CHARING-CROSS HOSPITAL.

Practical Clinical Remarks

ON

RESECTION OF THE ANKLE-JOINT.

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GENTLEMEN,—We now come to that important class of cases wherein disease is restricted to the ankle-joint or its immediate neighbourhood, the rest of the foot being healthy. Assuming that other remedies have failed, I propose to-day to consider what operation should be selected in cases of this description. I find, upon looking through the publications for the last ten or twelve years, that, exclusive of those upon whom I have operated myself, with the exception of one in which the late Mr. Statham excised the astragalus, one in which Mr. T. Wakley successfully removed the astragalus and os calcis, and one in which Mr. Teale also successfully excised the astragalus, os calcis, and cuboid bone; and setting aside those in which amputation of the leg was performed,—that in this large and important class of cases the otherwise sound and useful foot has been sacrificed, and the patients submitted to either Syme's or Pirogoff's operation, or a modification of either one or the other.

In a previous Lecture, I described to you the steps of these two operations, and, whilst admitting the great superiority of these methods over the old and now almost exploded amputation of the leg, I at the same time expressed my opinion that both these operations had frequently been performed where other operative procedure would have been more judicious; that it is in comparatively but few cases they are really necessitated—for instance, those in which there is so large an amount of disease or mischief present as to preclude all hope of preserving a good and useful foot. The operation which I would advise you to select, in the cases under consideration, is that of Resection or Excision of the Ankle-joint.

This operation was first performed by Moreau, and subsequently by Jäger and others, abroad; but I believe I am justified in stating that, with the exception of those which I have done myself, there is not a single instance upon record in which excision of the ankle-joint has been performed in this country for disease. Why, in this age of conservative surgery and joint resection, the solitary exception should be made in the case of the ankle-joint, and so useful a member as the foot needlessly sacrificed, is an anomaly which I confess I do not understand. We have seen that, in Syme's operation, independently of the entire loss of the foot, there is danger of sloughing or bagging of matter; and in both Syme's and Pirogoff's operations, inflammation, sloughing, and suppuration in the course of the divided tendons. In excision of the ankle-joint these dangers do not exist. I have now performed this operation four times—three times successfully, once unsuccessfully, the patient dying, some six months after the operation, from lung disease, the result of a dissipated life. In no instance has there been sloughing; there need not be a single tendon or artery divided; there is afterwards very little if any deformity—comparatively little shortening; the foot is preserved, and, as you will see by the cases I here relate, the patients are able to walk and run about with scarcely any perceptible limp.

You must bear in mind, however, that the success of the operation depends upon leaving the anterior and posterior tibial arteries intact. If these vessels are injured, there will not be sufficient blood supplied to nourish the part, or power to heal the wound; sloughing will ensue, and your operation fail. Your object also should be, to preserve everything as intact as possible, and on no account to open into the sheaths of the tendons.

The plan I have found answer best is the following:—Commence the incision about two inches above and behind the external malleolus, and carry it across the instep to about two inches above and behind the internal malleolus. Take care that this incision merely divides the skin, and does not penetrate beyond the fascia. Reflect the flap so made, and next

cut down upon the external malleolus, carrying your knife close to the edge of the bone, both behind and below the process; dislodge the peronei tendons, and divide the external lateral ligaments of the joint. Having done this, with the bone nippers cut through the fibula, about an inch above the malleolus; remove this piece of bone, dividing the inferior tibio-fibular ligament, and then turn the leg and foot on the outside. Now carefully dissect the tendons of the tibialis posticus and flexor communis digitorum from behind the internal malleolus. Carry your knife close round the edge of this process, and detach the internal lateral ligament; then, grasping the heel with one hand, and the front of the foot with the other, forcibly turn the sole of the foot downwards, by which the lower end of the tibia is dislocated and protruded through the wound. This done, remove the diseased end of the tibia with the common amputating saw, and afterwards, with a small metacarpal saw placed upon the back of the upper articulating process of the astragalus, between that process and the tendo-Achillis, remove the former by cutting from behind forwards. Replace the parts *in situ*; close the wound carefully on the inner side and front of the ankle, but leave the outside open, that there may be a free exit for discharge; apply water dressing, place the limb on its outer side on a splint, and the operation is completed.

