Nature of the Operation

The operation of choice is that generally described as the modified Gilliam operation, after the name of the surgeon who first described this operation in the year 1900. The principal points in the operation are that a loop of the round ligament on each side is brought out under the peritoneum and attached to the anterior rectus sheath on each side. Details of the operation are as follows.

The abdomen is opened by a paramedian incision. A stitch of No. 3 chromicized catgut is tied about the round ligament on each side an inch from the cornu of the uterus. The anterior rectus sheath is then cleared, and a small puncture is made towards the outer part at the level of the fundus of the uterus. A special curved forceps is then passed outwards behind the peritoneum till the region of the internal abdominal ring is reached. The forceps then turns inwards in the base of the broad ligament till its point reaches the ligature on the round ligament. The peritoneum is then punctured, the round ligament suture grasped with the forceps and withdrawn along the track made by the forceps through the rectus sheath. The loop of round ligament is then made fast to the rectus sheath and the abdomen closed. The suture material used is No. 3 chromicized catgut, as this has been found satisfactory and no recurrence has occurred.

This operation has stood the test of time and has given complete satisfaction. It has therefore seemed unnecessary to change the technique of the operation or the suture material. In order to confirm these points, letters were written to patients operated upon from two to fourteen years ago, inquiring as to the result of the operation. The replies were illuminating and highly satisfactory.

Modifications of Operation

In order to test my own results I sought the opinion of the senior gynaecologists of the London teaching schools as to the nature of operation employed. All appear to employ a modified Gilliam operation, and find it eminently satisfactory. Many seem to prefer the use of silk, and some think it essential. Many, however, give up puncturing the rectus sheath, and draw the loop of round ligament up between the outer surface of the rectus muscle and the under surface of the rectus sheath. One operator pleats up the round ligament before drawing it through to the under surface of the rectus sheath, to which it is firmly attached by silk, thus approaching the technique of a fixation operation. Another operator pleats up the round ligaments and attaches them to the cornu of the uterus; while a third combines the ventral suspension of the uterus with shortening of the utero-sacral ligaments. Except for these three modifications, all do the modified Gilliam operation, and are satisfied with the results. The majority use silk sutures, but I have found chromicized catgut satisfactory, and think that silk introduces a possible element of sepsis.

Conclusions

Retroversion of the uterus is responsible for a considerable amount of ill-health in women. It may be prevented or cured during the puerperium by suitable exercises and treatment.

Congenital retroversion in single women often causes no symptoms and requires no treatment.

Congenital retroversion in married women does cause symptoms.

Retroversion acquired after labour or miscarriage is common, and the importance of preventive treatment is stressed.

Acquired retroversion often gives rise to symptoms, and requires correction by pessary or operation.

HAEMOPTYSIS: A NOTE ON PATHOLOGY AND TREATMENT

BY

H. V. MORLOCK, M.C., M.D., M.R.C.P.

AND

A. J. SCOTT PINCHIN, M.D., F.R.C.P.

PHYSICIANS TO CITY OF LONDON HOSPITAL FOR DISEASES OF
HEART AND LUNGS

Haemorrhage from organs such as the lungs and intestines, which are not accessible to the ordinary surgical methods of haemostasis, present a problem which is peculiar to itself; for not only does the practitioner feel more or less helpless, as he is unable to reach the bleeding point, but the psychological effect on the patient of bringing up large quantities of blood—whether from lungs or stomach—together with the knowledge that the lesion is not accessible, leads to a distress of mind which reacts unfavourably on the natural processes which should physiologically help to stay the haemorrhage.

The usual treatment recommended for haemoptysis is along the general lines suggested for the arrest of bleeding when not accessible to direct methods of haemostasis; these general methods have two objects in view, which are as follows. In the first place, to secure a local effect by the administration of drugs or other preparations which have the reputation for promoting clotting at the source of the haemorrhage by increasing the coagulability of the blood; secondly, to endeavour to rest the organ from which the bleeding is taking place, and by sedatives to quiet the body, ease the mind, and so cause a reduction in the rate of flow of the blood.

Preparations used in the first group, such as calcium, haemostatic sera, horse sera, etc., whilst possibly of some use are somewhat unreliable in their action, and, in consequence, though used as a routine, they are regarded as rather accessory, and there is a natural tendency to place most reliance on those methods which will promote mental quiet and physical rest to the organ from which the haemorrhage is proceeding, and thus give the bleeding vessel the opportunity of forming a clot sufficient to stay the haemorrhage.

