We felt that it would be interesting to submit these two cases of proved Banti's disease to a thorough serological analysis.

The parents' blood groups were as follows. Father: A₁, MN, P+, C+, D+, E+, e+, Le (a+), Fy (a-), Kell-. Mother: A₁, N, P+, C+, c-, D+, E-, Le (a-), Fy (a-), Kell-. The mother has never received a blood transfusion, and on the basis of the parents' blood groups it can be ruled out that the mother could have formed anti-D during pregnancy. In order to decide whether the mother might have formed other antibodies which possibly might have caused the disease in the two children, her serum was tested against the father's red cells at 5° C., at room temperature, and at 37° C., and a search was made for the possible presence of an incomplete antibody.

The results of all these tests were negative. We could not find in the mother's blood antibodies of any kind which were able to agglutinate the father's red cells. In order, furthermore, to make sure that a possible previously existing antibody might not have been reduced to so low a titre as to be undemonstrable, we utilized the fact that both parents were Group A₁, Rh+. The mother was injected intravenously with 5 ml. of the father's blood. By this procedure a possible dormant antibody would have been restimulated (Race and Sanger, 1950). At the end of a fortnight the mother's serum was again tested against the father's red cells without any complete or incomplete antibodies being demonstrable in the mother's serum. It is thus highly improbable that the present proved cases of Banti's disease could have been due to an incompatibility of the blood groups of mother and child, either within the rhesus system or any of the other known, or so far unknown, systems: the father's red cells must carry the antigens to which the mother might have formed the antibodies causing the disease in the children.

Thus Tidy's theory that blood-group incompatibility between mother and child is an aetiological factor in Banti's disease could not be confirmed in the present cases.

We should like to thank Dr. H. Heckscher, Dr. Poul Iversen, and Dr. Svend Petri, of the Copenhagen City Hospital, for kind permission to make use of case records of their patients; and also Professor Tage Kemp, University Institute of Human Genetics, Copenhagen, for help and advice.

REFERENCES

- Gerrard, J. (1952). *British Medical Journal*, 1, 1385.
Gunn, F. D. (1926). *Arch. Path.*, 1, 527.
Gutzeit, K., and Wendt, H. (1930). *Dtsch. Arch. klin. Med.*, 168, 312.
Race, R. R., and Sanger, R. (1950). *Blood Groups in Man*, p. 156. Oxford.
Tidy, H. (1952). *British Medical Journal*, 2, 1.

Three of the medical films selected for the Royal Photographic Society's 1952 annual exhibition have recently been shown privately. The films were "The Fothergill Operation," "Care of the Colostomy," and "Bacteriological Techniques—Inoculating a Plate." "The Fothergill Operation" (32 minutes, silent, colour), from the Manchester Royal Infirmary, is a straightforward film of an operation, which has been beautifully photographed. In contrast with many other similar films, it really does enable the steps of the operation to be seen and appreciated. Clarity has been aided by the use of simple diagrams, the only criticism being that there are not more of them. "Care of the Colostomy" (20 minutes, silent, colour) is a much less satisfactory film. The first part, which describes the dressing technique for nurses, does so in twice the time that would be taken by a competent sister tutor. The second part contains similar material but directed at the patient, and in this context it is rather more successful. However, it is difficult to visualize the intended audience. Is this part of the film to be shown to each patient as he leaves for home? "Bacteriological Techniques—Inoculating a Plate" (eight minutes, silent, colour), from St. Mary's Hospital Medical School, aims simply at teaching technique. It is intended to replace the half-dozen demonstrations that would be necessary to show the detail of the technique to a class of 50 students.

Medical Memoranda

Friedländer Pneumonia with Massive Necrosis of Lung

Pneumonia due to *Bact. friedländeri* accounted for 0.6% of 5,000 cases of pneumonia studied by Solomon (1937). Hyde and Hyde (1943) give a figure of 1.6%, and in a series of 51 cases report two which recovered following surgical drainage of a lung abscess. Taylor (1944) describes one case. Humphreys (1945) two cases, and Brock (1946) one case in which pneumonia due to *Bact. friedländeri* resulted in sequestration of lung which was successfully treated by surgical drainage. In view of the rarity of the condition and the dramatic findings at operation the following case is worth recording.

