both general and special in character, dealing with clinical medicine, surgery, and gynaecology, and also with the special branches, such as ophthalmology, laryngology, orthopaedics, and radiology. The latter should be so arranged in series that a man could either get a good elementary course in a comparatively short time or by taking more elaborate courses and devoting himself entirely to the subject could eventually become qualified for this special branch of work. The instruction should be essentially practical rather than didactic, with demonstrations in preference to set lectures. Too much stress can hardly be laid on the importance of providing ample facilities for clinical work, particularly in the special courses in which clinical assistantships should when possible be available, so that the technique of diagnosis and treatment can be thoroughly mastered.

A Graduate Hospital School.

The graduate instruction should be centred in a large hospital with which neighbouring special hospitals may be affiliated, and the organization of the extensive facilities available in London should be carried on at a central bureau. The graduate schools in the provinces should also be co-ordinated with the central organization, which may most conveniently have its home in London. Centralization, especially in London, where much time is necessarily spent in going from one hospital to another, is important. The hospital should be entirely devoted to graduate teaching, for general experience proves that undergraduate and graduate instruction cannot be satisfactorily carried out at the same time and in the same institution. Such a hospital, fully equipped with modern laboratories, would take a long time to build under present conditions; and as it is most important that such a hospital should be in working order at the earliest possible moment, it has been suggested that some teaching undergraduate hospital should be given up to graduate instruction. The teaching staff of the graduate hospital and school raises some difficult points; its members should be well known for their teaching ability and in the full tide of their energies. Such men would of course be engaged elsewhere, and in order to obtain their services some plan by which they could be seconded from their existing chairs without losing them would be necessary. A period of years—five or more—has been suggested, but this would make it very difficult to keep their permanent posts open, and it would be better that they should take service at the graduate hospital for short terms of a few months in each year. If the graduate hospital is started *de novo* there would be much less difficulty than in the event of a teaching hospital with its staff being taken over for graduate instruction. In the latter case some of the original staff would necessarily have to make room for the temporary service of outside teachers, and, unless an alternating service, such as obtains in some American hospitals, be adopted, the question of providing an equivalent position would have to be faced.

The duration of these courses also requires consideration, as a man can rarely spend many weeks away from his practice and is then naturally disinclined to sacrifice the whole of his hard-earned holiday. Time is money, and though time thus expended is a good investment, the available capital is too often small. As a result the courses in this country for general practitioners have usually been short and intensive—lasting two or three weeks—such as those at St. Bartholomew's Hospital before the war, which were held in the summer vacation as most convenient both for the general practitioners and from the point of view of the undergraduate school. In 1909, at the International Congress at Buda-Pesth, the opinion was definitely expressed that the State should provide these courses free of charge, and, according to Abraham Flexner,² the Central Committee for post-graduate education, with its head quarters in Berlin, had in 1912 organized gratuitous courses for practitioners in forty-eight of the larger cities of the German empire. In this country as the State, through the University Grants Committee with the concurrence of the Board of Education, now subsidizes undergraduate teaching, it is only logical that it should also assist in graduate instruction, and there is reason to believe that it would adopt a sympathetic attitude to this proposal. If in the future a general medical service subsidized by the State comes into being, as seems not improbable, the duty of the Government to provide

medical men engaged in such work with periodic study leave would be a natural corollary, so as to correspond to the condition of service in the navy and army. In such conditions a course of three or more months would be practicable and appropriate, especially if some step in promotion, a higher diploma or degree, depended upon attending and showing evidence of having benefited by a somewhat prolonged course.

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² A. Flexner, *Medical Education in Europe*, 318, 1912. ³ Vide H. M. Hurd, *Johns Hopkins Hosp. Bull.*, Baltimore, 1919, xxx, 125. ⁴ J. B. Murphy, *Journ. Amer. Med. Assoc.*, Chicago, 1911, lviii, 5.

THE USES OF FREE TRANSPLANTS OF THE FASCIA LATA IN SURGERY.

BY

G. GREY TURNER, M.S.DURH., F.R.C.S.ENG.,

F.A.C.S.(HON.),

ROYAL INFIRMARY, NEWCASTLE-ON-TYNE.

IN using the term "free transplants" I refer to a portion of fascia lata removed from the thigh of the patient for use in some remote part of his own body. I am not able to state with certainty who first introduced this valuable method to the notice of surgeons, but I believe that it is to Murphy of Chicago that we owe its more general application, for he popularized its use in his work on arthroplasty.

I have personally used this method in arthroplasty in the elbow and in the jaw joint with very satisfactory results, but I want to briefly draw attention to its uses under other circumstances which are perhaps less well known.

I.