Pathology and Mechanics of Haemoptysis

Should these methods be successful in stopping the haemorrhage the arrest is only slowly produced, with the result that some bleeding will continue to take place for varying periods, according to the size of the vessel eroded, while in addition any movement or disturbance of the patient may cause the haemorrhage to recommence, and as a result a considerable amount of blood will be found in the lumen of the organ concerned.

If the bleeding is intestinal the blood in the lumen will be drained into the intestinal tract, but in a haemoptysis the blood remains in the bronchus and can only be evacuated therefrom by the patient coughing; if, however, the patient has been forbidden to cough, and has been heavily morphinized, the cough reflex will be lost, and the blood will remain in the bronchus. It is well recognized that even during natural sleep secretions from the upper respiratory tract may be aspirated into the lower bronchi; further, it is admitted that, when unconsciousness is increased by morphine or basal anaesthetics, aspirated secretions may cause a pulmonary collapse. In the morphinized patient, with blood or blood clot in the bronchial tree, the chances of mechanical pathological changes taking place are very considerable.

If the quantity of blood in the bronchus is small, aspiration into the smaller bronchi and bronchioles will take place; further, if the patient gives a half-stifled ineffective cough, the blood will be evacuated from the

bleeding bronchus as far as the bifurcation of the trachea, or into the trachea itself, ready to be sucked down by the next inspiration, not only into the diseased lung, but into the healthy one as well. If the cause of the haemoptysis is a septic or a tuberculous lesion, organisms will be aspirated with the blood and will often give rise to a spread of the infection. This spread of the disease is indubitably seen to occur in septic conditions, and is not uncommon in tuberculosis. The reason that it does not occur more often is probably the dilution obtaining in large haemorrhages. If the haemorrhage is a copious one the coagulated blood often forms a clot within the bronchus, which clot is sometimes large enough to occlude a main bronchus, thus producing a sudden complete collapse of a lobe or even the whole lung; moreover, if by an ineffective cough the clot be extruded into the trachea, aspiration may take place into the main bronchus of the sound lung and cause a complete collapse of it.

Illustrative Cases

These mechanical pathological lesions are not merely theoretical possibilities, but are practical facts which we have ourselves observed and of which the following cases are examples.

Case I.—Male, aged 45, suffered from haemoptysis which was treated on general lines. A skiagram taken a few days later showed in the right upper lobe a lesion bronchopneumonic in distribution which was thought to be a tuberculous condition. Two weeks later a skiagram showed collapse of right upper lobe; on bronchoscopic examination we could see new growth occluding the upper lobe bronchus. There can be little doubt that the bronchopneumonic area seen on the first skiagram was produced by lobular collapse secondary to aspirated blood.

Case II.—Male, aged 22. Haemoptysis treated on general lines. When admitted to hospital definite signs at left upper lobe, with signs suggestive of a small area of bronchopneumonia in the right axilla. Sputum, T.B. +. To control the haemoptysis left artificial pneumothorax induced. Haemoptysis ceased and patient improved. Skiagram at this stage confirmed diagnosis of left-sided pulmonary tuberculosis, and showed a small area of bronchopneumonia of lobular distribution in right axilla. Artificial pneumothorax kept up. Sputum became negative. Area in right axilla cleared. We believe that the area in the right axilla was an aspiration spread due to the haemoptysis. It might be argued that it was the spread that led to the haemoptysis, but against this is the fact that it was controlled by the left-sided artificial pneumothorax. As no films were available previous to the haemoptysis the point cannot be definitely settled.

Case III.—Female, aged 40. Patient had a benign growth of left main bronchus. During an attempt to remove the growth by diathermy severe haemoptysis occurred, which was uncontrollable by diathermy and adrenaline. Within twenty-four hours the previously afebrile patient developed a high temperature, with signs of pulmonary collapse of lobular distribution. This was treated by expectorant mixtures and CO₂ inhalations, and the signs in the chest cleared. This sequence was repeated when a second attempt was made to apply diathermy to the growth.

Case IV.—Female, aged 23. Patient had the same type of growth, and diathermy treatment was followed by same sequence of events as in the previous case.

Case V.—Male, aged 16. Large haemoptysis, treated by absolute rest and morphine. On his admission to hospital the physical signs in the chest were those of complete collapse of the left lung. Skiagrams confirmed the diagnosis. The haemoptysis having nearly ceased, it was decided to risk further haemorrhage and to deal with the collapse by CO₂ inhalations and expectorant mixtures, with the result that the clot was expectorated, and in the course of a few days the left lung re-expanded to show a comparatively small tuberculous lesion in the mid-zone.

