been impossible. Nasal intubation under local analgesia does not seem to be unduly difficult in these circumstances. The precaution was taken not to give thiopentone until the respiratory obstruction was overcome. Davidson *et al.* (1949) have stated that the local swelling tends to diminish in 24 to 36 hours. The critical phase in our case lasted four days, and no deleterious effects seemed to result from intubating the trachea for that period of time. There is no doubt that the absence of chest complications was largely due to the post-operative nursing care and to the assiduous bronchial toilet.

Summary

A case of respiratory obstruction in a haemophilic patient is described. This complication was due to a spontaneous interstitial haemorrhage into the tongue and the floor of the mouth. Three other cases from the same hospital are cited.

The management of the case reported consisted of blood transfusion, a submental incision, and nasotracheal intubation.

It would seem that intubation presents certain advantages over, and may be preferable to, tracheotomy in the treatment of this medical emergency. A Magill nasotracheal tube left in place for four days caused no obvious damage to the vocal cords.

We wish to thank Dr. J. A. W. McCluskie and Mr. E. G. Gerstenberg, in whose wards the patient was treated, for permission to publish this case.

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A CASE OF TALC GRANULOMA SIMULATING CARCINOMA

BY

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Post-operative complications arising from the use of talc as dusting powder for surgical rubber equipment were first described by Antopol (1933). Experimental talc granulomas were produced in dogs by Lichtman *et al.* (1946), and many cases of post-operative adhesions have been attributed to the use of talc in the last decade. Mackey and Gibson (1948) described a talc granuloma which was found 13 days after laparotomy. Walker (1948) reported a death from general peritonitis following small-bowel obstruction due to talc adhesions following the repair of strangulated femoral hernia. Swingle (1948) recorded another fatal case of post-operative intestinal obstruction due to talc adhesions. Ross and Lubitz (1949) reported a similar case. Postlethwait, Mason, and Morehead (1950) also reported seven cases of talc granuloma found partly in persistently draining post-operative sinuses, partly causing intestinal obstruction, and partly present in operation scars. Kidd and Wilson (1951) described a case of recurrent intestinal

obstruction following appendicectomy at which adhesions containing crystalline material were found under polarized light. The value of modified starch as a substitute for talc has been recommended by Graham and Jenkins (1952).

The following is a report of a case of talc granuloma combined with an old-standing diverticulitis of the sigmoid colon which simulated carcinoma.

Case Report

A married woman aged 63 attended the surgical out-patient clinic on October 2, 1951, with 15 years' history of vague abdominal discomfort, constipation, some recent loss of weight, and poor appetite. She had also lately suffered from frequency and some discomfort on defaecation, together with a constant bearing-down sensation and back-ache. Cholecystectomy for gall-stones had been performed in Liverpool in 1946.

On examination her appearance was that of a middle-aged rather obese woman in moderately good general condition. There was a suspicion of an ill-defined mass in the L.I.F. Rectal examination revealed a fairly large, fixed, slightly tender mass in the pouch of Douglas which seemed connected with the uterus and suggested a uterine fibroid. On vaginal examination the mass seemed to lie behind and to the left of the uterus. The patient was referred to the gynaecologist, and an examination under anaesthesia was carried out on October 9, when the above clinical findings were confirmed.

Operation.—On the same day a laparotomy was carried out and a tumour was found which apparently originated in the sigmoid colon and which was densely adherent to the uterus. The affected part of the sigmoid colon was mobilized fairly easily and a provisional diagnosis of either carcinoma or diverticulitis of the sigmoid colon, leading to the formation of an inflammatory mass with subacute obstruction, was made. The colon proximal to the tumour was greatly distended. In view of the subacute obstruction a transverse colostomy was carried out with the intention of resecting the affected part of the sigmoid colon at a later date. The patient was transferred to the general surgical ward, and the colostomy was opened on October 15.

Second Operation.—On October 31 the affected part of the sigmoid colon was resected with end-to-end anastomosis. No secondaries were found anywhere in the abdomen apart from enlarged glands in the immediate neighbourhood, which were easily included in the resection.

Convalescence was uneventful and the patient was discharged from hospital on November 29 to return at a later date for closure of her colostomy. A barium enema carried out on November 22 showed the barium flowing to the colostomy without delay. The x-ray report mentioned a few diverticula in the lower pelvic colon with some inflammatory changes.

