

It occurs mostly in the prime years of life when the muscles are at their optimum strength. Nor can muscles be blamed for umbilical and linea alba hernias, in which they play no part. Further, I have not met with any case of inguinal hernia indubitably caused by damage from laparotomy to the nerve supply of an abdominal muscle, nor with a proneness to hernia in paraplegia involving the lower abdominal muscles, nor in general muscular wasting from illness.

The theory that in many acquired indirect adult inguinal hernias the presence of a pre-existing sac is an important cause has little, I submit, to support it, for the following reasons. In all monkeys and apes the processus vaginalis persists as an open sac, but in them hernia does not occur, and in man there is found not uncommonly a persistent processus without hernia having developed. Again, in femoral and some other varieties of hernia a pre-existing sac never occurs. Besides, the sac theory does not explain "infantile inguinal hernia," which may occur in adults with a new sac at the sides of an existing processus closed above. Further, I have not met with an acquired adult hernia that from the first onset undoubtedly extended into the scrotum, though such extension may be affirmed by the patient when insurance policy or imperfect observation is the more probable explanation.

The cause of indirect inguinal hernia therefore would appear to be the weakness or excessive patency, congenital or acquired, of the internal ring, and of direct inguinal hernia to be the weakness of the aponeuroses.

#### Technique of the One-layer Operation

To close incisions through the abdominal wall and to repair defects in it, it is in my view important that attention be paid not to the muscles but to the accurate suturing together or overlapping of clean fascia to fascia. As in inguinal hernia there is plenty of local fascia to repair all defects, elaborate operations such as filigrees, fascial grafts, and fascial sutures are unnecessary. The operation described here is based on this principle of fascia to fascia, and is suitable for all varieties, including direct, indirect, recurrent, and the largest inguinal hernia. It is performed in the following manner.

The usual incision is made, except that it extends from near the anterior superior spine to the pubis. The external oblique aponeurosis and Poupart's ligament are well exposed and cleaned of all fatty and areolar tissue, and the external oblique is incised from the external to a point opposite the internal ring. The cord is dislocated from its canal and freed, particularly at the pubic end. The sac is dealt with in the usual way, tied high up, and excised. It might be noted that as a general rule when the sac is thin the hernia is of recent date, and when the sac is thick it is of old standing. In direct hernia I usually repair the abdominal wall without opening the bulging sac. All fatty tissue clinging to the canal and cord is removed and the abdominal wall repaired with one layer of interrupted sutures, sometimes using fine silk in large and in old-standing hernias. It is carried out as follows.

Starting at the outer end of the wound, and as far as the internal ring, there are inserted and tied three or four Lembert stitches which take a wide and deep bite of the external oblique aponeurosis above and a wide bite of Poupart's ligament below so as to lace them together. The cord is then lifted up and a finger inserted into the canal to ascertain the position of the external iliac artery, when, with the finger still guarding the artery, the next and important through-and-through stitch is inserted close and internal to the cord, taking above a wide and deep bite of the external oblique and underlying aponeuroses and below (with the lower cut edge of the external oblique drawn

down) a wide area of Poupart's ligament. It is important that this stitch be so placed that when tied the rings will not be left too large or yet too small, when pain and swelling of the testicle will occur. Two or three more stitches are similarly inserted as far as the pubis, care being taken not to wound the external iliac vein. These stitches are then tied under the cord, thus obliterating completely the original canal. The new canal is quite short, straight, and non-valvular, with the newly formed close-fitting rigid external ring exactly over the narrowed rigid internal ring. The cord will then lie on and be superficial to the external oblique. The skin wound is closed in the usual way. A firm spica bandage is applied, this being worn for six weeks with the scrotum supported in a suspender, though the patient is allowed out of hospital in from two and a half to three weeks with instructions to bend well forward when straining at stool and to support the wound with his hand when wanting to cough.

## Clinical Memoranda

### Benzedrine in Treatment of Morphine Addiction

While most of the literature on the treatment of morphine addiction devotes much space to the actual withdrawal of the drug, the convalescent stage immediately following the "complete withdrawal" is generally considered to be of secondary importance. Perhaps it is at this particular period that the seeds of frequent relapses are sown. I have found the administration of benzedrine during early convalescence an invaluable aid in combating that physical and mental inertia which is a common factor in all cases of drug addiction when recovering.

