

[January 14, 1955]

Multiple Tuberculous Bronchial Stenosis.—K. M. CITRON, M.D., M.R.C.P. (for J. G. SCADDING, M.D., F.R.C.P., and W. P. CLELAND, M.R.C.P., F.R.C.S.).

Mr. D. S., aged 31.

History.—1940: Tuberculous cervical lymph nodes excised. Remained well until October 1951 when cough and sputum with dyspnoea on exertion developed.

February 1952: Increasing symptoms; chest radiograph (Fig. 1) revealed consolidation of

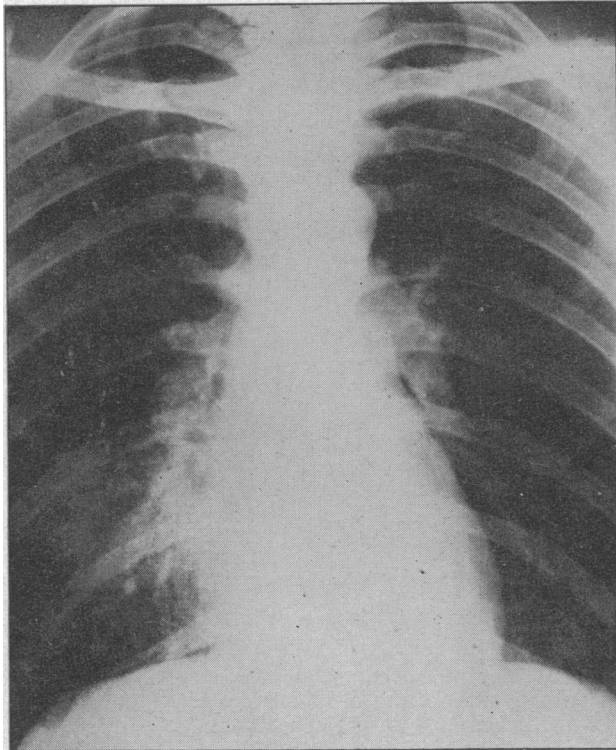


FIG. 1.

right middle lobe and a few faint mottled shadows on both upper zones. The middle lobe shadows cleared in three months without treatment but symptoms persisted with increased, occasionally blood-stained, sputum.

December 1952: Acute febrile illness with right pleuritic pain. Radiograph showed right lower zone shadows which cleared slowly. Bronchoscopy revealed no abnormality at this stage. During 1953 dyspnoea was severe, associated with loud wheezing, and he was unable to return to work as a toolmaker.

October 1953: Consolidation-collapse of anterior and posterior segments of right upper lobe, with slow clearing.

January 1954: Admitted to Brompton Hospital.

On examination.—General condition poor. Respiration was laboured with stridor and prolonged wheezy expiration. Rhonchi all over the chest, especially persistent during inspiration on the right side.

Investigations.—Bronchography revealed, on the right (Fig. 2), stenoses of upper lobe bronchi, right main descending bronchus and basal bronchi. Right middle lobe failed to fill. On the left (Fig. 3) there were stenoses of the upper lobe bronchi and lingular bronchus.

At bronchoscopy the right middle lobe bronchus was seen to be stenosed. Biopsy from this site showed greatly thickened bronchial mucosa due to the presence of tuberculous granulation tissue undergoing fibrosis in which there were a number of typical tubercles with little caseation. Sputum one ounce daily, purulent. 24 cultures negative for *M. tuberculosis*. Mantoux positive 10 T.U., P.P.D.

Treatment.—Streptomycin 1 gram and PAS 20 grams daily, later isoniazid 200 mg. and PAS 12 grams daily, together with cortisone 100 mg. daily, gradually reduced to 37.5 mg. The cortisone was given in an attempt to prevent further fibrosis occurring in the indolent tuberculous granulation tissue in the diseased bronchi. It also diminished bronchospasm.

Three months later, bronchoscopy showed the right upper lobe bronchi lined by rather bluish granulation tissue and the middle lobe stenosis less severe. Biopsy showed the same pathology as before.

