

PART III.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—J. MAGEE FINNY, M.D., F.R.C.P.I.

General Secretary—JAMES CRAIG, M.D., F.R.C.P.I.

SECTION OF SURGERY.

President—SIR HENRY SWANZY, P.R.C.S.I.

Sectional Secretary—ALEXANDER BLAYNEY, F.R.C.S.I.

Friday, January 17, 1908.

MR. SETON PRINGLE in the Chair.

Grafting of Fibula to Tibia.

MR. R. ATKINSON STONEY read the notes of a case in which he had grafted the fibula to the tibia. Patient, a boy aged seven, was admitted to the Royal City of Dublin Hospital, November 26, 1905, suffering from acute osteomyelitis of tibia; he had been ill for ten days, and a huge abscess had formed involving the whole of leg from knee to ankle. The abscess was opened immediately, and the diaphysis of the tibia was found completely stripped of its periosteum. The necrosed tibia was removed by two operations, in January and April. By April, 1906, the sinuses had closed and an involucrum had formed in the lower and upper parts of the leg, but there was a gap of about one and a half inches between the two ends, due to destruction of the periosteum, as the result of the virulence of the original infection. An operation was performed, in which the neck of the fibula was cut across and the upper end of the lower fragment implanted into the upper end of the involucrum of the tibia. Firm union has now occurred, and the boy is able to run about without the aid of a stick, though there is considerable shortening, as the result of over a year's loss of growth while the illness lasted and the ends of the tibia were not in contact. The operation is a modification of one described by Hahn in 1885, and was suggested by a case reported by Professor E. E. Goldmann, of Freiburg, in the *Lancet* of January 13, 1906.

THE CHAIRMAN said the case was, so far as he knew, the first of the kind reported in Ireland, or at any rate shown at the Academy. He believed it was the only line of treatment which was likely in such a case to leave a useful limb.

MR. TAYLOR congratulated Mr. Stoney on the success of his operative procedure.

DR. STOKES asked if there was any tendency of the ankle to turn outwards.

MR. STONEY, in reply, said there was no tendency of the ankle to turn outwards. If anything, there might be a tendency to turn inwards, but such was hardly likely in the present case.

Post-Anæsthetic Vomiting.

DR. L. G. GUNN read a paper on the above subject. He first drew attention to the fact that, as the anæsthetists had not the after treatment of operative cases, they only to a slight extent realised what a troublesome complaint post-operative vomiting might be. He believed it was the duty of the surgeons to use every means in their power to prevent this vomiting. Dr. Gunn himself had been using a method, suggested by MacArthur, of giving the patient frequent drinks of pure cold water right up to the administration of the anæsthetic, and this method had been entirely successful in nine cases, partially successful in nineteen cases, and had had no result in twelve cases, out of the forty patients who had been treated in this way.

THE CHAIRMAN said he had, some years ago, carried out a series of observations on the action of the kidneys during anæsthesia. He found that the amount of nitrogenous material and water excreted during the anæsthesia was very small; but as soon as the patient came out of the anæsthetic the kidneys began to act, and there was a hyper-excretion of water and an increased excretion of nitrogenous material for some hours. It was possible that in this lay the explanation of the pain across the loin. He had noticed when administering anæsthetics that the less the patient was cyanosed during the administration the less vomiting there was afterwards, so that it was important to let the patient breathe a certain amount of fresh air.

DR. KIRKPATRICK said anæsthetists had not seen enough of their patient, either before or after the administration, to have had the importance of the question of post-anæsthetic vomiting impressed upon them. For some years he had considered the question, and disagreed with Mr. Gunn on some points. He (Dr. Kirkpatrick) thought the preparation of a patient had a good deal to say to the condition of the patient afterwards, provided the preparation was satisfactory. He did not look on abstinence from food as of such importance as thorough purgation some time before the anæsthetic was administered. Various

