

her she was extremely ill. She was only semiconscious, and looked toxic and dehydrated. A rigid and retracted epigastrium brought her large uterus into grotesque relief. There was little doubt regarding the diagnosis, and this was confirmed radiologically. At operation she was found to have an enormous perforation of such an extensive duodenal ulcer that I was in no doubt whatever that the correct procedure was a partial gastrectomy. Despite limited exposure and a horrid duodenum, the operation was not difficult. This was doubtless due to the excellence of my anaesthetist and assistant, but I should like to recommend very strongly a left-sided stance when faced with mobilization of a difficult duodenum: this is the only difficult step in any partial gastrectomy, and I always do these cases from the left, just as one stands on the right when mobilizing a spleen. Perhaps with me there is the added feature of familiarity. Having spent so many years standing on the left to assist other surgeons to do gastrectomies, one tends to remain there, like the cat who remains on the hearth even when the fire has gone out.

The patient went into labour next morning, and was delivered of live twins. Unfortunately one of these died, but the other survived. The patient herself made a quick recovery, and in less than a week was up and about and eating an almost normal diet. She remained in hospital a further two weeks, but this was only because she had no immediate home to which to go. Her rapid recovery was perhaps partly due to the natural resilience of pregnancy and partly to the patient's innate toughness—she was a native of the Shetland Islands!

I should like to thank Mr. Tom Ealand, under whose care the case was admitted, and Dr. Kimmet for an excellent anaesthetic in rather trying circumstances.

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## Home-made Wine as a Cause of Lead-poisoning: Report of Case

Wine-making at home is a hobby enjoying a revived popularity and there are quite a number of publications on this subject. In these, details and advice are given on the container to be used for the fermentation, and from time to time one finds the reader encouraged to seek out in antique or junk shops large old crocks, which are regarded as being eminently suitable for the brew. However, it has been shown by Prior and Whitehead (1960) that some of these aged vessels are highly dangerous owing to the high lead content of their interior glazing, and an account is given here of another case of severe lead-poisoning from this cause. Although this is an uncommon cause of lead-poisoning in this country, it is still regarded as a serious problem in other countries (Beritić and Stahuljak, 1961).

#### CASE REPORT

The patient, a gardener aged 52, was admitted to hospital as a surgical abdominal emergency, ? intestinal obstruction. He gave a history of loss of appetite for one month and constipation for one week before admission. He had vomited a few times during the three days before we saw him, and had then developed some colicky lower-abdominal pain.

On examination he was rather dull and listless, and said he felt weak. Temperature 99° F. (37.2° C.). Pulse 100.

Tongue dry and furred. Gums showed no significant abnormality. Abdomen very obese, tenderness in the right iliac fossa and centrally. Liver and spleen not palpable. Rectal examination negative. Blood-pressure 140/80. Heart normal. The other systems were clinically normal.

It was decided to prepare the patient for operation for possible intestinal obstruction as a straight x-ray film of the abdomen was thought to suggest small-bowel obstruction. However, a routine blood count showed: haemoglobin, 62% (9.05 g./100 ml.); white blood count, 13,000/c.mm. (polymorphs 68%, lymphocytes 26%, monocytes 6%). Film: the red cells showed anisocytosis and marked polychromasia and punctate basophilia; some late normoblasts were seen. The blood picture was very suggestive of a haemolytic anaemia. Further investigations showed: direct Coombs test negative; red cells negative for the presence of Heinz bodies; red-cell fragility within normal limits; serum bilirubin 1.9 mg./100 ml.; E.S.R. 12 mm. in 1 hour.

The possibility that this might be a case of lead-poisoning was discussed with the surgeons, and the operation was postponed while further investigations were carried out. The patient would not admit to having used or been in contact with any lead-containing compounds in his work or elsewhere, and at this time only admitted to moderate drinking of draught cider (proprietary brands, not home-made). The urine gave strongly positive qualitative tests for both coproporphyrins and uroporphyrin. A specimen of urine submitted for lead content was found to contain 0.3 mg./litre—that is, about ten times the quantity normally present in unexposed persons, and the amount found in persons with clinical symptoms of lead-poisoning.