You observe that the only parts cut through are the skin, the external and internal lateral ligaments, and the bone. Neither the extensor nor flexor tendons, the anterior nor posterior tibial arteries, are injured; consequently you have not to tie any vessels. The patient should be placed in bed, with the leg lying on its outer side; and you should be careful that there are openings in the splint-pad and oil-silk corresponding to the wound, otherwise the pressure of the pad causes the matter to be retained, and will, as I have seen it do, give rise to severe constitutional disturbance.

CASE 1.—*Resection of ankle-joint; cure.*—J. H.—, aged eight years, of strumous diathesis, admitted January 30th, 1851, into Charing-cross Hospital, under my care, with disease of the ankle-joint. He had been in a delicate state of health for some time, and about three years before his admission a boy threw a stone, striking him on the left instep, from which period the joint became affected. On admission, the part presented a glossy, shapeless appearance; hot, and extremely painful on the least movement. It would admit of little, if any flexion, the child being quite unable to bring his heel to the ground. There were two fistulous openings anteriorly to the external malleolus, through which a probe could readily be passed into the joint. Shortly after his admission he was attacked with scarlatina, from which he soon recovered; the joint, however, becoming more painful, and the sinuses discharging thin offensive matter. It was deemed advisable to excise the ankle-joint in this case, the disease appearing to be confined to that part, and I accordingly performed the operation on Feb. 17th, 1851. There was some pain for the next three or four days, caused principally by inflammation of the absorbents of the leg and thigh. The inflammation, however, completely subsided in the course of a week. From this time he continued to improve until he left the hospital in the following May, cured.

I saw this boy about two years ago; he had become tall and stout, and he told me he could walk, run, and jump without any inconvenience. He wore a thick sole to his boot, and there was scarcely any perceptible limp in his walk.

CASE 2.—*Excision of the ankle-joint; death in six or seven months.*—M. A. G.—, admitted under my care into Charing-cross Hospital in Sept., 1857. About four years previously a swelling, not preceded nor accompanied by pain, commenced in front of the ankle-joint. A wound soon after appeared behind the external malleolus, which remained open and discharging for about a month, when it healed, and she felt nothing more of it for about eighteen months, when the joint again became swollen and very painful; but she continued to walk about until fourteen months before admission, when the symptoms became so aggravated, that she could not walk at all, whilst for the last five months she could not put her foot to the ground.

When admitted, the joint was much swollen; there were three openings in front of the internal malleolus, which communicated with the joint. On October 5th I excised the ankle-joint. She did not suffer much afterwards, but at the same time she did not progress so rapidly as the other cases have done. She became impatient, and left the hospital without my consent before the part had healed, and I subsequently learned that she died of lung disease some six or seven months after the operation.