Now after one year's continuous treatment dyspnoea is less with increase of vital capacity from 2,800 ml. to 4,600 ml. and M.B.C. from 28 litres/min. to 43 litres/min. and he has been able to return to work.

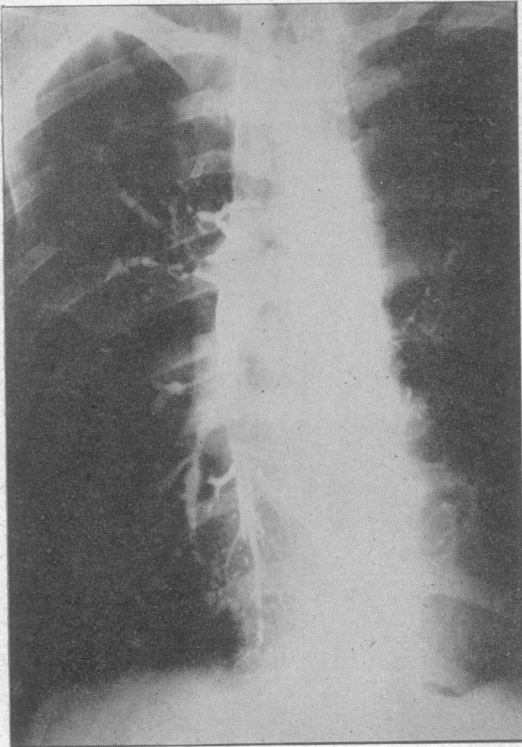


FIG. 2.

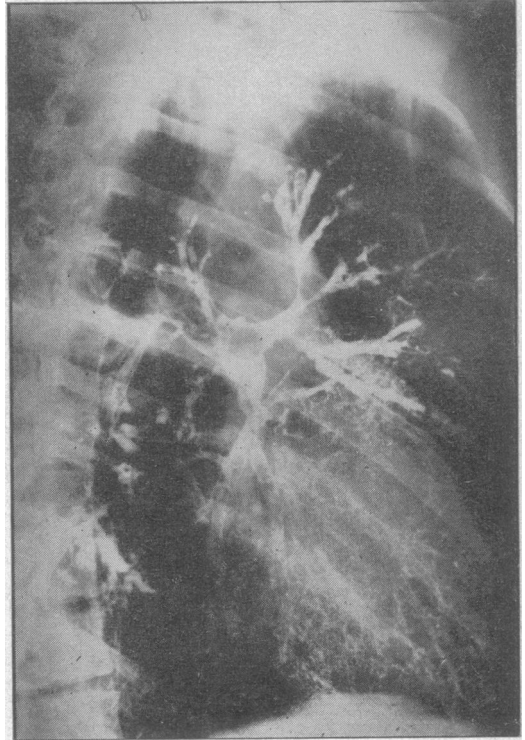


FIG. 3.

Comment.—Tuberculosis of the bronchial tree is known to occur frequently in pulmonary tuberculosis particularly in the presence of cavitation in the lung and with tubercle bacilli in the sputum.

This case is unusual because although generalized bronchial tuberculosis is present the lung itself appears to be free of obvious tuberculous disease and *M. tuberculosis* has not been found in the sputum.

In addition to this case other patients have been seen in whom the tuberculous process was extensive but apparently confined to the bronchial tree. They have presented with symptoms and signs of chronic bronchitis, often with severe dyspnoea, the course of the illness being punctuated by episodes of segmental or lobar pulmonary consolidation.

The chest radiographs did not suggest pulmonary tuberculosis and sputa did not contain tubercle bacilli. Tuberculin sensitivity tended to be low. Bronchoscopy demonstrated diffuse bronchitis, the tuberculous nature of this being revealed by bronchial biopsy. Response to antibacterial treatment alone tends to be disappointing, and there would appear to be a place for the use of cortisone in combination with anti-tuberculosis drugs.