A firm diagnosis of lead-poisoning was now made, and treatment with calcium disodium versenate was begun, 2 g. daily for seven days. A more intensive search was made for the source of the lead, but investigation of garden sprays used by the patient, greenhouse paint, domestic water and garden standpipe water, and cider from the draught-cider cask all proved negative for any significant amounts of lead. The patient responded well to treatment, and three weeks after admission his haemoglobin had risen to 86%, though the red cells still showed some punctate basophilia. He was symptom-free and much brighter. On being questioned once more with regard to his habits and hobbies he mentioned the fact that he made wine at home, but denied using a lead-containing vessel. However, as he was ready for discharge, arrangements were made to obtain some of the remains of the wine which he had been drinking, and also to examine the container he had used for the brew.

The wine he had been drinking for some time before his admission to hospital was damson wine prepared by himself more than a year before his admission to hospital. He had made 5 gallons (22.8 litres) of this wine and had consumed nearly all of it in the months before his admission, at the rate of 2-3 pints (1.1-1.7 litres) a week. Fortunately he had a little wine and sediment left in one bottle, so a sample of this was analysed for lead content. If there had been any doubts about the diagnosis, these were certainly dispelled by finding a concentration of 120 mg./litre.

The wine had been prepared in a large old bread crock which had been given to him by his employer, in whose family's possession it had been for at least 70 years. The fruit had been placed in the crock and then covered with boiling water. It was then left for ten days, after which the liquor was separated and replaced in the crock, then sugar and yeast were added, and the whole brew was allowed to ferment for about two to three months. After completion of the fermentation it was bottled.

The patient was informed of our findings and advised not to use this crock again for wine-making and wisely broke the crock up, but, unfortunately, before we had had an opportunity to examine it whole; however, we managed to obtain a few pieces. Some of the glaze was scraped off these and the scrapings were placed in very dilute hydrochloric acid at 37° C. overnight. The resultant solution gave very strong standard analytical tests for lead. The crock

had been used for preparing some dandelion wine before the damson wine was made; but this had been done without the addition of boiling water, and flower wines are a good deal less acid than those prepared from fruits—usually acid in the form of lemon juice has to be added.

The man has made a full and complete recovery, and when seen recently his haemoglobin was 106% (15.48 g./100 ml.) with a normal blood film. He told us that a number of his wine-making friends, who also had used old earthenware containers, had got rid of them on hearing of his illness.

#### COMMENT

Many earthenware vessels made in this country prior to this century were lead-glazed and had a very appreciable lead content (Prior and Whitehead, 1960); even to-day, on the Continent, as pointed out by Beritić and Stahuljak (1961), earthenware pots or jugs are still made with lead glazing. It is therefore hazardous to use either old glazed earthenware vessels or, possibly, even those of more recent manufacture, particularly if foreign in origin, for wine-making. Those who indulge in this pleasant and absorbing hobby would be well advised to use glass or plastic containers, which we have found very suitable for this purpose.

Our thanks are due to Dr. A. I. G. McLaughlin, of the department for research in industrial medicine, London Hospital, for the lead tests on the urine and wine.

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## A Case of Massive Gas Gangrene

Gas gangrene is a rarity in civilian practice. In military spheres the principle of wide surgical excision of necrotic tissue, coupled with the use of antitoxin and antibiotics, has so reduced the incidence that in the second half of the Korean War only four cases of gas gangrene, none of them fatal, were reported in 4,900 casualties (Howard and Inui, 1954).

The following case of massive gas gangrene of the thigh complicating a previously symptomless diverticulitis of the pelvic colon, is rare enough to merit recording. Although a similar condition was treated with leeches in 1908, the mode of presentation adds interest to this case (Dawson and Hardy, 1948).

