

ART. VIII.—*Clinical Cases in Surgical Practice**. By K. I. O'DOHERTY, F.R.C.S.I., Lecturer and Demonstrator of Anatomy and Operative Surgery at the Ledwich School of Medicine, and Surgeon to St. Vincent's Hospital.

RESECTION has occupied so prominent a place in modern surgical literature, that any facts, however small, tending to add to our stock of information on the subject, will not perhaps be unacceptable.

I am therefore induced to detail, shortly, the particulars of the following cases recently under my care: they are of comparatively minor importance, involving, as they did, in each case, the removal of but a small portion of the body; but they present features that may be deemed interesting, if not instructive.

In the numerous contributions to this important branch of conservative surgery with which we have been favoured of late years, attention has been almost exclusively directed to the larger joints: resections of the knee, elbow, hip, and shoulder have become "familiar to us as household words;" the minutest details in reference to them have been dwelt upon, and the young surgeon, familiar especially with the valuable papers of Mr. Butcher, published in this Journal, can be at no loss for guidance in his conduct of them, either as regards the best methods of operating, or the most suitable after-treatment.

When, however, he comes to seek for similar information concerning that larger class of cases he will meet with in which partial disease of the bones of the foot requires his operative interference, he will seek in vain for any established mode of practice to guide him; the consequence is, that we daily witness in hospitals the most varied treatment adopted in such cases.

One surgeon, guided by the precept so strongly inculcated by Dupuytren^b, when protesting against Chopart's operation, "in all such cases to remove only just so much of the foot as the disease imperatively required," has recourse to that seemingly barbarous, and certainly unscientific, because uncertain, proceeding of gouging out the diseased structure.

Again, another surgeon, despairing altogether of eradicating the disease by any such mincing method as this, has recourse to one or other of the bold amputations of Hey, Chopart, Syme, or Pirogoff, any one of which is at the best a sad muti-

* Read before the Surgical Society.

^b Leçons Clinique des Amputations.

lation, especially to the working man, to whom the full use of the lower extremity is always of such vital importance.

The following cases illustrate in a marked manner the success attending the practice of simple resection when applied to remedying the diseases of the small bones of the metatarsus and the phalanges, and go, I think, some way towards indicating this to be the most efficient mode of proceeding in all cases presenting, like them, the features of uncomplicated disease of these small bones or their joints.

CASE I. Resection of Second Metatarsal Bone.—Patrick Weldon, aged 18, a resident of Drogheda, was admitted into St. Vincent's hospital on the 30th September. His occupation was that of field labourer, and he stated that he had always enjoyed excellent health until about nine months previously, when one day whilst at his work, he felt some pain in his left foot, which was speedily followed by redness and swelling. A few days after, the swelling "burst," giving exit to a free discharge. This discharge continued, and six weeks later a second opening formed more posteriorly. Matters continued in this way for three months, when, seeing no sign of amendment, he sought relief at the Drogheda County Infirmary. It was there poulticed and kept at rest, but, no tendency to heal exhibiting itself, he resolved to come to Dublin.

On examining it, I found the anterior portion of the foot considerably swollen, especially over the situation of the second metatarsal bone, where the integuments were inflamed, and two fistulous openings existed. One of these was situated near the phalangeal extremity of the bone in the second interosseous space, the other near its tarsal end. Upon probing them, carious bone was felt deeply at the bottom of each, and from the direction which the probe took, the disease was clearly indicated as existing in the second metatarsal bone. The most careful examination failed to detect any evidence of its having extended to the neighbouring bones. Although perceptible fullness and tenderness on pressure existed in the sole of the foot, sufficient to induce some doubt as to the limited extent of the disease, yet, as the boy's health was unimpaired, the tarsal portion of the foot as yet unaffected, whilst the general glandular system exhibited no trace of a scrofulous taint, it was deemed a fair case for trial of resection of the diseased bone with its corresponding toe.