CASE 3.—*Excision of the ankle-joint.*—W. R.—, aged twenty-five, admitted under my care into Charing-cross Hospital on August 27th, 1857, with disease of the ankle-joint. When three years old he slipped off the pavement, and sprained his ankle, which became much swollen and very painful. Matter formed, which was let out with temporary relief; but he shortly became worse, and was taken to the late Sir Astley Cooper, who advised amputation of the limb; but his friends objected, and Sir Astley ordered him a wooden leg, to wear from the knee. This he did for six months, but without benefit. Having friends in Killarney he was sent there for change of air, and was attended by a medical man, who, he says, “worked wonders” with him. His treatment was peculiar. He ordered off the wooden leg, and then desired him to put his foot to the ground, and walk in the meadows barefooted every morning, whilst the dew was on the ground. At night he gave him oil to be rubbed into the ankle before the fire. At the end of six months he had improved so much, that he could walk without the assistance of a stick. The joint continued to get stronger every year, but remained stiff. In June, 1855, he came under my care with an ulcer on the side of the ankle. This healed in a fortnight, but the stiffness remained. He was now persuaded to place himself under the care of a quack, who pronounced the ankle to be out of joint. After oiling it well for three weeks with neat’s-foot oil, he (according to the patient’s statement) “snapped the bone into its place,” after which he lost the stiffness, and could walk “as well as he could wish.” Eight months after this he slipped again, and again consulted the quack, who, he says, “put the bone in a second time.” Again, a third time, he fell, and a third time he consulted his friend, who this time failed to accomplish his object, in consequence, as he said, of the “nerve resisting him so much.” The ankle now began to swell and inflame; matter formed, and he consulted Mr. Tucker, who kindly sent him to me. I need scarcely tell you that when I attended him for the ulcer, there was no dislocation present. “The snapping and putting in the bone” was, doubtless, the disruption of adhesions, and, in all probability, caused the aggravation of mischief necessitating the operation.

At his admission his ankle was much swollen, inflamed, and very painful; there was an open wound over the external malleolus, communicating with diseased bone, and discharging offensive matter. Soon after, the inner side became swollen and intensely painful. An incision was made to relieve the tension, and afforded much ease. He, however, gradually became worse; his health began to give way, and, therefore, on Sept. 10th, I excised the joint. The tibia, fibula, and astragalus were all found diseased. He went on very well. He experienced some little drawback from a small spicula of bone coming away, but he left the hospital cured.

This woodcut is copied from a model of his foot, taken by Mr. Arnold, the house-surgeon, a few days since.

This patient, who is an exceedingly ingenious fellow, has invented a boot, which appears to answer admirably. In the description which he has sent to me, he says, “Finding the cork sole did not give me any spring, I began to consider what I could substitute for the cork, so as to give me greater facility in walking. The result of my meditations was, a steel spiral spring, fixed in the heel of the boot (A), the cork, of course,

being cut away. Then I have the cork sole down to the toes (B). On the top of the spiral spring is a circular piece of thick leather (C); and I derive great benefit from the invention.”

He also wears the usual side irons for weak ankles. I met him the other day walking down Hampstead Hill, and he certainly showed no signs of having undergone so serious an operation.

CASE 4.—*Excision of the ankle-joint and removal of a considerable portion of the os calcis, for disease.*—J. T.—, aged six years, residing at Hounslow, was sent to Charing-cross Hospital, under my care, in September, 1858, by my friend Mr. Chapman, having for the previous four or five months suffered pain in the left ankle. On the 26th of August he leaped from the top of a wall five feet high, and so hurt the joint that he had to be carried into the house. Considerable swelling and suppuration ensued, and, when admitted, he was very ill, weak, and feverish, his countenance being anxious and indicative of great suffering. There was an unhealthy-looking wound in front of the internal malleolus, discharging a large quantity of offensive matter, and a probe readily penetrated the joint, which was found extensively diseased. His friends having consented, I excised the joint on the 9th of October, in the manner I have described to you; but after removing the upper portion of the astragalus, which was carious, I found the disease extended through and beneath this bone, involving the os calcis to a considerable extent. The convex tibial articular surface, and the whole of the body of the astragalus behind the interosseous calcaneo-astragaloid ligament, were removed, as well as the remains of the corresponding articular surface on the upper part of the os calcis; whilst the interior of that bone, behind the interosseous notch, was carefully gouged out before the disease could be got rid of; so that little more than the shell of bone remained in that situation. No arteries were tied. The boy suffered very little constitutional disturbance, his general health and appetite having been uniformly good, and his progress satisfactory.

March 10th, 1859.—He is now cured. He can stand upon his foot and walk without pain. The wound is entirely healed.

