intramuscularly, all given within 24 hours. On October 4, one week after admission to hospital and seven weeks after starting treatment with chlorpromazine, the patient died. Permission for necropsy was not granted.

Comment

For two reasons it is difficult to avoid the conclusion that chlorpromazine was responsible for this fatal agranulocytosis. Firstly, the agranulocytosis developed six weeks after the first dose of chlorpromazine; this interval corresponds with that noted in other recorded cases. Secondly, the agranulocytosis followed definite evidence of sensitivity to chlorpromazine. Transient fever, jaundice, and skin rashes are well recognized as complications of treatment with chlorpromazine. The other drugs used before treatment with chlorpromazine began can scarcely be incriminated. They do not carry the reputation of toxicity towards the bone marrow, and they had been taken frequently and harmlessly by this same patient on previous occasions.

This case suggests that evidence of sensitivity to chlorpromazine should be treated with respect. Fever, jaundice, and skin eruptions during the early weeks of treatment should be taken as danger signals and should compel repeated examination of the blood, if not withdrawal of the drug. Ulcerative stomatitis, particularly if it occurs at about the sixth week of treatment, should be an absolute indication for the immediate cessation of chlorpromazine therapy.

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CYST FORMATION SEVEN YEARS AFTER A CUTIS GRAFT REPAIR OF HERNIA

BY

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The use of skin in the repair of hernia was suggested more than forty years ago in Germany (Loewe, 1913), and was first applied clinically to post-operative incisional herniae (Rehn, 1914). It did not come into any general use for inguinal herniorrhaphy until Mair (1945) published his paper. The possibility of cyst formation due to the persistence of epithelial or glandular elements was not noted in the first two series of cases published (Mair, 1946; Marsden, 1948), but was stressed by Strahan (1950) in a series of 413 cases. Strahan found nine definite cases of cyst or sinus formation, with a number of others in which the presence of a cyst was suspected but not proved by actual operation. Most of the cysts in Strahan's series were small; but two were large, and his Case 3 is very similar to the one reported here.

Case Report

A railway worker aged 48 first developed a left inguinal hernia in 1946. The hernia was operated on in May, 1947, and the transcript of the rather brief operation note reads as follows: "Left inguinal incision. Poor musculature. Direct inguinal hernia. Cutis graft repair performed. Patient to remain in bed three weeks." The patient stated that he had made an uncomplicated recovery after operation, and that he had not returned to his job, which entailed heavy lifting, until August, 1947. He remained quite free from symptoms and from any sign of recurrence until June, 1954—more than seven years after the operation—when he began

to complain of pain in the groin, radiating into the testicle, and later noticed a swelling under his operation scar. He was examined by a surgeon, who diagnosed recurrent left inguinal hernia.

Examination showed a heavily built overweight man with protuberant abdominal wall rather heavily laden with fat. There was a well-healed oblique operation scar in the left inguinal region, and beneath it an elongated smooth solid swelling lying in the long axis of the inguinal canal. It was not reducible, but appeared to have some impulse on coughing. A diagnosis of incarcerated omentum in a recurrent hernial sac was made—the details of the previous operation being overlooked through an over-hasty perusal of a rather illegibly written case record.

At operation the first feature noticeable was the unusually dense fibrotic obliteration of the normal layers of the inguinal musculature. The swelling was obviously solid, and, after it had been separated from the spermatic cord and dissected up, it became apparent that it stopped short

at the internal ring and had no communication with the peritoneal cavity. The swelling, which measured 7 cm. in length and nearly 3 cm. in greatest diameter, was removed intact. Its removal left a potential weakness in the posterior wall of the inguinal canal, which was repaired with silk sutures after a relaxing incision in the anterior rectus sheath.

The patient made an uncomplicated recovery after operation, and left hospital with no evidence of any recurrent herniation.

The swelling, when examined after removal, proved to be a cyst, with walls varying from 2 to 5 mm. in thickness. It contained a waxy inspissated material, and several dark hairs, one of which was an inch (2.5 cm.) in length, were seen lying free in it. Histological examination of the cyst wall showed a well-formed squamous epithelial lining, with a connective-tissue backing resembling normal dermis, though without its papillary structure. The size and shape of the cyst are well shown in the photograph.

Comment

Apart from the cases mentioned by Strahan in his large series, only two cases have been reported in this country of cyst formation after buried skin-graft operations (Clarke, 1952; Powell and Ewing, 1952). Clarke made a thorough review of the relevant literature, and discussed the factors favouring cyst formation. His case, however, like most of the others, was a small cyst discovered coincidentally at operation for recurrent hernia. The possibility of the persistence of buried glandular elements was recognized by Rehn in his original paper. Experimental work by Zimches (1931) showed that a piece of skin inserted free into muscle tissue tends to curl up into a U shape and regularly to form an inclusion cyst; and even if sutured into position

under normal tension the epithelium may grow over the opposing surfaces and so form a cyst. This work was confirmed by Uihlein (1939), and all subsequent writers on the subject have emphasized the necessity of suturing the graft under as great a tension as possible—in contradiction of all the accepted rules for hernia repair. It is obvious, however, that this is a factor which cannot be controlled with complete certainty, and Strahan concluded that, in spite of the most careful technique, any surgeon doing a large number of these operations will inevitably meet some cases of cyst formation. Whilst this does not condemn the method, it must temper enthusiasm for it.