Accordingly, this operation was performed on the 16th of October. An incision which commenced at a point a little posterior to the tarso-metatarsal articulation of the second toe

was carried forwards and obliquely outwards, to embrace the fistulous opening in the interosseous space. It was then passed beneath the base of the first phalanx in the usual manner, and carried back obliquely to meet the origin of the wound. The soft parts were then carefully dissected from the metatarsal bone, commencing at its distal extremity, and gradually proceeding backwards. I found it much more difficult than I had anticipated to separate its posterior extremity. Keeping in view the great importance of not wounding, if possible, the large arteries which communicate by the side of the joint formed by it and the cuneiform bones, induced me to be perhaps more tedious in my dissection than was needful. After a good deal of trouble, I succeeded in removing it. The hemorrhage was very copious, as I found it impossible to avoid wounding the communicans tibialis artery and some branches of the deep plantar arch. There was no difficulty experienced in ligaturing them. I allowed the wound to remain exposed for a couple of hours to the action of the air, and then, having carefully removed the clots, I brought the edges as tightly together as I prudently could, by means of long strips of plaster.



I found I was enabled thus to bring the sides of the three anterior fourths of the wound into close apposition. The leg was kept elevated, and the patient treated in the usual way, water-dressing only being kept applied to the wound. He progressed so favourably during the first week that I had no occasion to disturb the parts further than by changing the water-dressing. Upon removing the strips of the plaster on the ninth day, I had the satisfaction of finding the anterior half of the wound healed by the first intention. On the details of the progress of the case since then, it is unnecessary to dwell. A succession of inflammatory attacks had to be combated, from time to time, in the neighbourhood of the wound.

One or two of these were so severe as to cause me some anxiety for the ultimate result. However, they all terminated in the formation of superficial abscesses, which, being opened early, healed without further mischief. I supported the patient's strength with wine, giving him at the same time free doses of quina and iron, and had the satisfaction of finally seeing the inflammatory action altogether subside.

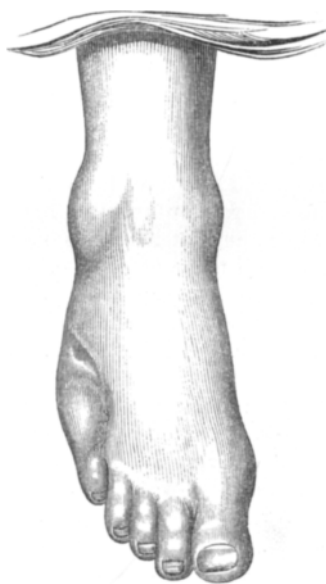
During these critical successions of attacks, three distinct abscesses formed over the outer metatarsal bones, and a fourth opened a way for itself into the sole of the foot: since then, everything has progressed favourably, and I think I may fairly console myself for all the trouble I have had with it, by the reflection that I have left the lad as good a foot as he ever had—a far more satisfactory one than would have been left him had I indulged in my first impulse, to perform Hey's section.

This case appears to me to be of some interest, on account of the rarity of this particular form of resection. I have not, indeed, been successful in discovering, as yet, an account of a similar one which was followed by a favourable result. Mr. Erichsen, in his *Surgical Treatise*, speaks in very doubtful terms of the success likely to follow the attempt to excise this bone, especially in cases of disease of the kind under which my patient laboured. He deprecates it chiefly on account of the intimate connexion existing between it and the large synovial sac of the tarsus, which almost invariably partakes in the diseased action of the bone. In my case, however, no such complication evidently existed, although an examination of the bone shows that the diseased action had extended back close to the tarsal articulation.