Dr. J. L. Livingstone: This is an unusual and interesting case, making more difficulties for the chest physician. The clinical term "endobronchial tuberculosis" usually denotes the case with a positive sputum and negligible radiological shadows: subsequent bronchoscopy reveals endobronchial ulceration, infiltration or stenosis. This case presents with recurrent areas of atelectasis and

repeatedly negative sputum: bronchography demonstrates multiple bronchial stenoses. It is only after bronchial biopsy that tuberculosis can be diagnosed.

I have not recognized such a case myself and would like to label the syndrome "endobronchial sarcoidosis," in spite of a minor degree of caseation in the microscopic slide, but this is dangerous ground.

Carcinoma of the Bladder Treated by Total Cystectomy with the Formation of an Ileocæcal Bladder.—J. O. ROBINSON, M.B., F.R.C.S. (for E. G. TUCKWELL, M.Ch., F.R.C.S.).

W. W., male, aged 42. Brewery labourer.

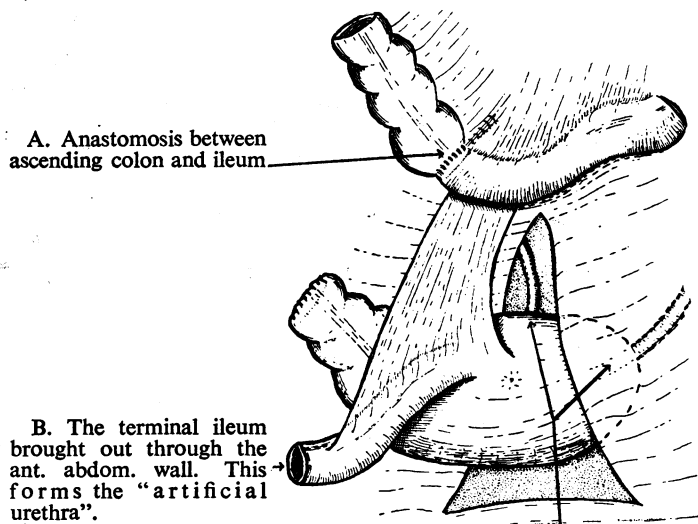
History.—Nine months' intermittent attacks of hæmaturia associated with an infected urine.

On examination.—No abnormality detected.

Investigations.—Mid-stream urine: deposit showed pus cells and bacteria. Culture: growth of coliform bacilli and streptococci. I.V.P. good excretion, no hydronephrosis. Cystoscopy: Large papilliferous growth above right ureteric orifice, and a second smaller growth on the lateral side of the left ureteric orifice.

The bowel was prepared with Sulfathalidine 3 grams t.d.s. for five days.

Operation.—Stage I (9.10.52): Right oblique incision. Ileum divided 6 in. from ileocæcal valve, ascending colon divided approximately 4 in. above ileocæcal valve: ileum anastomosed to ascending colon to restore bowel continuity. Colic end of isolated ileocæcal loop closed, appendix removed. Both ureters transplanted into posterior cæcal wall which was stitched to retroperitoneal tissue. Terminal ileum brought out through incision (Fig. 1).



C. The ureters transplanted into the post. cæcal wall behind the peritoneum.

FIG. 1.—Formation of an ileocæcal bladder.

Post-operative progress.—General condition remained satisfactory. Blood urea rose to 268 mg. % and the alkali reserve fell to 37.5 vol. of CO₂ % on the third day. By the tenth post-operative day the blood chemistry was within normal limits. No specific corrective treatment was used. I.V.P. showed only mild hydronephrosis. The bladder required frequent washouts with sodium bicarbonate to prevent mucus blocking the indwelling catheter.

Operation.—Stage II (17.10.52).—Total cystectomy.

Section report.—Transitional cell carcinoma with evidence of infiltration of the underlying muscle.

Progress.—The patient is alive, well and at work two years after operation. He has gained 2 st. in weight. The blood chemistry remains normal and there is no hydronephrosis. He has been fitted with a straight St. Peter's suprapubic tube, which passes through a rubber flange fixed to an abdominal belt. The St. Peter's tube drains into a rubber urinal strapped to the side of his leg during the day, and into a bottle under his bed at night.