This case shows in a very marked manner the value of the operation. Had Pirogoff’s method been employed, it would inevitably have failed, from the condition of the os calcis. It also shows how extremely valuable is conservative surgery—in young people, at all events. The amount of disease and the state of the os calcis almost made me doubt the result; but yet we find the child going through the cure with scarcely any constitutional disturbance, the cavity in the os calcis filling up and becoming sound, and a perfect cure taking place in five months from the time of operation.

Mr. Arnold kindly took a cast of the boy’s foot before he left the hospital, and you will see by the woodcut, drawn from

that cast, that, notwithstanding the extent of disease, the limb is by no means unsightly.

With these cases before you, I feel quite justified in advising you to adopt this method wherever you are called upon to operate, provided the disease appears confined to the ankle-joint. In gun-shot wounds and other injuries, your proceedings must be guided by the extent of implication of the soft parts.

NOTES

ON

BARRACKS AND MILITARY HOSPITALS IN HOT CLIMATES.

By GAVIN MILROY, M.D., F.R.C.P.

(Continued from vol. i. 1859, p. 531.)

IN my last paper, I spoke of the ventilation of barrack-rooms, their usual defects, and the constructive arrangements that are necessary for securing—at all times, during the night as well as the day, and in all weathers and seasons—a constant renewal of the contained air, so that cool, fresh air may be continuously streaming in, to replace the heated, vitiated air, which should be as continuously streaming out. This object can be rightly effected only by keeping the simple principle steadily in view, that the atmospheric currents in an occupied room must be mainly in the direction from below upwards, and that therefore the openings for admitting the air should be at or near the floor, and the openings for its escape at or near to the ceiling. A room with people in it is, as regards its ventilation, very much like a lighted lantern, which of course must have air-apertures at the top and bottom, for the entrance and escape of the air, to keep up a clear and uniform combustion. The same openings will not serve the double purpose of letting air into a room and letting it out; nor does it ever answer well to have the two sets of openings near to each other, or on the same level. A variety of mechanical arrangements and contrivances have been proposed to get over this difficulty, with the view generally of drawing the supply of fresh air from a height above the ground, and introducing it into the chamber by the ceiling; while the vitiated air is made to escape by the ceiling also, but through separate openings, or is drawn out by suction through openings near the floor. But none of these contrivances have succeeded in effecting the great *desideratum*—constant freshness and purity of the atmosphere in the chamber; and the plan is quite unsuitable for the common natural ventilation of rooms, whether for the healthy or the sick.

In the case of underground rooms, and of cabins on the lower deck of a ship, where the supply of fresh air must be, in whole or in part, by a descending current, and where there may be only one opening alike for the entrance and the escape of the air, it is always well to divide the opening by a diaphragm, so as to make two parallel flues or channels; for with a little management—such as by suspending a lamp just within the lower end of one of the flues, so as to give rise to and maintain an upward current—pure fresh air will flow down through one, and the hot impure air will pass up the other. I have known this plan to answer remarkably well in improving the ventilation, and in materially lessening the heat of the engine-room, in men-of-war steamers in hot climates.

The ordinary windsails, and even the metal air-shafts passing from the upper down to the lower decks, are very far from answering their purpose, as every one knows who has been at sea; and more especially at the very time of all others when ventilation is most needed—namely, at night, when the passengers and most of the crew are below. Let any one go down to the lower deck of a ship-of-war a couple of hours after the men have turned into their hammocks—and the same holds good of a barrack-room even without the horrible tub nuisance—and he will cease to wonder at the large average amount of general sickness, and at the frequency and fatality of outbreaks of epidemic disease, more particularly in hot climates, in both of the public services.