CASE II. *Resection of the Metatarso-phalangeal Articulation of the fifth Toe.*—Anne Kelly, aged 16, was admitted into hospital on the 11th of January. She stated that she had always enjoyed robust health until two years ago, when she met with an accident. In rapidly running out of the doorway of her residence, a large nail, which protruded from the doorpost, caught the side of her foot, and inflicted upon her a severe lacerated wound; she suffered much from it at the time, but gradually recovered; the wound skinned over, but continued very tender to the touch; she was able to walk without pain upon it until six months before her admission, when, having occasion to go some distance with a tight boot upon the foot, she found it, on her return, very painful at the site of the old wound; on removing the boot, it swelled, and became again much inflamed. An abscess resulted, which in a few days gave way,

leaving a fistulous opening, that has continued discharging ever since. Lately a second opening made its appearance more posteriorly. She continued, as long as she could, limping about upon it, and endeavouring, by a variety of applications, to induce it to heal. Finding, however, that the inflammation increased, she applied for relief. On examination I found the outer anterior portion of the foot much congested and swollen. On probing the fistulous openings, they were found to converge to the metatarso-phalangeal articulation of the fifth toe, into which the probe readily entered; the joint was completely disorganized.

Her general health was as yet unaffected; the appetite was good; and all her functions were normally performed. No glandular enlargement or other cachectic appearance was discovered. I considered it a favourable case for trial of simple resection of the joint; a form of operation first performed, Ferguson tells us, by the distinguished American Professor Pancoast. A semilunar incision was made, commencing at the proximal end of the fifth metatarsal bone, and extending to the root of the little toe, the convexity being directed inwards far enough to embrace the fistulous opening, which was situated in the fourth interosseous space. A flap was then formed, by turning out the part included within the incision, dissecting it carefully off the bone. The diseased joint was at once exposed; the distal end of the metatarsal and almost the entire of the first phalanx were found in a carious condition. The latter was removed from its articulation with the second phalanx, the articular face of which was unaffected, and the distal third of the metatarsal bone was taken away with a bone nippers; scarcely any bleeding attended the operation. The flap was again laid *in situ*, and the same form of dressing I had found beneficial in the previous case was adopted in this. Strips of soap plaster, of sufficient length to more than surround the foot, bound the parts firmly together, keeping the flap accurately



applied in its proper place; pledgets of lint, moistened with cold water, were applied over the wound, and she was kept, of course, at perfect rest, with the limb slightly elevated. The straps were not removed until the tenth day after the operation, when the wound was found to have healed throughout by the first intention, except at the site of the old sinuses. The subsequent progress of this case so closely resembled the previous one, that but a few words are necessary to describe it. The sinuses continued a long time discharging; occasional slight inflammatory attacks occurred in their neighbourhood, which readily yielded to rest and resolvent treatment. By repeated applications of nitrate of silver, melted upon the end of a probe, and thus conveyed to the bottom of the fistulæ, these latter gradually closed, and a complete cure has resulted. The accompanying woodcut, taken from a sketch of the foot in its present condition, presents scarcely a trace of deformity; the fifth toe, if we except a very slight amount of retraction, exhibiting in no other way the least evidence of its having lost its bony support. She is enabled to run upon it as well as ever.

A striking feature of the operation in this, as well as in the previous case, is that the sole of the foot was left absolutely intact, whilst its breadth was not in the slightest degree impaired. The feet, therefore, remain as perfect organs of support and progression, as if no portion of them had been removed. I may here mention that the boy Walsh continues now, six months after his discharge from hospital, perfectly well, the foot being as useful to him as it ever was, and free from all trace of disease.

CASE III. *Resection of a portion of the Tongue with the écraseur.*—Bridget Nugent, aged 19, a healthy-looking girl, was admitted into hospital on the 4th of May, 1858; she stated that for many years she had noticed a kernel, the size of a small filbert, situated at the anterior inferior aspect of her tongue. It had never given her the least pain or annoyance until about a month before her admission, when she began to feel some stinging pains extending from it back towards the base of the organ and parotid region. At the same time she noticed a white spot making its appearance on the surface of it. Finding, after some days, that this spot had increased in size and become fissured, that the kernel itself began rapidly to enlarge, she got frightened, and a severe hemorrhage, which issued from one of the fissures a day or two before her admission, urged her to apply for relief.