It is valuable for protecting the deeper structures, such as sutured nerves or tendons during the slow healing of a wound by granulation, or when the superficial tissues are so much damaged that their recovery after suture is likely to be attended with sloughing. For instance, in a man who had a lacerated wound over the dorsum of the right thumb, with complete division of the tendons, it was necessary to protect the latter after suture, because the skin was so much damaged that it was difficult to get it together, and the likelihood of subsequent sloughing rendered sepsis and healing by granulation extremely probable. Under these circumstances, I carefully repaired the tendons with catgut, and then laid a piece of fascia lata about 1½ in. long by 1 in. broad over the line of union, and fixed it in such a way that it extended beyond the area of damaged tissue, thus forming a covering for the tendons, and an effective barrier between them and the skin. The latter was carefully sutured, but part of it was so much crushed that, as was anticipated, sloughing occurred, leaving an area ¾ in. by ½ in. directly over the site of tendon suture to heal by granulation. The floor of this area was formed by the fascia lata which at the first dressing was seen looking white and lifeless, as though it also was about to slough. However, it was not interfered with, and healing by granulation proceeded satisfactorily and completely, with no evidence that the transplant was disturbed. The man made a perfect recovery, and within three months was able to use the tendons, the complete usefulness of the thumb being restored.

Fascial transplants can similarly be used for the protection of sutured nerves, and I have seen it applied in a case of aneurysm of a large artery, where rupture of the sac, following ligation of the main trunk, appeared to be a possibility to be especially guarded against.

II.

It is also exceedingly useful for the replacement of lost tendons, and I have used it with success in war surgery under these circumstances. One patient lost a considerable length of the extensor tendons of his right forefinger. After the wound had soundly healed and had been tested against latent sepsis by exposure to radiant heat, the retracted ends of the tendon were exposed and separated from the scar tissue in which they lay, leaving a gap of about 1½ inches. [No attempt was made to deal separately with the extensor communis and extensor indicis, but it might have been done with the expenditure of a good deal

more time and care.] A transplant of the fascia lata was cut $\frac{1}{2}$ in. longer than the gap which was to be bridged, and sufficiently broad to allow of its being rolled into a tube. It was laid beneath the ends of the tendon, to which it was carefully sutured with fine catgut, and the sides of the transplant were then wrapped round the tendon ends, and so held by further sutures that it had the appearance of a rolled cigarette, with the remains of the tendon at either end resembling the tobacco. In this case a skin covering could not be provided, and the area had to be covered by a pedicled flap cut from the thigh. The pedicle was divided at the end of a fortnight, and a week later the patient was allowed to make a little movement, but this was not encouraged until six weeks following operation. The usefulness of the finger was completely restored.

III.

Transplants are also useful to cover the exposed brain, where the membranes are deficient, thus preventing it becoming adherent to the scalp.

In one case a patient suffered from severe Jacksonian epilepsy, with almost daily fits, following a gunshot wound of the head, which had already been trephined. On turning back the skin flap it was found to be adherent to the unprotected brain over an area as large as half a crown, and after separation this area presented the appearance of lacerated brain tissue, with a small old blood clot in the centre. The trephine opening was $2\frac{1}{2}$ in. in diameter. A flap of fascia lata was cut $\frac{1}{2}$ in. larger than this opening, and, after separation of the dura from the margins of the bony aperture, the edges of the fascial flap were tucked in so as to form a complete covering for the exposed brain, and a light curtain over the aperture in the skull. The skin flap was then reapplied and carefully sutured without drainage. The patient made a complete recovery, and had no further fits up to the time that I last saw him, some three or four months after operation. It is intended at a later date to close the opening in the skull by bone grafting, now that an efficient background has been provided.

IV.

Similarly, fascia lata may be used for repairing the urethra. I used it in the case of a large fistula which had been operated upon four times without success. I found a rounded opening in the penis, just in front of the scrotum, which would admit the end of a lead pencil. The skin was tucked in, and was adherent to the edges of the urethral mucous membrane. The parts were carefully exposed, using a median incision, and the skin and the urethra were very thoroughly separated. By using a flap cut from the side of the channel which had been established between the urethra and the surface I was able to close the latter without appreciably narrowing its lumen. This looked as if it might of itself have been efficient, but previous operations on these lines having failed, I felt that I must reinforce the union if success was to follow. I therefore covered the area with a flap of fascia lata about $1\frac{1}{2}$ in. long by $\frac{3}{4}$ in. broad. This was closely fixed over the sutured urethra with fine catgut, and the skin was very carefully drawn together over the fascia and sutured. At the same time a perineal drain was introduced and kept *in situ* for a fortnight. This patient made a complete recovery. There was never any leakage or any suggestion of subsequent stricture, and seven months after the operation I was able to pass a No. 10 rubber catheter without the slightest difficulty.