My reasons for trying out this drug were: (1) I had come to the conclusion that once a patient had been cut off from morphine there would be precipitated an "allergic response" owing to the disturbance of the vago-sympathetic balance, directly due to prolonged fears and emotions in various forms. Now, adrenaline is administered in allergic diseases and benzedrine is structurally related to adrenaline. (2) Ostromislensky considers morphine addiction an example of allergy. Here, then, was a case for the trial of adrenaline, not during but *immediately following the complete withdrawal* of morphine. But as stimulation of the sympathetic and central nervous systems was desirable in order to restore the already disturbed vago-sympathetic balance, benzedrine was to be preferred to adrenaline. (3) It has been shown that a large number of alcoholics and morphine addicts belong to the recurrent type of manic psychotics, and as benzedrine is already widely used in certain depressive conditions there was no reason why it should not be tried on morphine addicts. The results fully justified my expectations.

Below are given particulars of a typical case in which benzedrine was administered.

#### AN ILLUSTRATIVE CASE

The patient, a schoolmaster aged 45, had been taking morphine by hypodermic injection for four years, the total daily intake being 10 grains. This amount was gradually reduced, and after ten days his appetite improved and he was able to sleep without hypnotics. Thereafter the usual protracted convalescence began, the leading symptoms being inability to concentrate and disinclination for any sort of physical exercise. A fortnight after the complete withdrawal of morphine 5 mg. of benzedrine was administered twice a day, on rising and at noon. A marked improvement was noticeable. He was easily induced to exercise and to undertake light occupation. On the fifth day 10 mg. of benzedrine was given twice, on rising and at noon, but this was reduced to 5 mg. as it interfered with his sleep. After a fortnight the benzedrine was stopped for a week. Thereafter 10 mg. was given twice a day for ten days, with an interval

of seven days' rest, and it was finally discontinued at the end of two months.

A remarkable feature of the case was the complete absence of physical and mental inertia. Further, there was no inclination for the patient to fall back on alcohol as a stimulant, a recourse which almost without exception leads to a relapse. The benzedrine did not produce insomnia, nor did it cause any loss of appetite. The quick return to physical well-being and mental alertness was most marked.

Trowbridge.

H. CECIL DUCKWORTH.

### Acute Periarticular Rheumatism treated successfully by an Autogenous Staphylococcal Vaccine of Intestinal Origin

The use of organisms of intestinal origin for making autogenous vaccines in presumably infective "rheumatic" cases is well known. It is often regarded by sceptics as a grossly unscientific procedure. The object of reporting this case is to produce as nearly as possible clear-cut scientific evidence of its value in at least one instance. The case was one of severe periarticular rheumatism with fever, and was treated by an autogenous vaccine made from a single organism, with remarkably effective results. I believe that such evidence as this is of real value and should convince many, despite the fact that one swallow does not make a summer. The case was observed by two medical men, one of them a near relative of the patient (the others being Mr. E. Wilson Hall, surgeon to the Princess Alice Memorial Hospital, Eastbourne), who was an excellent independent witness and who has kindly supplied the clinical notes here set forth.

#### CASE REPORT

The patient, a lady aged 69, had not previously suffered from "rheumatic" affections. All her teeth had been extracted twenty years ago. Her health had been fair, although she had never been robust; especially since a severe accident some twelve years ago. She had always been troubled with flatulence and dyspepsia.

Before she became acutely ill she had been suffering for two or three months from inflammation of individual joints of her fingers, hands, and wrists. A joint would become painful and very stiff, swollen, and hot. After a varying time such a joint would recover, only to be followed by similar conditions in a fresh joint. At this time she was taking salol internally, and iodox or antiphlogistine was being applied externally. After a period of fluctuating improvement and recrudescence her condition rapidly became worse. Several joints of the fingers and wrists became affected at the same time. Radiographs of the hands revealed that the inflammatory condition was periarticular and that the joints themselves were not apparently affected. She was at this time given iodine internally, and diathermy was tried for the joints. Then her shoulders, knees, and ankles became stiff and painful, and she developed a mild pyrexia. The tongue was furred, and there was nausea and loss of appetite; her heart sounds were feeble and a mitral regurgitation bruit was present; the pulse was feeble and rapid (about 100); and she had attacks of breathlessness and feelings of faintness. Her hands became so crippled that she could only feed herself with difficulty and was unable to knit or sew. All movements were painful, and walking was difficult.