CASE REPORT

A man aged 40 was admitted to hospital on September 14, 1949, under the care of Dr. S. Locket, with a two-day history of cough, malaise, and breathlessness. There had been no haemoptysis, pain, or rigors, and he gave no previous history of chest disease.

On examination he was seen to be well covered, but very ill, toxic, dyspnoeic, and slightly cyanosed. His temperature was 102° F. (38.9° C.), pulse 120, and respirations 30. Clinical examination of the chest gave signs of consolidation in the left upper lobe, and a diagnosis of lobar pneumonia was made. There was no herpes, and no abnormality was found in any other system. The sputum was tenacious, small in amount, and not blood-stained. On culture a mixed bacterial flora was obtained. The white-cell count was 12,000 (polymorphs 80%). Radiography (September 17) confirmed the presence of consolidation in the left upper lobe and showed an opacity in the basal portion of the right upper lobe.

Sulphatriad and penicillin in massive doses (1,000,000 units four-hourly) did not have any appreciable effect. Radiography (September 22) showed resolution in the right upper lobe and cavitation in the left. The white-cell count had risen to 24,300 and clubbing of the fingers was developing.

Aureomycin (1 g. followed by 250 mg. four-hourly for 24 hours, and then 250 mg. six-hourly) was given from September 29 to October 12, with a slight improvement in the patient's general condition. His temperature, however, remained between 100 and 103° F. (37.8 and 39.4° C.). Radiography (October 6) showed a large cavity in the left upper lobe—8 cm. in the postero-anterior film—and 12 cm. in the lateral view.

The above therapy was discontinued on October 12 and streptomycin (0.5 g. four-hourly) begun. This produced definite improvement, and his temperature gradually returned to normal over the ensuing week. Pyrexia recurred, however, at the beginning of November, and aspiration produced a small quantity of blood-stained pus, culture of which gave a pure growth of *Bact. friedländeri* insensitive to 16 units of streptomycin per ml.

An operation was performed by Mr. W. D. Park on November 4. When the pleural cavity was opened air escaped, followed by thick odourless pus. The patient became very distressed, started a spasm of continuous coughing, and expelled from the wound, aided by a sucker nozzle, an irregular piece of necrotic lung tissue, approximately 3½ by 2½ by 1½ in. (8.9 by 6.3 by 3.8 cm.). Culture of the pus again gave a pure growth of *Bact. friedländeri*.

After this the temperature became normal within a few days, but a bronchopleural fistula developed. The residual cavity failed to close, and Mr. Vernon Thompson performed a two-stage thoracoplasty. This was successful, and the

patient left hospital on September 29 and resumed work a few weeks later, but the bronchocutaneous fistula still persists.

DISCUSSION

This seems to have been a fairly typical but severe case of Friedländer pneumonia, except that repeated sputum examinations were negative. Necrosis of lung tissue is a common feature on microscopical examination, with the production of multiple thin-walled abscesses which often rupture into a bronchus, but occasionally result in empyema. Belk (1926) reports this as occurring as early as the fourth day. Solomon (1937) mentions six cases with sloughing between the fifth and eleventh days. In our case it was visible on the tenth day. Massive sequestration of a whole lobe or part of one, as described in cases reported by Taylor (1944), Humphreys (1945), and Brock (1946), and in our case, is distinctly unusual other than as a post-mortem finding. A double pneumonic process, such as occurred in our case in which there was a patchy consolidation in the base of the right upper lobe in addition to the main lesion in the left upper lobe, is said to occur in 56% of cases. Mortality is high—Solomon (1937) gave 97% of 32 cases; Perlman and Bullowa (1941) 84% of 37 cases; and Hyde and Hyde (1943) 51% of 51 cases—and 80% of the deaths occur in the first five days from toxæmia and intense pulmonary oedema. Peripheral failure is rare.

The appearances of serial radiography have been classified by Kornblum (1928) and Collins and Kornblum (1929) as follows: (1) primary bronchopneumonia; (2) pseudolobar pneumonia; (3) multiple abscess formation and cavitation; and (4) fibrosis simulating tuberculosis. This progressive nature of the lesion was well exemplified in our case, except that stage 4 did not occur.