writers pointed out that the patients who usually gave most trouble with post-operative vomiting were those who suffered from more or less chronic constipation. He did not agree that the nature of the drug used had no very great effect on the post-operative condition. Occasionally after chloroform anæsthesia vomiting became so serious as to threaten the patient's life ; such a thing was exceedingly rare after ether. He was inclined to believe that the *method* of administering the anæsthetic—the nature of the anæsthesia obtained—was of far more importance than any other factor. The Chairman had pointed out the importance of avoiding cyanosis, and of giving fresh air ; when patients were treated by that method they soon recovered, and vomiting was exceedingly uncommon. He would add that anæsthetists had been in the habit of maintaining a depth of anæsthesia which was quite unnecessary in most operations. He had carried out experiments, as the Chairman had, which showed a great diminution in the function of the kidneys, and he could not but think that in a patient who was profoundly anæsthetised there must result a very profound toxæmia. The activity of the renal epithelium in certain animals was not at all as much diminished as it was in the human being during anæsthesia ; and it was very probable that that inactivity was associated with a fall in blood pressure.

MR. W. I. DE COURCY WHEELER said he had tried the open method of administering ether, and had found it very simple and the anæsthesia perfect. The patients never became cyanosed, but he had not had enough experience of the method to say whether the vomiting was less frequent. It was particularly suitable for old or fragile persons. Alcoholics, who were difficult to get under ether, vomited less than other patients ; if the anæsthesia was begun with chloroform and continued with ether the vomiting was far worse. Local anæsthesia was, he thought, the ideal method. It was perfectly safe to give if the proper drug was used.

DR. PUGIN MELDON said he found it useful to keep patients under the anæsthetic until they were back in bed. In that way the vomiting was not started ; they went off into a sleep, and got rid of a good deal of the anæsthetic.

SIR THOMAS MYLES thought that very little was known as to the cause of post-anæsthetic vomiting. He had known a lady, prior to the introduction of aseptic technique, to vomit incessantly for twelve days. Every drug, except one, that they could think

of was administered ; finally she was given half a grain of morphin hypodermically, and the vomiting ceased. He himself had been under every anæsthetic known. He had always insisted on having a cup of tea before the operation, and he was well purged out. He had never vomited or had a fit of sickness. He was inclined to think that the sickness was due to something inherent in the patient. In the majority of cases he thought they would be found to have some kidney trouble. He thought the experience from which Mr. Gunn made his deductions was too limited. If a careful analysis of the 20,000 cases administered annually in Dublin were made, as regards the urine and the vomiting, then they might be justified in making deductions ; but merely to say that in 20 per cent. of cases albumen was present was not sufficient evidence on which to base a generalisation. If a patient was kept on a table in a cold room they could not help giving them a renal chill.

MR. TAYLOR felt that cyanosis had something to do with the vomiting. In most cases of abdominal sections which he had done it had been his habit to give morphin either immediately before the anæsthetic or before leaving the table ; less anæsthetic was then required, and there was less vomiting. He thought the vomiting was less the result of swallowing the anæsthetic than of nervousness.

Exophthalmic Goitre.

SIR THOMAS MYLES read a short paper on a case of exophthalmic goitre which he believes to have been cured by a diet of milk obtained from a thyroidectomised goat. The patient was a married lady, twenty-five years old, and the symptoms had been developing for more than a year. All the well-marked features of the disease were present, and there had been a progressive loss of strength and colour. The goats were operated on by Professor Mettam, of the Veterinary College, whose co-operation was gratefully acknowledged by the speaker, and when, two days later, the little wound in the neck had healed, the goats were sent to the patient, who resided in the country, and the treatment was begun and steadily persisted in. At the end of a month the improvement was very marked, and at the present moment the enlargement of the thyroid is barely perceptible and the exophthalmos has disappeared. For the last few months the milk diet has been supplemented by the use of Merck's tabloids and by the administration of small doses of iron and arsenic.

Sir T. Myles in bringing the case under the notice of the Section did so with the hope of inducing other practitioners to give the method, which is simple but not costly, a fair trial.