This is a point to which I am most anxious to draw the attention of medical men, on therapeutic as well as on preventive or hygienic grounds, because, as it seems to me, its importance is far from being generally recognised in practice. I allude to the special and imperative necessity of a pure atmosphere during sleep, alike for the maintenance of health or for

recovery from disease. The greater restlessness of patients generally at night, and the frequency with which the attacks of fever and cholera occur between midnight and early morning, are, I have not a shadow of doubt, due in a great measure to the too common neglect of this most important rule. During the famine fever in Ireland, the poor creatures who lay night and day without shelter by the roadside where they were stricken, recovered much better than those who remained in dwellings; and in the West Indies I know that it has been remarked by many, with respect to the yellow fever occurring on board merchant vessels, that if the patients are laid on the deck under a simple awning, with no other treatment than cold water given to them, their chances of recovery are often quite as great, if not greater than if they had been sent on shore and treated with the usual appliances of hospital attendance. Very few recover of those who remain in their berths between decks. The dreadful mortality every now and then taking place on board our ships-of-war on the West Indian and African stations is mainly owing to the want of large, airy space for the men at night. They should be much more dispersed than they usually are, and especially upon the upper decks. The only safe and sure way of finding out the goodness, or otherwise, of the ventilating arrangements of a chamber—whether in a barrack or a ship-of-war—is to ascertain its condition at night, and after it has been occupied a few hours. If its atmosphere be then sweet, we need have no fears about it during the day; but not *vice versa*, be it remembered.

I pass on now to notice another very frequent cause of atmospheric pollution in barracks in hot climates—viz., that arising from foul latrines and offensive drains. The mischievous effects of this evil close to or within human dwellings are only second in point of virulence to those of over-crowding and insufficient ventilation. As the effluvia from the skin and lungs of human beings, when detained and concentrated in a confined space, are apt to generate and infallibly to aggravate and spread typhus fever and hospital gangrene (as unhappily is again the case at the present moment in the French and Austrian hospitals in the north of Italy), so will putrescent miasms as certainly engender typhoid and dysenteric affections.

It is quite true that the coexistence of other agencies—atmospheric, dietetic, and other—may be necessary to give full effect to an epidemic malignancy of these diseases, and it is also true that the presence of suchlike, or even more occult, causes may be equally necessary for the development of the specially pestilential distempers of Asiatic cholera, yellow fever, and the plague. But who of any experience will deny that, on the other hand, if it were not for the existence of local atmospheric contamination, the morbid results would be comparatively but little disastrous? Local evils, if they are not the *cause*, are assuredly the *occasion* of most of the mischief. If such be the case, who can wonder at the amount of ordinary sickness amongst our troops everywhere, and especially in hot climates!

The state of the privies in *all the barracks* in Jamaica, except at the stations on the sea shore, where the closets project into the water, was, at the time of my visit, altogether most disgusting. It would be difficult to exaggerate their abominable condition at Kingston, Up-Park Camp, and Spanish Town. Repeated complaints had long been addressed by the parochial authorities and by private persons to the military authorities on the subject, but without avail. One of the principal thoroughfares in Spanish Town, the seat of the Government, was purposely avoided from the horrible pollution of the atmosphere of the barrack privies. Equally bad was the state of things on the west side of the Kingston barracks in the middle of the town, and where, besides a large open latrine within the walls sending forth its foul effluvia all round, there are two or three huge vaulted cesspits immediately under the surface on the outside of the building, and which, it is believed, contain the accumulated excretions of hundreds of men for a great many years—no one can say for how long. The closet for the use of the officers was kept tolerably sweet by the waste water being carried through it and flushing it out daily into the enormous covered receptacle outside the walls. Why should not some similar arrangement have been used for the comfort and health of the men?

So great is the privy nuisance at Up-Park Camp—a remarkably fine site by nature, and one which ought to be a healthy spot for the troops, as it is found to be by the inhabitants, many of whom have their villas in the neighbourhood—that, in my opinion, it must have had no inconsiderable share in producing the dreadful amount of sickness which used so often, in former seasons, to prevail amongst the soldiers there, and may account for the cleaving of the choleraic poison to this station during