Streptomycin seems to be the most effective antibiotic. Nataro *et al.* (1950) give a summary of 10 successfully treated cases from the literature and add two of their own. They quote the case of a patient, described by Rosenthal, who made a successful recovery, although streptomycin therapy was not begun until the fortieth day of the illness. In our case this treatment was begun 30 days after the onset, and 69 g. was given. Aureomycin had no obvious effect, although the patient received 15 g. in all over 13 days. Nataro *et al.* report a dramatic improvement within 24 hours in their patient treated with 1 g. six-hourly for five days. This patient had been ill 11 days and cavitation was not present. In our case the antibiotic was not given until the seventeenth day of the illness, at which time cavitation was radiologically apparent.

Surgery seems to have been life-saving in our patient, although he still has a minimal amount of discharge from a small fistula. Solomon (1940) states that in this condition the fistulae resulting from surgery drain interminably. He believes that most abscesses will drain through a bronchus, if aided by posture and repeated bronchoscopy.

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REFERENCES

- Belk, W. P. (1926). *J. infect. Dis.*, **38**, 115.
Brock, R. C. (1946). *Guy's Hosp. Rep.*, **95**, 40.
Collins, L. H., jun., and Kornblum, K. (1929). *Arch. intern. Med.*, **43**, 351.
Humphreys, D. R. (1945). *British Medical Journal*, **2**, 185.
Hyde, L., and Hyde, B. (1943). *Amer. J. med. Sci.*, **205**, 660.
Kornblum, K. (1928). *Amer. J. Roentgenol.*, **19**, 513.
Nataro, M., Shapiro, D., and Gordon, A. T. (1950). *J. Amer. med. Ass.*, **144**, 12.
Perlman, E., and Bullowa, J. G. M. (1941). *Arch. intern. Med.*, **67**, 907.
Solomon, S. (1937). *J. Amer. med. Ass.*, **108**, 937.
— (1940). *Ibid.*, **115**, 1527.
Taylor, J. W. (1944). *British Medical Journal*, **2**, 500.

Antiperistaltic Movement of a Foreign Body in the Colon

Foreign bodies introduced into the rectum are not rare. Most pathological museums contain several specimens. Often such foreign bodies are small glass bottles, though other objects have been removed from this situation. A foreign body, however, which has been introduced into the rectum and subsequently ascended the bowel, producing perforation of the descending colon, is very rare.

CASE REPORT

A man aged about 50 was admitted to hospital on January 2, 1951. He stated that he had pushed a bradawl into his rectum two days before admission. He was obviously very ashamed of the whole incident and did not wish it to become known why it was introduced. An abdominal x-ray picture showed the foreign body well up in the descending colon (Fig. 1). Examination of the abdomen revealed some tenderness and some guarding over the line of the descending colon, and a diagnosis of perforation of the colon was made.

FIG. 1.—Radiograph showing bradawl with handle almost up to the splenic flexure.

At operation the descending colon was explored through a muscle-cutting incision in the left iliac fossa. The bradawl (Fig. 2) was palpated, the handle being wedged in the splenic flexure, and the point had perforated the descending colon. There was early peritonitis in the vicinity. The point of the instrument was grasped in a strong clamp and pulled downwards. The bowel was then incised in its longitudinal axis on to the handle of the bradawl. The foreign body was removed and the incision in the colon stitched in two layers transversely. A small drain was left in down to the site of the suture.

FIG. 2.—The bradawl after removal.

The patient made an uninterrupted recovery from his operation, and was discharged to a convalescent home seven days after admission.

COMMENT

An interesting feature of this case is the mechanism by which this foreign body ascended the colon from the rectum. It would seem probable that peristaltic waves forced their way over the handle of the bradawl while the point was fixed in the mucosal folds of the intestine. Relaxation of the peristalsis produced ascension of the instrument. A similar mechanism is seen in threading a cord through the top of a pair of pyjama trousers. It was not until the handle became fixed at the splenic flexure that peristaltic waves produced enough thrust to drive the point of the bradawl through the wall of the bowel. No reference to a similar case has been traced in the literature.

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