Case VI.—Female, aged 20. Patient was known to have a small unhealed lesion in right upper zone, and was admitted

to hospital following a large haemoptysis which had been treated on general lines. A few indefinite signs were found in the right lung, and signs of complete collapse of the left lung. This was confirmed by skiagram. After a few days following the coughing of clotted blood, the left lung expanded completely, and the skiagram showed no evidence of any disease in it.

Haemostasis by Congo Red

Experience as exemplified by these cases has led us to the conclusion that the measures adopted under the second group—that is, the use of opiates—are not without danger, and this applies to any drug which definitely abolishes the cough reflex. It would seem not unnecessary that this point be stressed, for one seldom sees a case of haemoptysis in which a large dose of morphine has not been previously given. We agree that it is necessary to reassure the patient, to lessen his anxiety, and to put his mind and body as much at rest as possible, but we are convinced that it is bad treatment to order the patient not to cough, and deliberately to attempt to abolish the cough reflex.

It is well to point out that in early tuberculosis, in acute septic pneumonitis or lung abscess, or in haemorrhagic bronchiectasis, it is seldom that a haemoptysis is severe enough to endanger life, and therefore it is certainly not justifiable to employ a method which may by its application cause a spread of disease. On the other hand, in the advanced tuberculous case with large rigid-walled cavities, in malignant growth, and in leaking aneurysm the prognosis is in any case so poor that the objection to morphine does not hold.

If the use of sedatives is inadvisable it is certain that endeavour must be made to find some reliable haemostatic; those mentioned above have been in use a sufficiently long period of time to prove their deficiencies, though they certainly have their place in treatment. For some two years, in those cases in which haemostatics of this class had failed to effect a result, we have used an intravenous solution of Congo red. This haemostatic appears to have been little used in this country. It was recommended by Becker *et alia* in 1930 for use in haemorrhage.

The precise pharmacological action is not known, but Sachette and Osseladore¹ found that after the intravenous injection of neutral substances into rabbits, changes in the clotting time of the blood took place. In the beginning this change was accompanied by a numerical variation in the thrombocytes, and they formed the conclusion that the reticulo-endothelial system, especially the bone marrow, influenced the production of the thrombocytes.

Becker² *et alia*, from examination of the blood of their cases before and after the injection of Congo red, came to the following conclusions. That the Congo red produced: (1) an increase in the monocytes, (2) an increase in blood platelets, (3) an increase in blood fibrin content, and (4) a reduction in clotting time.

Technique.—The technique of administration is that of a simple intravenous injection, though, the colour of the solution being a deep red, some difficulty may be experienced in knowing when one has entered the vein. We have found from experience that dosage is of considerable importance. For an adult the dose usually given is 10 c.cm. of a 1 per cent. solution. This dose is often followed by a definite rigor of short duration which never gives cause for alarm. In an attempt to avoid the rigor we have tried smaller doses, and have found that although they may succeed in checking the haemorrhage temporarily they are not as successful in obtaining complete stasis as is the full 10 c.cm. dose. We have not so far had need to give a larger initial dose

than 10 c.cm., and from our experience in one case in which by an error double the dose was given we doubt if an increase is advisable, for in that case the patient developed a severe rigor with an alarming collapse; nevertheless, the haemorrhage which had menaced his life and had failed to be controlled by other haemostatics ceased instantly. We have found that occasionally the 10 c.cm. will check the haemorrhage for some time, and then slight recurrence occurs. In such cases the dose may be repeated, a further 10 c.cm. being given in four to six hours. In a large number of cases treated with this drug we have only had two in which the haemoptysis was not sufficiently controlled and other methods were necessary.

Other Methods

In cases of gastric and duodenal haemorrhage results have also been satisfactory, though perhaps not quite so certain as in haemoptysis. Other methods of obtaining stasis which have been suggested, such as the introduction of adrenaline into the bronchial tree, have not impressed us with their efficacy. Adrenaline may be introduced by the nasal catheter, crico-thyroid route, or by the bronchoscope. We have used the first two methods, but in any case the solution is so diluted with blood that effect can scarcely be expected; moreover, the bleeding point is usually so distant in the bronchial tree that it is unlikely that any direct result could be produced. Quite different are the severe and somewhat alarming haemorrhages which occasionally take place in the removal of polyps or a section of malignant growth via the bronchoscope; in this case adrenaline can be applied direct in large quantity over the bleeding area.

