

The first patient was a very frail 76-year-old who, after premedication with 2.5 mg diamorphine i.m., underwent total hysterectomy for endometrial carcinoma. On awakening from her anaesthesia and complaining of pain she was given 50 mg pethidine in 10 ml saline epidurally (3½ h after premedication). This gave good analgesia but after 30 min she was in virtual apnoea. Naloxone 0.4 mg was given intravenously whereupon her respiratory rate increased and she became easily rousable.

The second patient was a heavy (80 kg) but fit 42-year-old woman who had a vaginal hysterectomy. She had also received diamorphine for premedication, 5 mg being given i.m. Post-operatively she was complaining of pain, and 4 h after the diamorphine she was given 100 mg pethidine in saline epidurally. Again over 30 min very slow respiration developed and she had to be given naloxone 0.2 mg i.v. The analgesia was very marked and unaffected by the naloxone.

Clearly further experience is needed in regard to dosage, but care must be taken if the larger doses of opiates are to be used. This method of analgesia could well prove a most useful addition to pain relief and it would be a pity if it were brought into disrepute by an unfortunate accident.

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### OUTBREAK OF ERGOTISM IN WOLLO, ETHIOPIA

SIR,—Western Wollo is a region of dramatic mountainous scenery and elevated plateau. It is populated by the Amhara people, who are agriculturists, growing mainly barley and teff. An outbreak of ergotism occurred here, starting in December, 1977. In March, 1978, the health officer at Lalibela health centre reported that in the preceding 3 months he had seen about ten cases of severe gangrene, and had heard of many more in an area on the plateau about 40 km to the south. Following a flight by helicopter from Lalibela I examined the five patients described below on March 17, 1978.

*Case 1.*—A man aged 20 had dry gangrene of the right hand spreading up to mid-forearm. There was severe pitting oedema of both feet, up to 20 cm above the ankles and the circulation of both feet was severely compromised. Femoral and carotid pulses were weak, and no other peripheral pulses could be detected. The condition had started 2 weeks earlier.

*Case 2.*—A boy aged 13 had advanced gangrene of the left leg with a demarcation line 5 cm below the tibial condyle.



Gangrenous ergotism in 13-year-old Amhara boy.

Tibia and fibula were exposed for 2–3 cm below the demarcation line (see figure).

*Case 3.*—A boy aged 8 had early gangrene of both legs up to 7 cm below the knees. The limbs were swollen, desquamation of the skin was taking place, and clearly the limbs were lost. No popliteal pulses could be felt and femoral pulses were only feebly present. This child was very ill and died shortly afterwards.

*Case 4.*—A boy aged 3 had gangrene of both legs up to a point 3 cm above the knees. Separation of the left leg had already taken place and separation of the right leg was clearly imminent.

*Case 5.*—A girl aged 13 had gangrene of the left foot up to 4 cm above the lateral malleolus.

The villagers showed me samples of grain (a mixture of barley and wild oats) in which some blackened and distorted ears were present. They attributed the gangrene to eating this spoilt grain. Nobody could remember any other similar outbreak.

In the next few weeks a team sent by the Ethiopian Nutrition Institute found 136 similarly affected cases, many of whom were taken by helicopter to the hospitals in Dessie. Many of those affected died.

In Britain ergotism was rare, possibly because the peasantry preferred pure wheaten bread to rye.<sup>1</sup> There was an outbreak in Suffolk in 1762,<sup>2,3</sup> and another amongst Jewish immigrants in Manchester in 1928.<sup>1</sup> Near Perm, in Russia, in 1926, 11 000 people were affected.<sup>1</sup> There were outbreaks in France in 1951 and in India in 1975.<sup>4</sup> In this outbreak in Wollo, the precipitating factors seem to have been the preceding prolonged wet season, and the large amount of wild oats growing with the barley. Barley is resistant to infection with *Claviceps* species, but wild oats (*Avena abyssinica*) are susceptible. The appearance of the infected grain is suspicious and most people seem to have picked out and discarded the ergot bodies before grinding. In December, 1978, there was still heavy infection of wild oats with the ergot fungus, but owing at least in part to vigorous action by the authorities, including exchanging good grain for bad, burning of affected grain, and generally alerting the public, there have been only isolated cases of ergotism since the initial outbreak.

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### CHOLELITHIASIS AND HIATUS HERNIA

SIR,—In attempting to confirm an association between cholelithiasis and hiatus hernia, Dr Honoré (April 28, p. 927) has been caught in one of the pitfalls of retrospective surveys, the inappropriate control group. The criteria for diagnosis of hiatus hernia in his cholelithiasis group were essentially operative findings and a typical symptom complex confirmed by radiology and/or endoscopy: the records of the control group were "similarly screened" and evidence of hiatus hernia found in only 5 out of 884 cases. In such a retrospective survey, however, it is essential that each group has equal opportunity of satisfying the conditions set. Patients undergoing operation for acute appendicitis or nasal polyps will not have hiatus hernia diagnosed surgically, and it is unlikely that this will be sought and recorded at operation in patients in the other surgical categories (uterine disease and colorectal cancer). Similarly, direct questioning about heartburn is a routine, and performance of barium meal and/or endoscopy are in practice not uncommon, in the course of the clinical diagnosis of cholelithiasis. Such in-

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