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Lesson of the Week

Carbon monoxide poisoning mimicking gastroenteritis

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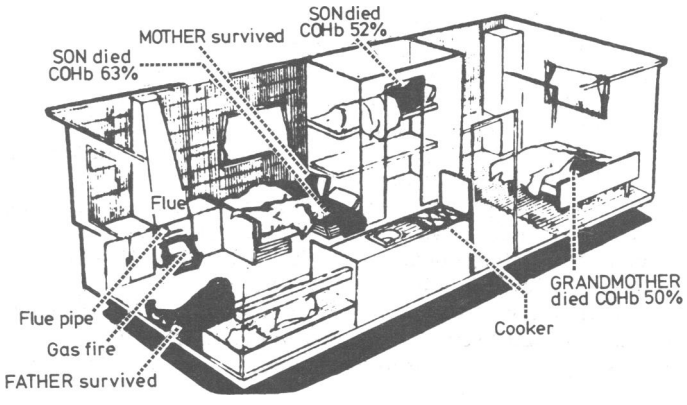
A family of five presented with symptoms of gastroenteritis that were subsequently attributed to carbon monoxide (CO) poisoning. Although CO poisoning may occasionally be confused with drunkenness,[1 2] the fact that it mimics gastroenteritis is, we believe, not so well recognised. We draw this to the attention of practitioners who may be called on to treat patients within caravans or other confined quarters where there is a possible source of CO.

Consider carbon monoxide poisoning when the occupants of a closed environment show symptoms of gastroenteritis.

Case report

One of us (PJP) was called in the early morning to a family of five newly arrived holidaymakers in a static caravan. They complained of nausea, vomiting, and abdominal pain after their evening meal. After examination in the heated, dimly lit caravan gastroenteritis was diagnosed, prochlorperazine prescribed, and the practice telephone number left. Some 30 hours later a neighbour became suspicious on noticing a collapsed curtain rail at one of the caravan windows. Looking inside he saw the father slumped on the floor and summoned help.

The scene on entering the caravan, in which three of the family had died, is shown in the figure with the carboxyhaemoglobin (COHb) levels in the deceased. Only one small window was ajar at the end of the caravan, where the father lay on the floor alongside two healthy caged birds. Heating and cooking were by propane gas, which was not lit at the time. The postmortem examinations, which showed bright, pinkish, livid stains and similar coloration of the body musculature and internal organs, led to the diagnosis of CO poisoning in the three who died and in the two survivors. The survivors had been unconscious, pale, and hyperventilating on admission to hospital. Analysis of blood samples, taken four hours after the survivors were removed from the caravan, showed 30% COHb in the mother and 27% COHb in the father. Bacteriological tests on vomit and food removed from the caravan, on blood, faeces, and gastric contents from the deceased, and on samples from the survivors showed no evidence of food poisoning. The fatal accident inquiry established that a faulty gas fire was the source of the CO, an altered flue having contributed to poor ventilation in the caravan. Gas analysis on lighting the fire under conditions as they were at the time of the tragedy proved this, a potentially lethal level of CO soon arising. Previous occupants of the caravan reported having been ill with symptoms that were attributable to CO poisoning.



Comment

Any flame-burning carbonaceous matter in an insufficient amount of air is a potential source of CO. CO is a non-irritant, colourless, odourless gas that combines with haemoglobin to form COHb. Having an affinity for haemoglobin some 250 times that of oxygen, it is extremely dangerous even in low

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concentrations. A dangerous state of intoxication, preventing escape, may arise before symptoms become severe.[2] Victims of moderate or severe poisoning not infrequently develop nausea, vomiting, and incontinence of faeces.[3] Mistakes, such as attributing death to food poisoning, have occurred because of inadequate postmortem examinations.[4 5] Victims may be capable of performing tasks and even giving orders while suffering from poisoning but on recovery have no recollection of those events.[1] The father of this family claimed at the inquiry to have no recollection of PJP's visit or of subsequent events until he had recovered in hospital.

The clinical diagnosis of CO poisoning is not always easy and often depends on being aware of such a possibility.[4] Skin pallor is much more often seen than the classical pink colour of the mucous membranes and skin, which indicates severe poisoning. If those in charge of caravan sites were aware of the manifestations of CO poisoning, similar tragedies might be prevented.

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General Practice Observed

Changing to A4 folders and updating records in a "busy" general practice

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Summary and conclusions

When the FP5/6 record envelopes were converted to A4 folders in a busy practice a system of updating preventative health measures was begun and a disease index constructed. All the day-to-day work was delegated to lay staff, and the whole primary health care team participated in the updating procedures. The exercise, although expensive, was considered to be most worth while and has improved the quality of patient care.

Introduction

Just as the remote "possibility" of an area health authority health centre has prevented many doctors from improving and expanding their own premises so we believe the remote "possibility" of using computers for medical recording sometime in the dim and distant future is preventing many practices from improving their current records now.

After several meetings the partners in this practice decided that since computers were comparatively rare and untried in general practice, and may possibly never preclude day-to-day manual recording, and since the earliest they would be generally available could be ten or more years[1] the practice must forget about computers in the short term and start to convert FP5/6 envelopes to A4 folders now.

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"Medical records in general practice"[2] is an exemplary study from a university teaching practice and valuable and obligatory reading for anyone considering this step. It does emanate, however, from a small practice with many doctors whose total commitments include a considerable amount of non-service work (especially teaching) and who could spare "between 20 and 40 minutes a day" on the conversion. Thus they could effect it very quickly. Practices such as ours purposely maintain very large lists by employing the full complement of ancillary staff and sharing care with fellow health professionals.[3] Hence they have the greatest need for an efficient and effective record system, but the least time and staff available to make the changes. We have written this paper primarily as a guide to these busy service-orientated practices.

Because of their heavy service commitments (17 000 patients) none of the five doctors wished to spend time on day-to-day conversion of records. Once matters of principle had been decided the conversion was to be delegated to ancillary staff.

Why change to A4?

Despite attempts to improve the old medical envelope[4] together with the use of various insert cards (data-base, family planning,[5] obstetric, etc) the envelopes had become quite inadequate. A4 offered more space for recording in general, a systematic placing of certain basic data, a summary of the patients' significant illnesses on view opposite the day-to-day record, and, most importantly, space for other team members to record. These advantages have all been well documented.[6]

In addition the conversion seemed to us a golden opportunity to update the record, especially with regard to preventative medical procedures. This has not been reported and is our second major reason for writing this paper. We decided that certain "minimum