggest that pentazocine may be a useful drug in such cases.

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Introduction

Abdominal pain is a common complaint due in many patients not to structural alimentary disease but to "functional" disorders with abnormal intestinal motility. Among these are diverticular disease and the irritable colon syndrome. Medical treatment of these conditions (Painter and Truelove, 1964; Waller, 1971) may relieve pain but sometimes the patient may need an analgesic drug. Painter and Truelove (1964) have shown that morphine and other opium derivatives may make abnormal motility worse by increasing the power of already abnormally strong contractions of smooth muscle, and though pethidine is one alternative its addictive properties make its repeated use undesirable.

Studies in animals (Danhof *et al.*, 1966; Danhof and Blackmore, 1967) and man (Danhof, 1967) showed that pentazocine delayed gastric emptying and diminished small intestinal propulsive motility. The actions of the drug on the abnormal large bowel have not previously been described, and we report its effects on colonic motor activity in normal subjects and in patients with abdominal pain due to the irritable bowel syndrome or diverticular disease.

Subjects and Methods

The subjects studied were five normal men aged 19 to 22

Effects of Pentazocine on Colonic Motor Activity

Distance from Anus	Mean % Activity ± S.D.			Mean Amplitude of Wave ± S.D. (cm H_2O)			Mean Motor Product ± S.D.		
	Basal	After Pentazocine	Significance	Basal	After Pentazocine	Significance	Basal	After Pentazocine	Significance
Lead 1 (25 cm)	13·6 ± 10·7	7·4 ± 7·1	P<0·01	11·0 ± 5·9	8·2 ± 4·2	P<0·01	210·3 ± 230·4	79·0 ± 87·5	P<0·05
Lead 2 (20 cm)	15·2 ± 9·2	6·9 ± 7·4	P<0·01	12·1 ± 4·8	7·9 ± 3·9	P<0·01	241·5 ± 270·8	65·1 ± 93·2	P<0·05
Lead 3 (15 cm)	12·0 ± 8·4	6·1 ± 6·9	P<0·01	10·3 ± 5·1	7·4 ± 4·0	P<0·01	200·3 ± 241·3	60·3 ± 89·6	P<0·05

years (mean age 20·2 years), five patients with the irritable bowel syndrome (3 men, 2 women; mean age 36·9 years), and five patients with diverticular disease (2 men, 3 women; mean age 54·2 years). All patients with the irritable bowel syndrome or diverticular disease complained of lower abdominal pain mainly localized in the left iliac fossa. The procedure was explained to all subjects and their consent obtained.

Colonic pressures were measured by three polyvinyl tubes bound together with their side openings 5 cm apart. These were continuously perfused with distilled water by means of an infusion pump at a rate of 1·2 ml/min. The tubes were inserted into the sigmoid colon through a sigmoidoscope (which was removed after the tubes had been positioned) with the openings 25 cm, 20 cm, and 15 cm from the anal margin. The tubes were connected via pressure transducers to a multichannel direct-writing recorder. Respiration was monitored by a belt pneumograph on the same recorder.

After the introduction of the polyvinyl tubes the patient lay comfortably in bed, a rest period of at least 15 minutes being allowed before recording was started. After basal activity had been recorded for an hour the patients received a control injection of 0·9% saline solution (intravenously or intramuscularly) and colonic motility was recorded for another 30 minutes. Then pentazocine (Fortral) 0·3 mg/kg intravenously or 0·5 mg/kg intramuscularly was given and the recording continued for at least 30 minutes.

Colonic motor activity was analysed for the percentage of time activity was present, the mean amplitude of the waves, and their product (duration or activity × mean amplitude), which is an estimate of total activity.

Results

The measurements showed reduced colonic motor activity in all but one subject after administration of pentazocine. The results of all subjects investigated are given in the table. Four patients had abdominal pain during recording accompanied by increased colonic motor activity; it was in these patients that pentazocine had the most evident action (see fig. 1) leading to both cessation of pain and decreased colonic motility. A trace obtained from a normal subject is shown in fig. 2.

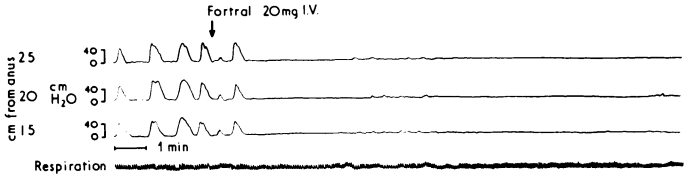

FIG. 1—Decrease of colonic motor activity after intravenous injection of pentazocine 20 mg in 46-year-old woman with irritable bowel syndrome. Pain stopped two minutes after injection.

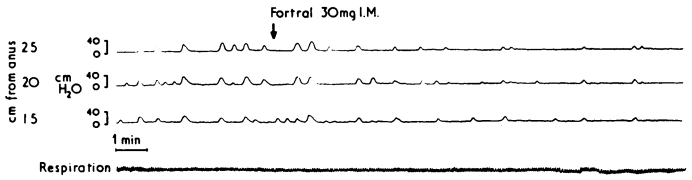

FIG. 2—Decrease of colonic motor activity after intramuscular injection of pentazocine 30 mg in 19-year-old normal man.

Discussion

Pentazocine, a bensomorphan derivative described by Archer *et al.* (1964) and Harris and Pierson (1964), has a significant analgesic effect in man (Keats and Telford, 1964; Sadove *et al.*, 1964). Clearly there is a need for a safe drug with a low risk of addiction in the treatment of patients suffering from chronic or recurrent abdominal pain due to abnormal colonic motor activity. Morphine is contraindicated in such cases because it increases rather than diminishes the abnormal muscular contractions which cause the pain. (Painter and Truelove, 1964). Pentazocine seems to fulfil the need. Its action on colonic motility has so far been studied only in five normal subjects by Danhof (1967), who found that pentazocine depressed colonic motility though the mechanism by which it did so is not known. It is encouraging that its motor effects seem equally great in the presence of abnormal motility, particularly as this was most evident in patients who experienced abdominal pain during the recordings. Side effects included nausea in three patients and vomiting in one—none, however, was of major significance.

We suggest that pentazocine is a useful drug for patients with abdominal pain associated with abnormal motor function (diverticular disease, irritable bowel syndrome).

We are grateful to Winthrop Ltd. for generous supplies of Fortral. The technical help of Miss Lynn Brown was invaluable and was financed by the Wellcome Foundation. C. Stanciu receives a grant from the Leeds Regional Hospital Board.

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