I have been surprised at the behaviour of the transplants in the presence of active infection. In one case of arthroplasty of the elbow, which I recorded in the *Edinburgh Medical Journal* (May, 1914), there was a severe outburst of suppuration, but in spite of that the large flap of fascia lata which had been used did not slough, and the result as regards movement was excellent.

Similarly, in one of the cases in which the fascia was used to repair a tendon, there was the recrudescence of sepsis which is so familiar in connexion with war wounds. After the discharge of pus the edges of the skin wound separated, exposing what looked like a big yellow slough, but actually the fascial tendon. It was not interfered with, and in a remarkably short time the wound healed by granulation, and the process of repair of the tendon was evidently not interrupted, for the patient regained movement in the terminal joint of the thumb.

These are illustrations of a few of the uses of fascial transplants. Ingenuity and necessity will suggest many more, and my experience leads me to believe that it can be freely used wherever it will fulfil the indications in view.

I have had no trouble associated with the area from which the flap is cut. I always expose it through a vertical incision on the outer side of the thigh, and, except where the transplant has been a very small one, I do not resuture the fascia, and I have seen no trouble from the break in the covering of the thigh muscles, though the patients sometimes complain of soreness and aching in that area for a time.

THREE ACUTE ABDOMINAL CASES.

BY

J. LIONEL STRETTON,

SENIOR SURGEON, KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.

THE three cases here reported have occurred since July, 1919, and are all of sufficient rarity to justify their publication. I have never seen a polypus of the stomach before, and I have never found an extensive haemorrhage between the walls of the intestine. The ovarian tumour is rare because of its size. The largest one I had removed previously contained four gallons. In these days it is seldom indeed that they are allowed to reach such dimensions.

CASE I.—*Polypus of Stomach.*

In July, 1919, I was asked to see a man aged 59, in consultation with Dr. Emrys-Jones, who was acting as locumtenent for Dr. Askey Wood. The patient had been suffering for six months from intermittent pains in the abdomen, which were thought to be biliary or renal colic. I ascertained that the pain came on about fifteen minutes after food of any description, but it was more severe after solid than liquid food. If the patient was lying in bed upon his back the pain did not occur, but if he was sitting up it always came on. There was no vomiting. The bowels were constipated. He had lost flesh (1st.). The conjunctivae had an icteric tinge and he appeared to be ill. The abdomen was too rigid to make a full examination, but there was tenderness two inches above and to the right of the umbilicus.

Operation.—I advised an exploratory operation, and the patient was admitted to the infirmary on July 21st, 1919. On July 22nd, under ether and chloroform administered by Dr. W. Miles, the abdomen was opened by a vertical incision through the right rectus muscle. The liver and gall bladder seemed to be normal. There was no dilatation of the stomach, and its appearance was natural. On manipulating the pylorus with my fingers and thumbs I could feel a substance which slipped from side to side within the stomach, and which appeared to be pedunculated. A transverse incision was made over this "substance." On exposure it proved to be a pedunculated polypus about $1\frac{1}{2}$ in. long and $\frac{3}{4}$ in. broad. The pedicle was attached to the posterior wall of the stomach about an inch inside the pyloric orifice. It was ligatured and removed. The stomach and abdominal wounds were closed in layers.

Description of Polypus.—The specimen removed was sent to Birmingham University for examination. Dr. Ball reported as follows:

"*Polypus of Stomach.* The growth is a simple adenoma consisting of gland spaces lined by a columnar epithelium. The epithelium shows degenerative and proliferative changes, and is frequently desquamated into the lumen of the acinus, but is everywhere contained within the basement membrane, and is, I think, without malignancy. Some of the acini are enlarged to form cysts, the contents being derived from degeneration of the lining cells."

After-History.—The patient made an uneventful recovery. The abdominal wound was healed on July 30th and the sutures were removed from it. He was able to take food without pain, and was discharged from the infirmary on August 18th. I saw him on October 2nd. He was then well, had gained 6 lb. in weight, and could take solid food without discomfort.

The diagnosis in this case appeared doubtful, but had we appreciated the importance of the history we might have suspected such a condition. The fact that the patient was free from pain when lying on his back was certainly significant when considered with the condition revealed at the operation—namely, "a pedunculated polypus . . . attached to the posterior wall of the stomach about an inch inside the pyloric orifice."

CASE II.—*Large Haemorrhage into Wall of Caecum.*

On October 4th, 1919, I was asked to see, with Dr. Brocket of Stourport, an unmarried lady, aged 22. She had been seized with sudden pain in the right iliac region the previous evening, when she vomited. The temperature was 101° and the pulse