MR. TAYLOR said the method had been tried on the Continent some years ago, and a powder made from the milk of thyroidec-tomised goats could be bought, but the professors on the Continent had not spoken much in its favour.

MR. W. I. DE COURCY WHEELER said the main danger was that, even if the symptoms apparently abated, the patient might at any time drop dead. He had seen astonishingly good results of operative treatment abroad, but he thought the operation must be an extremely difficult and anxious one to perform.

SECTION OF ANATOMY AND PHYSIOLOGY.

President—A. F. DIXON, M.B.

Sectional Secretary—E. P. M'LOUGHLIN, M.B.

Friday, January 24, 1908.

PROFESSOR A. FRASER in the Chair.

The Anatomy of the Iliac Colon in relation to Hernia.

DR. R. A. STONEY read a paper on the above. The subject was suggested by three cases which were recently seen by the speaker, where a hernia of this portion of the large intestine had occurred. Two were hospital patients who were operated on for the radical cure of left inguinal hernia, and in each case the sac, on being opened, was found to contain a piece of the large intestine invaginated through the posterior wall, the sac being incomplete. The third case was an old dissecting-room subject (male) with a large femoral hernia on the left side, which was found to contain, in addition to about three feet of the small intestine, a loop of large intestine which proved to be about three inches of the iliac colon. Though the iliac colon usually has no mesentery and lies far back in the iliac fossa, there are two conditions sometimes present which may increase the liability of this part of the intestine to become extruded from the abdomen—first, the presence of a mesentery (ten per cent. according to Jonnesco); and secondly, a low position in the iliac fossa; the intestine running along in close relation to Poupart's ligament. There are three ways in which a hernia of the iliac colon may occur:—(1) It may be drawn down into or through the inguinal canal by an extra attach-

ment of the gubernaculum—this is the congenital hernia ; (2) it may be drawn down by a protrusion of the peritoneum covering it in the formation of the sac of an ordinary hernia ; (3) there may be a giving way or lengthening of the supporting apparatus of this portion of the intestine, and a subsequent protrusion of it by the expulsive action of the abdominal muscles. The relations of the peritoneum forming the sac and covering the gut will differ according to the mode of formation of the hernia. In the congenital form the sac is probably always incomplete, as there is merely a displacement of the gut and the surrounding peritoneum into the scrotum, so that they maintain their normal relations to one another—*i.e.*, the peritoneum only partially covers the intestine. In the second form also the sac is probably always incomplete, as even if the gut had a mesentery to start with its left or lower layer would be taken up first in the formation of the sac before the gut was drawn into the hernia. Unless the hernia is of an enormous size this form is only likely to occur if the intestine has an abnormally low position. In the third form the presence or absence of a complete sac will depend on which of the two factors are at work. If it is due to a giving way of the attachments of the intestine it slides down behind the peritoneum, and the sac is only partial. This may be truly described as a “*hernia en glissade.*” If, however, it is due to a lengthening or stretching of the support of the intestine the latter either has a mesentery to start with or obtains one which finally becomes long enough to allow the gut to reach the internal abdominal ring and be herniated like any other portion of intestine. In this case, of course, the sac will be complete—in fact, it is probably only in the hernia formed in this way that the sac is ever complete.

PROFESSOR M'LOUGHLIN said that the attachment of the gubernaculum to the peritoneum of the iliac fossa and the drawing down of the testis on that peritoneum was the general rule. It was a rare event to have it left behind. If the pulling of the gubernaculum on this peritoneum was to be considered as the sole cause of the congenital variety of hernia of the iliac colon we should expect to find this form of hernia a common one ; but, as stated by Dr. Stoney, it is one of rare occurrence. The cause, in consequence, is more likely to be *rarely* present. Now, in the fourth month, when the gubernacular bundle is beginning to push its way through the abdominal wall into the scrotum, the hind gut is provided with a mesentery. Should that mesentery

be *unusually* long, especially about its centre or iliac colon portion, the free gut will swing low in the iliac fossa and the future iliac colon will come to lie in the dangerous zone beside the internal abdominal ring. Fusion of the mesentery with the peritoneum of the iliac fossa (as is the rule) may then take place, and the fusion will be with the peritoneum close to the opening in the wall into which the testis is passing. That peritoneum will be drawn down into the opening by the action of the gubernaculum, and so the gut will pass down the canal in the wall of the hernial sac. The cause of the congenital form is thus more likely to be a two-fold one—(1) The *accidental* lengthening of the mesentery of the mid-gut, (2) the action of the gubernaculum—the first being the determining factor.

