Sufficient cases have been reported to establish the clinical features of the disorder. Some two to three weeks after an uncomplicated abdominal operation the patient, who has hitherto made good progress, becomes unwell with fever and abdominal pain. Physical examination usually shows signs suggesting peritoneal inflammation or bowel obstruction. Occasionally ascites is evident. The fever is usually low-grade but occasionally rises to 102-103° F (38·9-39·4°C). The white cell count is usually not raised but there may be an eosinophilia; the sedimentation rate is often high, about 25-40 mm in 1 hr. The patient's condition may give rise to such anxiety that re-exploration of the abdomen is undertaken. The operative findings are characteristic: free straw-coloured peritoneal fluid in quantities of up to 1-2 l., miliary peritoneal nodules, serosal inflammation, and adhesions. These appearances mimic malignant disease, tubercle, or Crohn's disease. In fact at least one hemicolectomy has been undertaken because of mistaken macroscopic diagnosis.[10] However, microscopical examination of the granulomatous lesions under polarized light reveals the typical "Maltese cross" appearance of the corn starch particles. The disease is self-limiting and the long-term prognosis seems good. Steroids have sometimes been given with good effect. One reported case is of particular interest.[6] This concerned a patient who had been re-explored after an uneventful cholecystectomy because of starch granuloma peritonitis. After the exploration the patient was treated with steroids and the condition rapidly resolved. Sensitivity testing by injecting a suspension of glove powder intradermally produced no response when the patient was on steroids, but when the test was repeated later, after the patient had completely recovered and been taken off steroids, not only was the skin test positive but there was a recrudescence of the abdominal symptoms.

In nearly all the reported cases the patient had been subjected to laparotomy. No doubt there must be many patients with less severe symptoms who passed undiagnosed. The normal white cell count, with perhaps eosinophilia and a raised erythrocyte sedimentation rate, should alert the clinician to the possibility of the diagnosis of starch granuloma peritonitis. In some more severe cases laparotomy may still be necessary to exclude other more serious conditions. Recently it has been shown that examination of the ascitic fluid obtained by needle aspiration may confirm the presence of corn starch particles within the inflammatory cells.[11] A lymphocytic transformation response has also been found when a patient's cells were cultured with corn starch as the antigen.[11] Thus it seems likely that a hypersensitivity reaction is responsible for the development of symptoms.

Though an abdominal incision is the most usual route for peritoneal contamination with corn starch it can occur via the Fallopian tubes. One case has been reported in which a young woman presented with the signs of acute peritonitis, her abdomen was explored, and the peritoneum was found studded with granulomatus lesions containing corn starch.[12] The source of the corn starch was traced to the lubricant on the condoms used by her husband. In other gynaecological patients peritoneal lesions have been traced to the powder on gloves used for vaginal examination.[13]

While the dangers of surgical glove powder are now established, the practical problem of how to avoid them is still unsolved. Clearly surgeons should use as little powder as possible in putting on their gloves, and every effort must be made to remove excess powder before operating. Though rinsing the gloves is generally recommended, it has been shown to produce clumping of any residual particles which are left, and these larger particles may possibly provoke more reaction.[14] Obviously perforation of the glove increases the hazard and it an additional reason for the surgeon to change his gloves immediately any perforation is noted. Biopsy of the omentum at the conclusion of a laparotomy was done in 20 patients, and all showed evidence of contamination with glove powder. Experimental evidence suggests that even two rinses does not remove all the powder, and peritoneal contamination seems inevitable when any glove powder is used.[14] Furthermore it has been shown that some peritoneal adhesions may be related to the presence of starch particles. Adhesions are easy to produce experimentally even with small doses of powder if there is serosal damage.[14]

The clinical recognition of starch granuloma peritonitis is obviously of great importance, for some patients may be saved an unnecessary laparotomy and occasional patients may be saved from an unnecessary bowel resection. Clearly an alternative to the present use of glove powder needs to be sought. Is it really necessary for powder to be applied to the outer surface of the gloves by the manufacturers? Is lubricant powder necessary at all?

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Smoking and the Use of the Health Service

Smoking can damage the lungs, heart and arteries, as well as the gastrointestinal and urinary systems.[1 2] It is also a hazard to the fetus.[3] Few doctors therefore will be surprised to hear that a recently reported study has found that smokers see their general practitioners both in the surgery and at home more often than non-smokers, besides making more outpatient visits to hospital and spending more time there as inpatients.[4] However, the relatively unusual perspective of this study and its emphasis on a whole community (or a large part of one) make the findings an interesting footnote to the story of smoking and disease. The study in question is the Exeter Community Health Research Project, which is a large-scale enterprise particularly concerned with the use of the health services.