In the event of failure of other methods, the induction of an artificial pneumothorax is often successful in staying the haemorrhage. The cause of the haemoptysis must, however, first be considered. If the lesion is an early tuberculous one it will probably be successful, but in these cases the bleeding is usually not so severe as to cause alarm; if the lesion is in an advanced bilateral case artificial pneumothorax may be done as a temporary measure, even if it may be deemed inadvisable to keep it up permanently. In this type of case difficulty may arise in deciding as to the side from which the haemorrhage is coming. If an X-ray is available then the side showing a cavity is the most likely to be the offender, if not, one has little guide, as the ordinary methods of physical examination are not available. Often, however, the patient knows which is the worst side, and in many instances is able to indicate the side from which the bleeding is coming from subjective sensations. But as a contralateral artificial pneumothorax may be successful in stopping the haemorrhage, the position is not quite so difficult as it might appear. If the lesion is a lung abscess or a bronchiectasis, one must weigh up very carefully the urgency of the haemoptysis with the risk, especially in the former case, of producing a pyo-pneumothorax. Occasionally repeated haemoptyses call for some preventive measure. Such are frequently cases of dry bronchiectasis and chronic fibrosis, and an artificial pneumothorax or phrenic avulsion may be a useful procedure.

Conclusions

In a pulmonary haemorrhage the bronchi must be kept free. This can only be attained by leaving the patients their cough reflex. Some method of haemostasis is desirable, and in the failure of the ordinary methods Congo red has proved in our experience to have a very definite use.

REFERENCES

- ¹ Sachette and Osseladore: *Giorn. Clin. Med. I. G.*, 1926, vii.
- ² Becker, J.: *Münch. med. Woch.*, 1930, lxxvii, 397; Wedekind, T., Becker, J., and Weinert, B.: *Ibid.*, 1930, lxxviii, 2049.

OBSERVATIONS ON THERAPEUTIC MALARIA

WITH SPECIAL REFERENCE TO A CASE
OF HAEMOGLOBINURIA

BY

C. B. BAMFORD, M.D., M.R.C.P., D.P.M.

ASSISTANT MEDICAL OFFICER, RAINHILL MENTAL HOSPITAL

Malaria is still the most popular of all forms of treatment for general paralysis in spite of the numerous attempts which have been made to supersede it by other forms of pyrexial therapy. Its popularity with clinicians is derived not so much from the high measure of complete recoveries achieved as from its relative immunity to serious accidents. In thus combining a moderate degree of success with comparative safety, it has proved itself superior to, and generally more acceptable than, any of its rival methods of treatment.

The truth of this claim has been amply borne out by our experience of some 300 cases of therapeutic malaria during the last ten years at Rainhill Mental Hospital. With a judicious selection of cases the number of untoward complications has been almost negligible, and the great majority of patients have succeeded in completing a course of ten rigors, with associated rise of temperature, at no greater cost to the patient than a mild prostration and some degree of anaemia. With adequate after-treatment both of these temporary set-backs have been successfully combated. In about 10 per cent. of the cases a mild degree of jaundice has been observed, associated with the anaemia appearing towards the end of the malarial course, but in all instances clearing up completely after the administration of quinine.

Both the benign tertian and quartan forms of malaria have been employed at different times, but of the two the former has proved the more satisfactory. In our experience the quartan is less reliable, and not so readily controlled with quinine. Despite this, relapses are of very rare occurrence. As will be noted from the accompanying temperature chart the rigors sometimes occur at much more frequent intervals than is characteristic of this strain of malaria. This phenomenon is by no means an uncommon experience with therapeutic malaria, particularly after many generations of the parasite have passed through the human host, and in our opinion is attributable to the fact that propagation is carried on solely by the asexual cycle for so many generations. Blood films examined from such sources show that the parasites mature at different periods, and in the same sample of blood parasites at all stages of development are to be seen. This offers some explanation of the irregular pyrexia, but, in addition, there is some evidence for thinking that there may be a personal factor also concerned.

Case Record

A case which provides an outstanding exception to this general experience has recently been encountered at Rainhill, and because of its unusual features it is deemed worthy of a detailed consideration.

G. H., a male, 46 years of age, was recently admitted to the hospital in a restless, excited, and grandiose state. He had typical delusions of grandeur, and clinically presented a classical case of general paralysis. Though he had few neurological signs, the clinical diagnosis was amply confirmed by serological tests. Thus the Sigma reaction in blood and cerebro-spinal fluid was strongly positive, there was increased protein in the cerebro-spinal fluid, and the large gold-sol curve read 5555554100. The mental symptoms had only been in evidence for just over a fortnight prior to his admission, and as he was in good physical condition there was no hesitation in prescribing for him a course of malaria. Before