REMARKS

ON

PERFORATING ULCER OF THE FOOT.*

By HENRY HANCOCK, F.R.C.S.,
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In July 1866, I was consulted by a young man aged 24, who, twenty years before, was attacked with swelling and inflammation of the great toe of his right foot. As this condition was attributed to frost, no especial attention was paid; but, after this state had continued for some time, an opening formed on the under surface of the metatarso-phalangeal joint, which continued to discharge; and a peculiar excrescence formed round the opening, and gradually increased, but gave him so little pain that he was able to go to school and move about his father's farm with little inconvenience, although there was always more or less discharge. For three years the disease was confined to the great toe, when the same mischief appeared on the under surface. On the metatarso-phalangeal joint of the little toe of the same foot, a similar excrescence formed to that on the great toe; but it was removed by caustic, and the part healed up. Soon afterwards, however, a fresh wound appeared in the neighbourhood, and remained to the time when I saw him. Five years subsequently, the disease attacked the sole of the foot near to the tarsal bones; and abscesses formed on the leg at different times and in various places; but these all yielded to treatment, so that for several years the mischief was confined to the foot. Until two years previously to my seeing him, his walking had not been materially interfered with; but since then it had become much more difficult, from acute pain in the region of the heel and ankle. When admitted into the hospital, the foot was swollen and somewhat distorted, the soft parts presenting a brawny hardness. The great toe was enlarged and misshapen; and there were various ulcerated openings, discharging offensive matter, at the situations already indicated, as well as on the dorsum of the foot.

No plan of treatment, either local or general, having hitherto been of service, I removed the foot by a modification of Pirogoff's amputation, and the patient recovered.

Some months after this, Mr. Wilkes of Salisbury sent me the particulars of the following interesting case.

James G., aged 39, a labourer, from West Knoyle, Wiltshire, was admitted into the Salisbury Infirmary on April 20th, 1867, for diseased metatarsal bones of his right foot of twenty years' duration, commencing in a painful corn under the ball of the great toe, preventing him from walking. It afterwards gathered, and discharged for four years, when the first piece of dead bone was removed, and then it nearly healed. Since that time to his admission, pieces of bone had been constantly coming away from the foot, each time preceded by abscess; and, as the dead bone was thrown off, the wound would close; but the foot was never well for more than two or three months at a time. The left foot became affected in a similar manner. About ten years previously, pieces of bone came away at various times; but it was now in a quiescent state. Its great toe, however, was withered; the second and third were mere stumps, without nails; the fourth had been amputated; the fifth was as yet natural, and the metatarsal bones appeared to be sound. From the commencement of the disease (twenty years ago), his feet had always been sweating, whether winter or summer; and, although often cold to the touch, he had never felt cold in them. His feet sweated when no other part of his body did; and, when the wounds were discharging, they were always very offensive. He was a dark and tolerably healthy-looking man, and had never had any other complaint than these bad feet. His mother and two sisters suffered in a similar manner; they were all dead. The mother was about sixty when she died; all her toes were gone, and her feet were diseased and discharging as long as he could remember. His two sisters' feet were more extensively affected than his were now; the younger of the two sisters was twenty-two years of age when she died. His father, brother, and two other sisters, are living, and at present are healthy. Partial removal of the foot by Mr. Coates having failed in a previous case to arrest the return of the disease, whilst Syme's amputation was successful, Mr. Wilkes performed this operation, and the patient did well.

More recently, Mr. Wilkes has kindly sent me the particulars of two other examples of this malady.

A gardener, aged 21, a native of Salisbury, was admitted into the Salisbury Infirmary, under the care of Mr. Wilkes, on September 5th, 1868. His feet have been diseased for three years, commencing in hard corns in each foot, under the first joint of the great toe, and under the heads of the metatarsal bones of the middle and little toes. These corns increased in hardness, became tender, suppurated, and continued as running sores. When the corns came, the feet began to sweat, but not so the rest of the body. On his right foot are three corns; those under the great and middle toes have been running sores, but that under the little toe has not become so as yet. The left foot presents a cicatrix and withered great toe, from loss of bone after a running sore on its under surface. The middle toe has just been amputated by Mr. Wilkes for caries, and there is a corn on the under surface of the little toe.

The other case is that of H. M., aged 20, first cousin to the preceding patient, and a native of Grinstead, a village six miles from Salisbury, who was admitted under the care of Mr. Wilkes on August 15th, 1868. His feet have only been bad four months, and consequently are not so much affected. The disease began in a similar manner in hard corns, with offensive sweating, followed by tenderness, suppuration, and sinuses. By rest, the sinuses have closed; but he has still thickening of structures at the heads of the metatarsal bones of the right foot, chiefly in the ball of the great toe; and three corns in each foot, on the under surface of the heads of the metatarsal bones of the middle and little toes.

Both the patients are large-formed lads, rather tall, fair, delicate, and strumous-looking. The mother of the first says that her husband had a weeping corn under one of his great toes for four or five years before he died of consumption, at the age of forty. She has buried two children, aged respectively three and six years, from decline; and has one daughter living, with scrofulous glands of the neck. Her own feet have not been affected; but her sister, the mother of the last patient, has had bad feet for years, with discharging corns and diseased bones. She is now a cripple, and unable to move about.