DR. STONEY, in reply, said that Professor M'Loughlin's suggestion was extremely interesting, and was quite as probable an explanation as his own.

MR. ADRIAN STOKES exhibited a fœtus showing transposition of viscera with a tricœlian heart, and gave the following brief account of the specimen:—The specimen which I have here to-night was obtained by Dr. Jellett in 1896, and was shortly described by him in the *Lancet* of 1897 as a case of transposition of the viscera with a tricœlian heart. Last year Professor Dixon very kindly gave me the opportunity of dissecting the specimen which had previously only had its thoracic and abdominal cavities opened. It soon became apparent that there were present further abnormalities which, I hope, will make it in some way worthy of your attention. The fœtus is well formed, and lived for a few minutes; the viscera and great vessels show complete transposition; the heart has a single large ventricle and two auricles. It is very remarkable that the left or systemic auricle has no direct communication with the common ventricle, its blood passing through a large patent foramen ovale into the right or pulmonary auricle in order to reach the ventricle. This must be an extremely rare condition. There have been a few cases recorded in which the pulmonary auricle did not communicate with the ventricle, but none so far as I can find in which the systemic auricle did not do so. The only other condition which I desire to note is that the pulmonary artery lies behind the aorta, a condition which is not accounted for by the general transposition of the viscera. Professor Young lately described a very interesting case of a tricœlian heart in a man of about thirty-seven years. In it the chambers of the heart were in

their normal positions, but the aorta arose, he believes, in front of the pulmonary artery. The condition of transposition of the viscera is rare. But few cases have been exhibited in Dublin, among which the best known case is the one exhibited by Professor Fraser before the Royal Academy of Medicine in 1894. The condition of the heart is unlike any case of which I can find a record.

PROFESSOR FRASER exhibited and made remarks upon—

(a) *The Hemispheres of an Encephalon, with well-marked Interruption of both Central Sulci.*

The isthmus which connected the anterior and posterior central gyri lay on the same level as these gyri, and somewhat nearer the medial than the lateral ends of the sulci. The width was slightly over 1 c.m. This condition of the central sulcus is said to be rare. Professor Burt G. Wilder in his essays—Vol. VIII., p. 158; and Vol. IX., p. 108, of the *Reference Handbook of the Medical Sciences*—gives the number of recorded cases as ten or twelve. He illustrates a case where the central sulci were interrupted (as in the above) in the hemispheres of a philosophical writer of some standing.

(b) *A Duodenum of Unusual Form.*

The third or transverse portion, instead of passing across the structures in front of the vertebral column in the usual manner, passed upwards on the right side behind the second or descending portion as far as the foramen of Winslow, thus forming a U-shaped loop, the two limbs of which could only be seen from the right side. Each limb measured slightly over 10 c.m. At the level of the foramen of Winslow the ascending limb passed across behind the superior mesenteric artery to the left side, and then formed the ordinary duodeno-jejunal flexure. The common bile duct passed between the descending and ascending limbs of the loop. The root of the mesentery had its origin from the duodeno-jejunal flexure from the processus uncinatus of the pancreas, and from the sharp bend formed by the descending and ascending limbs of the loop.