When first brought under my notice, the tumour had

attained the size of a small walnut. It was attached by a broad base to the inferior right aspect of the tongue, at the junction of its anterior and middle thirds. It was uniformly hard and smooth to the touch, except upon its free surface, which was fissured and covered with an adherent gray slough; the root, well-defined, seemed lost in the healthy structure of the organ close to its mesian line. When the tongue was drawn in, the tumour, resting in the sublingual space, gave her but little annoyance; but on attempting to speak or masticate her food, the pain became very severe. Her general health was unimpaired. The glands in the neighbourhood of the disease were, to all appearance, perfectly healthy. In carefully examining the nature of the tumour with the aid of the microscope, I had the advantage of being assisted by my accomplished friend, the late Mr. Thomas Ledwich, and, from the appearances exhibited, there seemed no doubt it was a case of epithelial cancer.

A second severe hemorrhage, which occurred a few days after her admission, forced me to active measures, and with the concurrence of my colleagues, Doctors O'Ferrall and Quinlan, I resolved to remove it. I considered it a favourable case for the employment of the *écraseur*, and accordingly with this instrument the resection was performed on the 10th of the month.

Persuaded of the necessity of avoiding a too hurried section of so vascular an organ, I determined to extend the operation of removal over some hours; and, dreading the amount of pain which would necessarily be inflicted, I had recourse to the expedient recommended by Mr. Hilton, with a view of effectually preventing it. This was to divide the gustatory nerve, on the side intended to be operated upon, as it crossed the floor of the mouth.

I found this by no means so easy a matter to accomplish as I had anticipated from experiments upon the dead body. The free venous hemorrhage caused by the simple division of the mucous membrane over the track of the nerve so embarrassed me in the search for it as to give rise to some delay. Having found it, however, and divided it, I proceeded to use the *écraseur* in the manner recommended by M. Chassaignac, and which I explained very fully in a notice of the instrument in a previous Number of this Journal.

Having isolated the tumour with a strong ligature, and then tightly fixed the chain round the part, placing it well at the healthy side of the ligature, I had the girl conveyed to bed, and as she lay quietly there on her back, the instrument was

fixed upon a pillow close by, and on a level with her mouth. Every half-hour the constriction was increased by so much as was indicated by a click of the instrument. Dr. Quinlan kindly relieved me at intervals in the performance of this office; and at 6 o'clock in the evening (the constriction having been commenced at mid-day) the section was completed. A few drops of blood only followed its removal. Immediately after the instrument was removed, the wounded surface of the tongue expanded to its full dimension; and, as I looked upon it, covering almost one-third the extent of the organ, and found no blood coming from it, I could not but congratulate myself on having employed an instrument that accomplished my purpose in so satisfactory a manner.

The further progress of the case may be summed up in a few words:—No hemorrhage whatever occurred; a grayish sloughy pellicle formed gradually over the wounded surface. After some days this began to separate at its edges, and as it did so the lips of the wound appeared to contract towards each other. On the 7th of June the last central portion of this pellicle was thrown off; and, within a week after, the only trace of the operation visible was a large notch in the original site of the tumour. The functions of the organ were not in the slightest degree impaired, and she left the hospital perfectly well.

In this case I think it must be conceded that the *écraseur* performed the section of the tongue in a more satisfactory manner than we could have anticipated from any other instrument or mode of procedure. Having been, I believe, amongst the first to direct the attention of surgeons in this country to the advantages of this instrument, I may be pardoned if I add a few words in defence of what I cannot but regard as a real boon to the operating surgeon in many of the most disagreeable cases requiring his interference. It occurs to me that the discredit into which it has fallen of late has arisen from the fact of too much having been attempted to be made of it. An impartial judge of its merits will, in my opinion, simply regard it as a substitute for the ligature, and, contrasting the action of the two in all those cases in which we consider it advisable to strangle parts in lieu of dividing or removing them with the scalpel, I cannot imagine any fair grounds upon which we can hesitate in recording our opinion in favour of this instrument, possessing, as it unquestionably does, when properly used, all the advantages of the ligature in preventing hemorrhage, with the additional inestimable benefits of being far more rapid in its action, and much less painful.

