each organism and these were tested against known salmonella serotypes with the appropriate homologous antigens. Mirror absorptions were then carried out and the results confirmed the antigenic structures given above.

SUMMARY

Seven new salmonella serotypes, isolated from West African lizards, are described.

Grateful acknowledgement is made to Dr. Joan Taylor of the Salmonella Reference Laboratory, Colindale, and Dr. F. Kauffmann of the International Salmonella & Escherichia Center, Denmark, who confirmed the findings reported here.

REFERENCE


A HAZARDOUS ANÄSTHETIC

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This case is not presented because it is in any way original or unusual, but to emphasise an anaesthetic emergency that is described in many text-books and to show how quickly troubles can arise.

A young man of 22 years was admitted to this hospital with fractures of the cranial vault and base and also a fractured mandible. There was extreme cerebral irritation but no evidence of compression. A few days later his general condition was much improved and it was decided to fix the loose fragment of the mandible. As the patient had no teeth a splint had to be made from his dentures, and under general anaesthesia this splint was fixed to the mandible by wires passing round the body of the bone (circumferential wiring) and the upper and lower jaws were wired together. On this occasion anaesthesia was uneventful; when he awoke the patient was more comfortable than he had been, he could speak and take food more easily, and radiographs showed that the loose fragment was in good position.

Unfortunately some infection occurred when the circumferential wiring was done. Four days later the patient was very ill; he had severe bilateral submandibular cellulitis spreading down into the neck (Ludwig's angina), and this clearly needed incision and drainage. At the same time he was very toxic and his mental condition had deteriorated so that he was delirious. He was a strong man and needed two or three attendants all the time to control him.

It was clear that general anaesthesia would be necessary to allow adequate surgical treatment and this was a classical case of a hazardous anaesthetic as described in the text-books under the heading Anaesthetic Emergencies. In Ludwig's angina there is always some associated oedema of the larynx and there
is great danger that anaesthesia may in such circumstances produce complete laryngeal obstruction to respiration.

Atropine gr. 1/100 was given to the patient as premedication, and an hour later he was brought to the operating theatre with three attendants to keep him on the trolley. At this stage his respiration did not seem obstructed at all although there was a small quantity of pus in his mouth from the submandibular infection. A sterile tracheotomy set was open and ready for immediate use.

The patient was transferred to the operating table with some difficulty and pure oxygen was given through a mask for about three minutes; after this cyclopropane was gradually added to the mixture until a concentration of 33 per cent was reached. Anaesthesia was now deep enough to allow an incision to be made in the submandibular region on each side; at this time the respiration was very slightly obstructed, but not sufficiently to cause any alarm. Pus came out through lateral incisions and drains were inserted.

While the stitches were being inserted to keep the drains in position the patient's respiration suddenly became completely obstructed. Muscular efforts to overcome the obstruction were slight and quite ineffective and very soon ceased entirely. The patient's colour became blue very quickly and it was not possible to force any oxygen into his lungs by means of pressure on the rebreathing bag of the anaesthetic machine.

At this point tracheotomy was clearly essential and as the set was ready and to hand this was quickly done. The stimulus of this procedure was sufficient to restart respiratory movement and artificial respiration was not needed. The patient's colour rapidly returned to normal and the operation was completed uneventfully.

The young man's condition steadily improved from that time. His wires were removed a few days later to help overcome his infection, and shortly after that his tracheotomy was closed. He was later evacuated to the United Kingdom for further treatment.

Calley (1954) states that the essential points in cases of Ludwig's angina are:

1. Avoid intravenous anaesthetics, especially pentothal.
2. Always have a tracheotomy set ready.

The reason why pentothal is so frequently fatal in these cases is not definitely established. It is known that this drug increases laryngeal irritability and it seems likely that its depressant action upon the respiratory and cardio-vascular centres is enhanced in Ludwig's angina. Calley suggests that this may be connected with increased sensitivity of the nerve endings in the carotid body. The point about the tracheotomy set is well illustrated by this case.

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REFERENCE