(c) *On the Main Artery of the Limb passing down on its Posterior Aspect.*

Professor Fraser had observed this on the left limb of a middle-aged female during the summer session of 1907. He expressed regret at being unable to show the specimen, which he had thought

to be well preserved until a few days before the meeting, when he found that in consequence of some inattention of the Anatomical attendant it had gone astray. In this case the inferior gluteal artery was the size of the common femoral. It accompanied the great sciatic nerve, and became the popliteal at the back of the knee. This latter vessel had the ordinary distribution. On examining the front aspect of the limb the external iliac was found to be smaller than ordinary, but of some size, until as common femoral it gave off its deep division. The superficial was of slight calibre, and was lost in small branches at the knee. Unfortunately, he did not at the time examine the course of the veins. According to Quain, this form of distribution has been recorded ten times, but none of the sources are given. On turning to Henle's *Gefässlehre*, Professor Fraser found on pp. 303 and 312 a case illustrated (from Dubrueil) exactly similar to the one noted above. Also cases that have been described in English—Green (*Lancet*, February, 1832), who described a French specimen (as Fagge notes); Professor Ellis (*Med. Chir. Trans.*, Vol. XXXVI., p. 439), double, but in malformed limbs; and, finally, that of Fagge (*Guy's Hospital Reports*, Vol. X., p. 151), where an aneurysm had been found on the artery. Mr. Fagge considers that the cases recorded by Cailliard and Dubrueil were written from the same specimen, although at an interval of years.

PROFESSOR M'LOUGHLIN, in discussing the latter communication, stated that only that morning, in his dissecting-room, he had seen two examples of portion of the abnormal artery described by Professor Fraser. On *each limb* of a female subject the following was shown:—(1) The normal sciatic artery coming out of pelvis internal to sciatic nerve, and running down in superficial fascia. (2) *A second artery* (the abnormal one) coming out of the pelvis, through a two-inch long cleft in the sciatic nerve and running down deep to the biceps to the popliteal space. Here the artery of the right side communicated with the popliteal artery by a branch about the size of a small digital artery.

Dorsal Origin of the Right Subclavian Artery, with associated vascular irregularities.

PROFESSOR M'LOUGHLIN exhibited a case of the above. The *right subclavian artery* arose from the lower part of the arch opposite the disc, between the third and fourth vertebræ. It was bulbous and wide (24 mm.) at its origin; then, passing behind the

œsophagus and trachea, its anterior wall was deeply cupped, the posterior bulging markedly, so that the vessel would be crescentic on section. The vessel ran upwards and to the right, crossing in the middle line the disc between the second and third vertebræ. Its calibre was here much reduced, the tube—although flattened—measuring 13 mm. It now ran up the side of the body of the second vertebra and, opposite the middle of the body of the first vertebra, gave off a very large vertebral artery, the remaining three branches coming off the artery 1 cm. further on. The internal mammary was large, the superior intercostal small, and the thyroid axis small. The length of the artery up to origin of vertebral was 6.25 cm. ; the whole of the first stage 7.50 cm. Its calibre just before the origin of the vertebral was 10 mm. The small superior intercostal artery gave off a profunda cervicis branch, which passed back *below* the inner end of the first rib, and not, as is usual, above it. The branch to the second space was joined, as is frequently seen, near the posterior end of the space by a small artery, which came up across the body of the third vertebra, and was found to arise from a small first aortic intercostal, which was itself a branch of a very large right bronchial artery. This small artery linking the aorta (through its first aortic intercostal branch) with the subclavian (through its superior intercostal branch) has been held (just as the small aberrant artery which is occasionally seen linking the aorta directly with the subclavian) to represent in miniature the right dorsal aorta between the fourth arch and the point of fusion of both dorsal aortæ to form the descending aorta ; but its presence in this specimen *in association with the irregular subclavian*, which is a persistent right dorsal aorta, is in contradiction to this view. This occasional aberrant artery, however, runs a course similar to that of the irregular subclavian, and should certainly be regarded as a vestige of the right aorta. Of other arterial irregularities present in this subject two may be specially noted. (1) The *lingual* artery was a very small twig arising a short distance above a small superior thyroid. It ran up to the hyoglossus, where it gave off its suprahyoid branch, and ended under the posterior part of that muscle by ascending in the position of a dorsalis linguæ branch. The greater part of the lingual area was supplied by a large artery which came off a large submental branch of the facial. This artery pierced the mylohyoid far back, ran forwards on the surface of the anterior part of the hyo-