Third Operation.—The patient was readmitted for closure of her colostomy, which was carried out on February 2, 1952, and she was discharged healed and having normal bowel actions on February 21. She has been seen in the surgical out-patient clinic repeatedly since, and her condition is quite satisfactory.

Pathology

The specimen consisted of 4 in. (10 cm.) of thickened sigmoid colon with 3 in. (7.5 cm.) of normal colon on each side, together with a sector of resected mesocolon which contained several enlarged glands in the immediate neighbourhood of the tumour-affected part of the colon. The macroscopic appearance of the tumour suggested either carcinoma or Crohn's disease. The part of the colon proximal to the tumour was hypertrophic and distended. The lumen of the affected part was considerably narrowed, but the mucosa of the entire specimen seemed intact. As a third possible diagnosis diverticulitis with peridiverticulitis

probably the result of a healed perforation of a diverticulum, had to be considered. There was a good deal of inflammatory oedema present.

Microscopical Examination.—The specimen was sectioned and the provisional report stated the lesion to be of an unusual inflammatory nature. The sections showed normal colonic mucosa, oedema and fibrosis of the submucosa, considerable hypertrophy of and some collagen deposits in the muscularis, and chronic inflammatory infiltration and fibrosis of the serosa. The lesion was stated to resemble Crohn's disease.

The specimen was also sent to Professor W. D. Newcomb, of St. Mary's Hospital, London, W.2, who confirmed the inflammatory nature of the lesion. He considered it to be a granulomatous condition due to small anisotropic particles (Fig. 2), probably from glove powder. He confirmed the presence of diverticula, and the hypertrophied muscularis

was thought to be the result of chronic obstruction due largely to the adhesions and partly to the diverticula. Professor Newcomb reported: "There is no question that she has had some ruptured diverticula in the past which go as far as the fat round the colon. It is very interesting that some of the faecal material has gone out into the fat and has caused a foreign-body reaction rather similar to the type on the surface, but I think there are two separate conditions. She first had a diverticulitis which has largely healed and then has had a talc granuloma which has stuck the material to the uterus."

As previously mentioned, the patient had undergone a cholecystectomy in 1946, when the powder was probably introduced into the abdominal cavity. Fig. 1 shows a section through the granuloma and Fig. 2, taken under polarized light, shows the talc particles as birefringent crystals.

Comment

Talc is a hydrous magnesium silicate which can produce a pseudo-tuberculous non-caseating granulomatous lesion in the form of a chronic granuloma or foreign-body reaction. The talc particles can be seen under polarized light. The talc may originate from the outside of gloves, from perforated gloves, or from rubber drains which had been powdered with talc for autoclaving. The particles are visible under the polarizing microscope as birefringent crystals.

The lesions described in the past have been post-operative adhesions which have caused obstruction, tumour masses which have simulated carcinoma, Crohn's disease and tuberculosis, persistently draining sinuses, or single or multiple masses in operation wounds. Periods of years may elapse between talc contamination and the production of symptoms, but Mackey and Gibson's talc granuloma was found 13 days after laparotomy. Cornstarch is now recommended in various modified forms as a dusting powder for use on surgical gloves and drains.

Summary

A case of talc granuloma following cholecystectomy, combined with diverticulitis of the sigmoid colon, and simulating carcinoma, is described. The various lesions which can follow the use of talc as dusting powder for surgical rubber equipment are discussed.

I wish to thank Mr. R. S. Ninian for permission to treat and publish this case, Professor W. D. Newcomb for the interpretation of the microscopical sections, and Professor J. Gough for the preparation of the photomicrographs.

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FIG. 1.—Showing the granulomatous nature of the condition, hypertrophy of the muscularis, oedema and fibrosis of the submucosa, and chronic inflammatory infiltration and fibrosis of the serosa. (x260.)

FIG. 2.—The same section under polarized light (x260), the talc particles appearing as birefringent crystals.

The London fog of December, 1952, and the initiation of the second smokeless zone in this country (in Central Manchester) are two points noted in the 1952 Annual Report of the National Smoke Abatement Society which is published in the Society's 1953 Year Book, now available from the offices of the Society, Chandos House, Buckingham Gate, S.W.1, price 1s. The report expresses concern at the calm acceptance of the incapacity caused by the fog, and the Society has urged the Government to undertake a comprehensive investigation into the disaster. The Year Book also contains articles on laws relating to smoke, investigation of air pollution, and domestic and national fuel policy. There is also information about the Society and its services to members, as well as a directory of organizations concerned with air pollution, and a list of recently published papers on the subject.