It was at this stage that the autogenous staphylococcal vaccine was prepared. The initial doses were small, and for a while no improvement took place. But as the dosage was gradually increased so she gradually improved. The evening temperature, which for a long time persisted at about 99.8°, slowly came down to subnormal. The tongue cleared, the appetite returned, the pulse improved, and the feelings of breathlessness and faintness became less marked. All this time a steady improvement in the joints took place.

After about two months' treatment with the vaccine she was remarkably better in every way. The joints had become normal in appearance, the swelling and pain had gone, and she was able to use her hands normally and to walk about without pain. Eight and a half months after recovery there had been no signs of a return of the illness.

#### PATHOLOGICAL INVESTIGATIONS

On September 13, 1937, a blood count showed: red cells, 3,650,000 per c.mm. (diameter 7.6  $\mu$ ); haemoglobin, 80%; colour index, 1.09; leucocytes, 14,800 per c.mm.—mature neutrophils, 66% (9,768); embryonic neutrophils, 10% (1,480); lymphocytes, 23% (3,404); monocytes, 1% (148). Anaemia, tending to be megalocytic and moderate in degree, was present, and there was a well-marked inflammatory leucocytosis. Blood culture was sterile. Throat swab cultures showed occasional colonies of pneumococci and *Micrococcus catarrhalis*.

On September 14 the urine was slightly turbid, was neutral in reaction (pH 7.0), had a specific gravity of 1.007, and showed a trace of albumin. The centrifuged deposit contained a few epithelial cells only, and cultures were sterile. Cultures of the faeces on MacConkey's medium revealed *B. coli communis* both on the first direct plating and on the second plating of subculture from peptone water. Cultures of the faeces on human blood agar gave *B. coli communis* on the first direct plating and the second plating of subculture from glucose broth. The third plating of subculture from glucose broth revealed the presence of *B. coli communis* and *Staph. albus*.

Twenty-three doses of the autogenous vaccine were given as follows:

1st day	...	Dosage	Intervals:	Dosage
...	...	5 millions	7 days	125 millions
Intervals:	...	...	7 "	150 "
3 days	...	10 "	7 "	175 "
4 "	...	30 "	7 "	200 "
10 "	...	40 "	7 "	225 "
7 "	...	50 "	7 "	250 "
8 "	...	50 "	7 "	250 "
7 "	...	50 "	7 "	250 "
7 "	...	25 "	7 "	250 "
7 "	...	50 "	21 "	125 "
8 "	...	75 "	14 "	125 "
7 "	...	100 "	14 "	125 "

A very useful procedure for recovering the faecal aerobic flora was tried. It was found that incubation in glucose broth leads to a lowering of the pH of the medium, which allows the streptococci, staphylococci, and acidophilus types to appear in the subcultures but restrains the coliform organisms. Eventually all organisms are replaced by a pure culture of acidophilus bacilli when the pH has fallen to a level of 3.6 to 3.8, but the point at which this occurs is variable.

#### DISCUSSION

Since other and varied forms of therapy had been tried without success, the improvement is so closely correlated with this single-organism vaccine treatment that there cannot be much doubt that the causal organism was indeed the white staphylococcus isolated. There can be little question of protein shock, inasmuch as no reactions were encountered.

The possibility of non-specific therapy hardly arises, because of the very low dosage employed; and if it is mere coincidence, why was improvement delayed until vaccine therapy was tried? Moreover, improvement ran parallel with increased dosage. Had the soulless scientific method been followed the vaccine should have been stopped so as to see if any recurrence set in, and then have been resumed to complete a cure; but humanitarian reasons forbade this. At any rate, the evidence for the *Staph. albus* as causal or effective agent in this case is almost "cast-iron."

The organism was grown on human blood agar, not on a "chocolate" medium. I am informed that a similar therapeutic coccus is sometimes isolated from MacConkey's medium in such cases.

A. GEOFFREY SHERA, M.A., M.D.,  
Honorary Pathologist, Princess Alice Memorial  
Hospital, Eastbourne; Consulting Pathologist  
to the East Sussex County Council.

J. M. Frawley (*J. Pediat.*, 1940, **16**, 18) records his observations on twelve children who were given nasal instillations of filtered washings taken direct from the respiratory passages of patients with whooping-cough. In all but four there was no noticeable reaction. Two developed coryza and cough, one had a nasal discharge and cough of five days' duration, and one a nasal discharge and cough which lasted for ten days, but in none did any symptoms resembling pertussis occur.