glossus, giving forwards a sublingual branch, and backwards—under the anterior border of the muscle—a dorsalis linguae branch. It then ascended to the under surface of the tongue, where it ran in the intermuscular cleft, as the ranine artery, to meet the opposite ranine at the tip of the tongue. The opposite lingual artery was normal. If we regard the lingual artery as a prolongation from the ventral end of the second aortic arch, and the facial artery from the end of the first aortic arch, then our abnormally constituted lingual artery represents two arteries, one of the first arch and one of the second arch, brought together about the middle of the tongue, or just about the line to which the second arch portion of the tongue reaches forwards to embrace the tuberculum impar and first arch portion of that organ. (2) The *vertebral* artery arising from the irregular subclavian was very large, the left vertebral very small. Both ran normal courses, and formed the basilar at the lower edge of the pons. The left vertebral was a very slender twig at the point of union. At the upper end of the pons nearly the whole artery turned to the left as the left posterior cerebral artery, a small branch only going out to the right; the posterior cerebral of the right side being mainly formed by a very large posterior communicating artery from the internal carotid. There was no direct communication between the internal carotid and the posterior cerebral arteries on the left side, the posterior communicating artery being but a very small twig which failed to reach the posterior cerebral. Associated with the irregular subclavian artery was a *thoracic duct* which, as is usual in such cases, ended on the right side of the neck. The duct lay in the middle line over the twelfth dorsal vertebra, passed to the left over the body of the eleventh vertebra, and then ran up on right side of the aorta, crossing the origin of the large right bronchial artery. Opposite the fourth dorsal vertebra it divided into two parts, which swept round in a circle and soon reunited, and then the duct turned over to the right (directed by the subclavian trunk which lay on its left), lying on the third and second vertebræ. Then crossing over the front of the subclavian artery, half an inch below and internal to origin of vertebral and outside the vagus nerve, it passed up to end in the outer and posterior aspect of the internal jugular vein about one-third of an inch above its junction with the subclavian. A small lymph vessel, corresponding to the jugular trunk, opened just beside it into the jugular vein. No trace of a thoracic duct could

be found on the left side of the neck, but on examining the upper part of the posterior wall of the thorax on the left side a large vein was seen running over the heads of the ribs. It opened above into the left end of the left innominate vein, and at its lower end turned transversely across the disc, between the seventh and eighth dorsal vertebræ, to end in the ventral azygos major. It drained the upper eight intercostal spaces of the left side.

Unusual Position of Large Intestine.

PROFESSOR M'LOUGHLIN also called attention to the unusual position of the large intestine in the same subject. The ascending colon lay altogether in the iliac fossa, the cæcum was in the pelvis, and the descending colon was buried in a recess behind the lower third of the kidney and deep under cover of the psoas lower down.

Irregular Disposition of the Hind Gut Division of the Colon.

PROFESSOR M'LOUGHLIN gave an account of a case of the above which he had seen recently in the dissecting-room. From the splenic flexure the colon ran down in its normal position to the iliac fossa. Near the outer border of the psoas it turned sharply on itself and ran straight upwards on the mesial side of the first tube. The second tube was provided with a short mesentery. Reaching the front of the lower part of the kidney it again turned sharply and ran down along the inner side of the second tube, and, dropping over the brim of the pelvis just behind the iliac bifurcation, it turned almost immediately backwards into the curve of the sacrum, where it soon lost its mesentery and became the rectum. The second and third tubes were obviously the sigmoid flexure, and the unusual position was probably due to the fact that the middle portion of the mesosigmoid failed to grow in proportion to the upper and lower parts, and that, in consequence, during the growth of the lumbar region, the central part of the flexure was left stranded high up in the position of the second bending over the lower end of the kidney. The line between the second and third tubes lay immediately over the course of the ureter, and the shallow recess beneath the second bending already noted might be regarded as an unusually highly placed intersigmoid fossa.