Mr. E. W. Riches: This is an excellent result, but it should not be assumed that the ileocaecal or ileal "bladder" has completely replaced the older form of operation. I consider that there is still a place for the uretero-sigmoid anastomosis, particularly in a young person with normal kidneys. By this method one avoids the disadvantage of a permanent urinary fistula and acidosis can be controlled if it occurs. The anastomosis should be of the semi-valvular type which, on the whole, ensures the avoidance of post-operative hydronephrosis.

External Iliac Artery Obstruction Bridged by an Orlon Graft.—RUSSEL H. LEE, M.D. (for Professor J. B. KINMONTH, M.S.).

J. E. H., male, aged 62. Clerk of Works.

History.—For the past two years he has had pain in the left calf on walking which has steadily increased in severity to a point where he is now unable to work. The pain appeared at first after 200 yards of brisk walking, now after 75 yards slow walking.

On examination.—Left foot colder than the right and blanched quickly on elevation.

Pulses	Right	Left
Femoral	++	0
Popliteal	+	0
Dorsalis pedis	+	0
Post. tibial	+	0

Investigations.—Aortogram revealed obstruction of the left external iliac artery. The common femoral and distal arteries on the left were patent.

Operation (Professor J. B. Kinmonth).—A tube made of Orlon fabric was anastomosed to the common iliac artery above the block and to the common femoral artery below the block. Anastomosed side to side.

Post-operative course.—Two months post-operative he is able to walk three-quarters of a mile without claudication. All pulses now present on the left as well as the right.

Discussion.—This patient is an example of arteriosclerotic obstruction of the left external iliac artery whose presenting symptoms were those of incapacitating progressive claudication. The block was by-passed by anastomosing a tube of Orlon side-to-side to patent artery above and below the block. Side-to-side anastomosis was used to avoid disturbing the existing collateral circulation.

Orlon is a synthetic acrylic resin whose fibres can be woven into a plastic fabric that may then easily be fashioned into tubes of any size or shape. It is distributed in England, is inexpensive and readily available.

Experimentally we have found that tubes constructed of woven Orlon fabric when placed in large arteries or used to bridge arterial blocks remain patent, become lined with a thin glistening layer of hyaline collagenous tissue, the innermost layer being indistinguishable from intima, and they are encased by a thick layer of fibrous tissue. We have observed no harmful effect of these Orlon tubes in animals, and they have the advantage over solid sheets of plastic in that they are ingrown with fibroblasts rather than surrounded and walled off as a foreign body. Infection has not been a problem. They have the advantage over homografts in ease of obtaining, ease of sterilizing, and ease of fashioning into any size or shape. Prolonged follow-up has not yet been possible.

Professor J. B. Kinmonth: Orlon was chosen as a suitable material for this purpose because its weave and texture were correct and because it was easily available in this country. It is necessary to use woven material rather than a continuous film so that the host tissue can grow into the pores and embody the prosthesis into the new structure that is formed.

Initial trials were made in dogs where aorta and iliac vessels were replaced with Orlon prostheses. When these proved satisfactory it was possible to use the method clinically. We have now used these prostheses on three occasions. In one case renal failure caused death five days after an operation in which an abdominal aortic aneurysm was resected and the bifurcation replaced with Orlon because the aneurysm had commenced to rupture. At autopsy the prosthesis appeared patent and functional. The second case is that reported here. The third case, also successful, was another of aneurysm of the abdominal aortic bifurcation which was replaced by Orlon.

We have not so far used Orlon tubes clinically to replace the femoral or smaller vessels. We await the results of further experiments on the smaller arteries of animals, particularly in places where the prosthesis will be subjected to repeated bending or folding, such as the groin or knee regions.

Polycythæmia, Myelofibrosis. Splenectomy, Myeloid Leukosis and Polycythæmia.—RICHARD ASHER, M.D., F.R.C.P.

W. B., male, aged 49. Engineer.

1947: First attended with a right spontaneous pneumothorax. Found to have polycythæmia vera—plethoric complexion. Hb 118%. R.B.C. 6,900,000. P.C.V. 73%. Liver and spleen enlarged 2 in.