A detailed smoking history was collected by a private census on 53,500 of the 90,000 persons living in Exeter in 1966, no reply or co-operation having been obtained from the remainder. In addition, a morbidity survey was carried out in which a record was made from November 1966 to October 1967 of every surgery visit, general-practitioner home visit,

hospital outpatient attendance, and hospital inpatient stay by the patients of 35 of the 49 general practitioners of the city, covering about 75,500 patients. Of these 32,219 were also included in the census, and they form the basis of the report. There was close agreement between the use of the health services by this group compared with those in the morbidity survey who were not covered by the private census. This, together with the similarity between the structure of the surveyed population and the official 1966 sample census, suggested that there was no significant bias in the group studied.

Surgery, general-practitioner home visits, and outpatient visits all tended to be more frequent among smokers (particularly the men) than among non-smokers, except for men over 59 and women over 44, in whom the reverse trend was noted. In addition more days on average were spent in hospital as inpatients among smokers of both sexes and at all ages than among non-smokers. These trends tended to be greater among those smokers who reported that they inhaled.

A reversal in trend among outpatient visits and general practitioners' patients in the older age groups is unexplained, but suggested causes of it include a reduction in the number of ill smokers through removal by death or transfer to the ex-smoking category as a result of medical advice or financial pressures. Ex-smokers of both sexes had a relatively high usage of the health services, presumably reflecting at least in part a tendency for patients to stop smoking *because* of their ill health. This increased recourse to the health services by smokers was noted for neoplasms, nervous diseases and diseases of sense organs, and the respiratory, digestive, and genito-urinary systems, but was most marked for accidents, though no figures are included. However, the available data do not allow a distinction to be made between accidents caused directly or indirectly by smoking and a possible association between "accident proneness" and a tendency to smoke. In contrast, infective, parasitic, and allergic disorders were responsible for more contacts with doctors among non-smokers.

The results viewed on their own do not show that smoking is responsible for the excess usage of the health services, nor do they indicate the true extent of ill health in different smoking categories, because these groups may differ in their readiness to consult a doctor, particularly in the case of symptoms such as cough. However, the study clearly shows that smokers do indeed use the health services more than non-smokers, and its findings add yet more weight to the immense body of evidence of the harmful effects of smoking.

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East African Jubilee

This month the *East African Medical Journal* celebrates its jubilee with 50 years of continuous publication behind it. Though now a valuable asset of the Kenya Medical Association, it began in June 1923 as a publication of the Kenya Medical Service.

Dr. C. J. Wilson, the Deputy Director of Medical Services in the Colony, brought out the first issue as a cyclostyled publication under the title *The Monthly Journal of the Kenya Medical Service*. Its main object was to give medical officers in the service an opening for case reports and to publish news of interest to them, the editor modestly declaring that "this Journal undoubtedly is not well begun . . . but has a long and progressive life before it." After running for 10 issues it won the backing of the managing director of the Nairobi newspaper, the *East African Standard*, as a result of which it continued to appear monthly but properly printed as the *Kenya Medical Journal*. Owing to the energetic editorship of Dr. J. H. Sequeira, the well-known dermatologist, who had retired to Kenya for health reasons, it attracted readers and contributors from further afield, changed its name again to the *Kenya and East African Medical Journal*, and then in 1932 adopted the title we know today. Its flourishing state from then onwards owed much also to the labours of Dr. J. A. Carman, first as assistant editor and subsequently as editor, who is now living in retirement.

The journal's early issues recorded a scene in which smallpox, plague, and sleeping sickness were common, statistics were few, and the great subject of debate was whether quinine should be given by intramuscular injection or by mouth. One contributor declared that he always gave it by injection "for the simple reason that I felt the treatment was more impressive than telling the patient to swallow the medicine." The preservation of asepsis was another daily problem to which doctors had to devote unceasing attention: "Soap and water cleanliness is first observed; everything that can be boiled is boiled—after that one trusts in Providence and the free use of methylated spirit." The treatment of fevers by chilling the body was customary, by a variety of methods: even cooling the patient by driving her naked in a motor car has been recorded in one case that achieved a legendary fame.[1] But as reports of a more serious kind accumulated the journal came to provide a remarkable record of medical endeavour in the tropics and to take an honoured place in the worldwide struggle to improve the health of people living there. All good wishes are extended to it for the next 50 years.

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