The present case is of interest for the large size of the cyst, requiring operative removal although the hernia itself had not recurred, and for the long interval of seven years between the implanting of the graft and the appearance of the cyst.

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Medical Memoranda

Caeco-colic Intussusception Complicating Perforated Appendicitis

The association of caeco-colic intussusception with acute appendicitis seems to be rare, only one case having been found in the literature.

CASE REPORT

A boy aged 22 months was admitted to hospital on January 24, 1954, with a history that 48 hours previously he had had abdominal pain and had vomited once. After a few hours the pain went away, but it recurred 24 hours later, and there had been periods of screaming with evident abdominal pain and pulling up of the legs, and usually a vomit. The attacks lasted for 5–15 minutes and occurred every hour or so. Between the attacks he was quiet, and in the few hours before admission became rather drowsy and disinterested. He had been taking fluids fairly well between the attacks.

Examination showed a flushed and toxic-looking little boy. His pulse was 160 and temperature 101°F . (38.3°C). The tongue was coated, but there was no evidence of dehydration. The abdomen showed generalized rigidity, maximal on the right side, where there was extreme tenderness. Rectal examination revealed a "bogginess" in the recto-vesical pouch but no blood. The chest and C.V.S. showed nothing abnormal. A diagnosis of peritonitis from appendicitis was made, although the recent history suggested an intussusception.

Operation.—Under anaesthesia a rather bulky, sausage-shaped mass was felt just to the right of and above the umbilicus. On laparotomy through a right paramedian incision a diffusing peritonitis was found and an amount of thin pus with small fibrin flakes was sucked out. The small gut was only slightly distended. The apex of the intussusception had reached the right transverse colon; it was pushed back and easily reduced. The apex was caecal, at the level of the appendicular base, which could not be seen, as the proximal half of the appendix was retroperitoneal. This part of the caecum was thickened and congested and the appearances extended back along 4 in. (10 cm.) of ileum, the mesentery of which was rather bruised. The distal $1\frac{1}{2}$ in. (3.8 cm.) of the appendix, which was visible, was congested correspondingly, and it was obvious that all this gut was

fully viable. Over the area of the appendicular base was a small yellow patch, and on following the appendix back to its base by opening the peritoneum a small abscess surrounding a gangrenous perforated segment was revealed. The base was just clear, and appendicectomy was carried out. A small drain was inserted down to the area and the abdomen was closed.

Post-operatively the patient took fluids orally and was given penicillin and streptomycin by intramuscular injection, and after a slow first 24 hours he made a rapid and completely uneventful recovery. He was discharged twelve days later.

COMMENT

The clinical picture was interesting in that the recent history suggested intussusception, whereas the examination suggested peritonitis from appendicitis. The clear viability of all tissue except the perforated gangrenous segment of the appendix confirms that the appendicitis preceded the intussusception. It obviously must have done, otherwise there would have been no peritonitis. The presence of a localized abscess on the caecal wall initiated the intussusception.

It was remarkable how innocent the visible portion of the appendix looked, and this case may serve to emphasize that the appendix should be closely examined, especially where the apex of an intussusception is caecal. A small caecal abscess as an initiating mechanism was noted by Gavin Cleland (1953), but under different circumstances—following appendicectomy with invagination of the stump. Lipin and Miller (1948) reported a case of acute appendicitis complicated by intussusception in a man aged 21.

I wish to thank Mr. John Talbot for the opportunity of dealing with this case.

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Recovery after Penetrating Wound of the Heart

Contrary to the accepted belief of the popular fiction writer, injury to the heart by a penetrating wound of the chest may occur without an inevitably fatal result. The following is a report of a case which came under my care.

CASE REPORT

On April 2, 1953, at about 10.30 p.m., a man of 22 was brought into the General Hospital, Ashton-under-Lyne, following a knife injury sustained during a brawl. He was extremely shocked and suffering from extensive blood loss. His clothing was heavily bloodstained and small cuts were present in his overcoat, jacket, and shirt in the left pre-cordial region. He was semiconscious and irritable, and needed considerable restraint to prevent him falling from the stretcher. Respiration was deep and sighing, there was extreme pallor of the lips, face, and hands; sweating was profuse, and no pulse was discernible at the wrist or in the neck.

After a slow blood transfusion the blood pressure rose to 56 mm. Hg, and it was decided to remove his clothing and examine his chest. There was a vertical incised wound in the fifth left intercostal space, about 1 in. (2.5 cm.) in length and 1 in. lateral to the mid-clavicular line. The wound was not now bleeding. Percussion revealed a stony dullness over the left half of the chest, with considerable mediastinal shift to the right. On auscultation no breath sounds could be heard on the left side of the thorax. A diagnosis of haemothorax was made, probably with injury to the left lung. When the systolic blood pressure had risen to 110 mm. Hg preparations were made for an emergency thoracotomy. However, on arrival at the theatre the blood pressure had fallen to 45 mm. and further resuscitation and transfusion were necessary before the operation could be started.