

ultrasound or CT, their accuracy cannot be compared directly with leucocyte scans which in this study were specifically requested because of the failure of standard investigations to reach a diagnosis. Furthermore, both ultrasound and CT may be used to guide aspiration or catheter drainage both for diagnostic purposes and for definitive treatment<sup>10,11</sup>. Where percutaneous drainage is planned, a <sup>111</sup>In-labelled leucocyte study provides insufficient definition to guide needle puncture but may usefully exclude other sites of intra-abdominal sepsis reducing the need for full laparotomy.

In this series six patients underwent repeated intensive investigation, including CT, ultrasound and exploratory laparotomy in two, which had failed to localize sepsis. Although the abscess was localized in all cases by <sup>111</sup>In-labelled leucocytes these patients had deteriorated to a critical condition, emphasizing the need for early referral to centres where cell labelling can be performed. <sup>111</sup>In-labelled leucocyte techniques are not difficult and could be used in most nuclear medicine departments. A 'clean room' is required both for sterility in an open cell labelling technique and for the stringent specifications of the Health and Safety at Work Acts. However, most hospitals do not have either the expensive facilities or staff trained in these methods and research should be directed to the development of an isotope substrate which either localizes directly in abscesses or may label leucocytes *in vivo*. In this way <sup>111</sup>In-labelled leucocyte techniques may be available early in the investigation of occult sepsis in any hospital possessing a gamma camera. Until then referral to those centres with the necessary facilities must be rapid to reduce mortality.

## Case report

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## Recurrent small bowel obstruction associated with piroxicam

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It is known that small bowel ulceration and obstruction can be caused by drugs<sup>1-4</sup>. This report is of a patient who presented with recurrent small intestinal obstruction over 18 months while receiving piroxicam (Feldene) for arthritis.

### Case report

A 75-year-old woman was admitted with an 18 month history of weight loss, abdominal pain and vomiting. She had been receiving piroxicam and Moduretic for 2 years. She had been admitted 6 months earlier with subacute small bowel obstruction. At that time she was anaemic (haemoglobin 8.1 g/dl, hypochromic microcytic type) and a small bowel series showed dilated small bowel, prolonged transit time and a suggestion of narrowing of the terminal ileum. At laparotomy thorough examination of the bowel revealed only a fibrosed appendix which was removed. After transient improvement her symptoms gradually recurred and worsened. Extensive investigations did not identify the cause. Her abdominal films on readmission suggested small bowel dilatation. On re-exploration an obstruction was identified some seventy centimetres proximal to the ileocaecal junction. Fifteen centimetres of the ileum, containing two diaphragm like strictures close together, was removed and intestinal continuity established with an end-to-end anastomosis. Following this, the patient experienced complete relief of symptoms.

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Histology of the resected specimen revealed an area of ulceration with marked mucosal hypertrophy on both sides with chronic inflammatory cell infiltration and oedema of the submucosa. No malignant change was seen.

## Discussion

Small bowel ulcers due to the use of certain drugs can lead to perforation, haemorrhage or obstruction with an overall mortality of up to 10 per cent<sup>1,2</sup>. A review<sup>3</sup> shows that drugs can cause small bowel obstruction by an effect on the mucosa (e.g. potassium supplements); by producing an intramural haematoma (e.g. anticoagulants); by affecting the smooth muscle (e.g. opiates); by interfering with parasympathetic nerve transmission (e.g. tricyclic antidepressants); or by an effect outside the wall (e.g. contraceptive pills and adrenal corticosteroids which may produce mesenteric vascular occlusion). Among the anti-inflammatory drugs, phenylbutazone has been implicated as a cause of small bowel obstruction due to multiple strictures<sup>4</sup>.

This report emphasizes the need for caution in prolonged use of piroxicam in patients with gastrointestinal symptoms.

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