Its employment in cases of this kind is, I think, especially worthy of our attention, on account of the fatal results which have attended amputation of the tongue performed in the usual way in those recent cases in the practice of Mr. Syme with which we are all familiar. It is true that my case, involving as it did the section of a portion, and that the least vascular, of this organ, will assist us but little in coming to a decision as to the merits of the *écraseur* in those more formidable ones requiring the removal of the whole or greater part of it. All that I would venture to suggest is, that the results were sufficiently satisfactory to warrant us in giving it a fair trial in those capital cases, before we agree to the dogma of Mr. Syme, that they are to be considered as beyond the reach of our art.

One point very important to bear in mind when employing the instrument is, I think, clearly established in this case. I refer to the necessity of accommodating its action, as it were, to the vascularity of the part operated upon.

I was enabled to remove this tolerably large portion of the tongue without, I might say, the loss of any blood. This I attribute altogether to extending the period of section over six hours, thereby giving ample time for the blood to coagulate in the constricted vessels before dividing them. I entertain no doubt whatever, that, had I divided the parts at once with the instrument, the hemorrhage would have been almost as great as if I had employed the scalpel. I am induced to lay stress upon this from observing that Mr. Skey, in his late work on *Operative Surgery*, regards this delay as unimportant. I feel, I confess, some hesitation in differing with so distinguished an authority, but until I shall see as large a portion of the tongue removed, using the instrument in this rapid manner, with as bloodless a result as followed the mode I adopted, I shall continue to adhere to the rules recommended by M. Chassaignac. With regard to the section of the gustatory nerve, I must confess I should not be inclined to repeat the experiment, had I again to operate in a similar case, partly because I fear the search for the nerve, as a general rule, will be likely to give the patient almost as much annoyance as the section of the tongue itself, chiefly however, because I am disposed to think it altogether unnecessary. In the case I have detailed, the section of the nerve, I imagine, had little effect in altering the amount of pain produced by the instrument, inasmuch as the section with the latter had to be made very close to the mesian line of the tongue, much closer, indeed, than I had imagined would have been necessary, until I came to fix on the chain of the instrument, and therefore at a part which would

naturally be under the sensory influence of the opposite nerve. That this was so, was evidenced by the amount of pain caused by the first three or four movements of constriction, which was so great as to compel me to employ chloroform to subdue it. After these first few constrictions, however, when in fact the part enveloped by the chain was *strangled*, all sensation seemed to depart, and, during the remainder of the time occupied in the section, she suffered no pain whatever.

Subsequent experience of this instrument in the removal of piles, and other small tumours, in cases in which chloroform was not employed, has tended to confirm in my mind the conviction, first entertained after witnessing the section of the tongue in this case, that the operation of removing or dividing parts with it is comparatively painless, after the parts have been well constricted by the chain of the instrument—a fact which, if verified, it is needless to say, would enlarge to a great extent the sphere of its utility; the great objection to its more general employment at present being the fear of the pain likely to be caused by it, requiring the patient to be kept under the influence of chloroform for a dangerously protracted period.

ART. IX.—*Observations on the Action of the Pancreatic Juice on Albumen.* By WM. BRINTON, M.D., &c., &c. In a Letter to the Editor.

SIR,—Your Number for November, 1858, contained an able analysis of some views lately propounded by Dr. Corvisart, respecting the action of the pancreatic juice on albumen within the living body. The direct contradiction afforded to some of Dr. Corvisart's statements by those of various other observers, published both before and since his elaborate monograph, induces me think your readers may be interested in a brief communication of the result of my own observations on this subject. Without presuming that these observations reconcile all the conflicting statements hitherto made on both sides of this important question, I venture to think that they indicate the cause of some discrepancies; and even in some degree vindicate the accuracy of both Dr. Corvisart and his antagonists. And I may add, that they seem to afford some suggestions respecting the main question at issue, as well as some hints respecting the most profitable direction of future inquiries.

It is chiefly as regards the solvent power of an infusion of pancreas on albuminous substances that Dr. Corvisart and his antagonists are most directly at issue. In the experiments of