1948: Still polycythaemic. Hb 126%. R.B.C. 6,600,000. No treatment.

1949: Hb 102%. R.B.C. 4,700,000.

1950: Readmitted with second spontaneous pneumothorax. Hepatosplenomegaly still present. Hb 74%. R.B.C. 3,000,000. W.B.C. 6,400. Sternal puncture very difficult. Iliac crest biopsy—"myelofibrosis".

Next three years.—Spleen gradually enlarging (Fig. 1). Hb remaining around 80%. Well and at work.

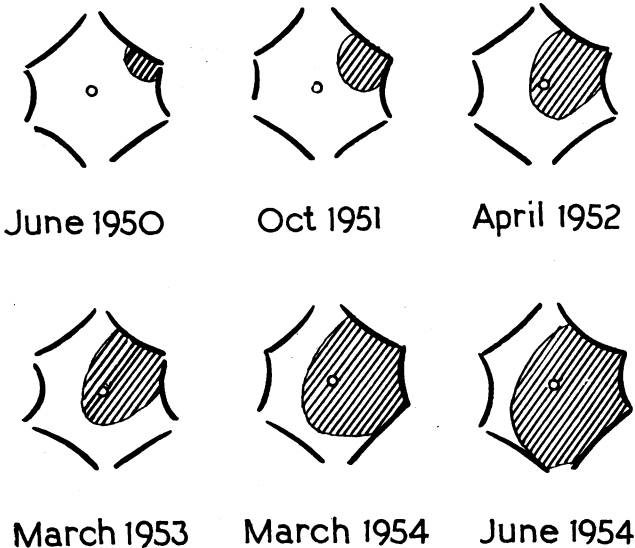


FIG. 1.—Sketches taken from Out-patient notes to show progressive enlargement of the spleen.

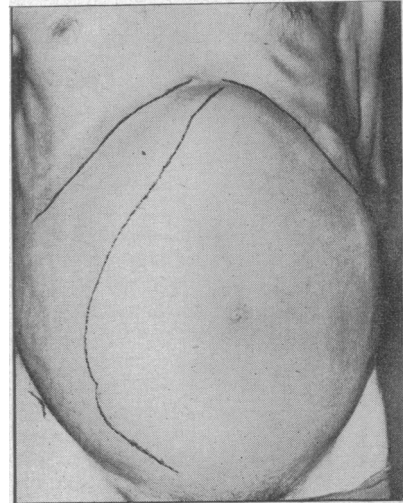


FIG. 2.—30.6.54: Size of spleen before operation.

1954: Spleen now reaching right iliac fossa. Hæmoglobin falling. Admitted 26.6.54 dyspnoic and complaining of abdominal fullness.

On examination.—Anæmic clinically. Spleen enormous and reaching right iliac fossa (Fig. 2). Hb 54%. W.B.C. 10,000. Normal differential except 7% myelocytes. After raising Hb to 71% by transfusion splenectomy was performed 8.7.54 (Mr. T. G. I. James). The spleen weighed 4 kg. and showed marked myeloid metaplasia. The liver was enlarged and firm. A large posterior duodenal ulcer with pyloric stenosis was found and posterior gastroenterostomy performed. Post-operative recovery was uneventful.

Progress since operation.—The day after operation there was a rapid rise of white cells, total 37,000/c.mm. (77% polymorphs, 14% primitive forms, 2% lymphocytes). Clinically he made rapid improvement in well-being and strength and was discharged on August 1 with Hb 69%, and 55,000 W.B.C. per c.mm. Two months later he had gained nearly 2 st., felt absolutely well and returned to work but the W.B.C. were 82,000 per c.mm. and the liver was enlarged to the umbilicus. December 1954: Complaining of abdominal distension. Slightly tired and dyspnoic. Liver now 10 in. below xiphisternum. Hb 134%, R.B.C. 6,500,000, W.B.C. 57,000. (Polymorphs 86%, lymphocytes 7%, myelocytes 6%.)