#### CASE REPORT

A 70-year-old man who worked at Whipsnade Zoo was referred to the Luton and Dunstable Hospital by his general practitioner for an orthopaedic opinion on the cause of his sciatic pain. A month previously he had fallen from his bicycle and hurt his left hip. Initially this had caused him little discomfort, but after 10 days the pain became worse and radiated down the back of the thigh to the left ankle. Because of this pain distribution he was treated for sciatica with bed rest and analgesics. After a further three weeks the pain had become so intense that he could not walk. During this period an enema relieved his constipation of four days' duration. He gave no history of abnormality of bowel habit save for mild constipation easily controlled by simple laxatives.

On admission he was slightly jaundiced, at times irrational, and extremely depressed. He complained of great pain when any attempt was made to move him. His mucous membranes were pale and his tongue was furred but moist;

no abnormalities of the cardiovascular or respiratory system were found. His abdomen was very distended and hyper-resonant with increased bowel sounds. A left reducible direct inguinal hernia was present. The left leg showed gross pitting oedema from the ankle to the groin. The thigh and especially the groin were extremely tender. His urine contained bile pigment and urobilinogen in excess. Serum chemistry showed an alkaline phosphatase of 17 K-A units; blood urea, 77 mg./100 ml.; sodium, 300 mg./100 ml.; potassium, 17 mg./100 ml.; chloride, 540 mg./100 ml.

Because of his cachectic appearance, his jaundice, and the distribution of his pain, x-ray films of the lumbar vertebrae were taken to exclude neoplastic secondary deposits in the spine. The vertebrae, however, were obscured by intestinal gas shadows.

A presumptive diagnosis of iliac vein thrombosis secondary to carcinomatosis and general debility was made.

The patient passed flatus but had no bowel action. The next day he was still desperately ill and a reassessment of the original x-ray films was made. In the antero-posterior view of the left hip a small area of translucency, suggestive of gas, was noted in the muscle bellies on the medial side of the thigh and was just visible on the edge of the film. A soft-tissue x-ray film was then taken which showed extensive areas of gas tracking down the thigh and appearing to originate from the left inguinal region. Superiorly they extended above the level of the greater trochanter and inferiorly to some 4 in. (10 cm.) above the knee. A diagnosis of massive gas gangrene of the thigh was made and 30,000 units of mixed antitoxin and 1 mega unit of penicillin were given and repeated six-hourly. Thirty-six hours after admission the gas had tracked along the more superficial tissue planes and crepitus was detectable in the left groin.

As soon as the diagnosis was established the thigh was widely incised and widespread muscle necrosis was found. The muscle bellies were a pale yellowish colour and they emitted the typical aroma of gas gangrene. Because the gangrene extended above the trochanter amputation was not performed. The wound was left open and hydrogen peroxide packs were applied. Laparotomy through a left paramedian incision showed the liver to be uniformly enlarged, but no other gross disease was noted. A swab of the thigh taken at operation and cultured anaerobically grew *Clostridium welchii*.

Intravenous fluids, including 20% dextrose, were given and penicillin and antitoxins continued, but the patient died 62 hours after operation.

The findings at necropsy were diverticulitis of the pelvic colon giving rise to a pericolic abscess which had tracked into the thigh along the line of the psoas muscle. A small inguinal hernial sac containing a knuckle of viable small bowel was noted. From this abscess track in the thigh the gas gangrene had involved the related muscles and had spread superiorly to the glutei.

#### COMMENT

Two other cases have been reported, one presenting with a painful leg and swelling in the groin, and the other with a groin abscess (Dawson and Hardy, 1948). The development of a psoas abscess appears to be a common feature of these three cases.

Although gas gangrene has been noted as a complication of diverticulitis, development of massive gas gangrene of the thigh must remain a very rare presenting feature of this condition.

I thank Mr. L. W. Plewes for his encouragement and permission to write this report.

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