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.

C. RICKWORD LANE, D.M., D.P.H.,
A. LAWRENCE, M.B., Ch.B.,
Group Laboratory, St. Luke's Hospital,
Guildford, Surrey.

REFERENCES

- Beritić, T., and Stahuljak, D. (1961). *Lancet*, **1**, 669.
Prior, A. P., and Whitehead, T. P. (1960). *Ibid.*, **2**, 1343.

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.

J. B. NICHOLS, M.B., B.Chir., D.Obst.R.C.O.G.,
Late House-surgeon, Luton and Dunstable Hospital.

REFERENCES

- Dawson, R. L. G., and Hardy, R. H. (1948). *Brit. med. J.*, **1**, 498.
Howard, J. M., and Inui, F. K. (1954). *Surgery*, **36**, 1115.