This peculiar and serious affection has scarcely been recognised in this country, but appears to have been first noticed in France by M. Cloquet in the year 1837; subsequently, by M. Boyer and Marjolin; and more recently in a clinical lecture delivered by Nélaton, and published in the *Gazette des Hôpitaux* in January 1852, under the title "Affection singulière des Os du Pied". Nélaton describes it as commencing with phlyctæna on the pad of the foot. The epidermis is raised by a small quantity of purulent serum. When this is opened into, the subjacent dermis appears of a rose-colour; and, when touched, is highly sensitive. This state may continue for some time, when the dermis in its turn gradually ulcerates, and a small fistulous opening is established in the subcutaneous cellular tissue, which will not heal, but continues to discharge serum slightly tinged with pus. If, after some five or six weeks, the sinus is examined by a probe, the subjacent bone is felt rough and necrosed; and a sequestrum subsequently forms. Such are the phenomena which occurred over and over again in the same patient for a period extending over twelve years, and always in the same order. From this patient, Ricord in 1840 removed the sequestrum of the head of the fifth metatarsal bone of the left foot. Two years afterwards, Blandin removed a sequestrum from the first phalanx of the second toe of the left foot. Some time later, Nélaton removed a sequestrum from the first phalanx of the fifth toe of the right foot. Eleven months after this, he performed the same operation on the fourth toe of the right foot. Soon after this, the patient applied to Boyer at the Hôtel Dieu for a greyish-coloured excavation over the head of the first metatarsal bone of the left foot. Boyer removed the whole of the exposed bone, with the surrounding soft parts; and applied the actual cautery to the bottom of the wound. Somewhat later, Michon removed the first toe of the left foot; and, later still, Malgaigne removed the first toe of the right foot. Notwithstanding these numerous operations, the disease was not eradicated; for, in a few months, the patient returned to the Hôtel Dieu with several fistulous openings over the heads of the metatarsal bones of the left foot, for which Malgaigne amputated through the bodies of the bones. Thirty-five days afterwards, the patient left the hospital, to return again in a few months with the same mischief on the face of the stump; and for this the entire foot was removed. Thus, during the twelve years, the patient underwent six operations on the left foot, the last of which was its entire removal; and three on his right. But in 1852, when Nélaton published the case, the patient was still suffering from the same complaint; there were phlyctæna opposite the heads of the second and third metatarsal bones of the right foot, and the patient regarded these toes as virtually lost.

* Read before the Medical Society of London, January 4th, 1869.

The publication of Nélaton's lecture was shortly followed by a paper from M. Vesigné of Abbeville in the same journal, dated February 5th, 1852. He states that, up to that time, he had searched in vain for an account of this singular affection. His description differs from that of Nélaton, inasmuch as Nélaton asserts that the disease commences in phlyctæna. Vesigné, on the contrary, describes it as originating in a bunion or flat corn with callous thickening; and in this he coincides with Mr. Wilkes, who describes it as commencing in an ulcerating corn in the sole of the foot, gradually invading all the metatarsal bones and phalanges until they are destroyed.

This apparent discrepancy probably arises from these gentlemen having seen the disease at an earlier stage than Nélaton was able to do in his patient, particularly as Vesigné admits the existence of phlyctæna in his patient. Be this as it may, the following are the particulars of his case.

"It is more," he says, "than twenty years since I was called to a man named Josse, then about twenty years of age, a hard-working gardener, almost insensible to pain, and of robust constitution. He could scarcely walk or bear upon the sole of his right foot, from pain in the metatarso-phalangeal prominence of his great toe, arising from what at first might be taken as a bunion or flat corn, in the centre of which was a brownish spot, a little depressed, and equally dry. Thinking that fluid blood or pus was confined, I carefully scraped off the epidermis until I exposed the dermis and recognised its rose colour. This was followed by an excavation, the edges of which were rounded and smooth, and entirely void of granulation. These edges could be raised all round; and the bottom of the excavation was equally smooth, and resembled dermis more than cellular tissue: whence I judge that the disease originated in the substance of the skin." No benefit resulted from this little operation; and M. Vesigné lost sight of his patient for seventeen years, when he again applied to him. His foot was now attacked with phlegmonous swelling, situated more especially in the soft parts covering the metacarpal bone of the great toe (right). A large pale sanious ulceration, surrounded by thick callous epidermis, replaced the original mischief. With a probe, a piece of loose bone was felt. This was removed; and the patient, considering himself cured, left the hospital.

Two years later, however, or in 1851, he again applied. The inner border of the right foot (that which had been diseased) was extremely deformed. The right toe and first metatarsal bone were shorter; so that the second toe projected beyond it; and an oval wound existed in the plantar region, over the metatarso-phalangeal joint of the second toe; whilst the disease is appearing at a corresponding point on the little toe, in a flat callosity, with its brown centre.

In the three years' interval since last seen, the left foot had been attacked in the same way and at the same situation, but had progressed with greater rapidity. A large fungoid ulcer, surrounded by callous edges, occupied the sole of the foot; whilst another existed on its dorsum, both discharging foetid serous fluid; whilst necrosed bone could be distinctly felt.

Now what is the nature of this disease, to which Nélaton gives no name, and Vesigné that of "perforating ulcer of the sole of the foot"? Is it, as Mr. Wilkes considers, one of the many developments of scrofula allied to phthisis? Is it, as Vesigné imagined, a variety of palmar psoriasis? Is it due to syphilitic taint in the system? I fear that our knowledge of this remarkable affection is too limited to answer these questions definitively. All agree as to the locality of origin being the pad of the sole of the foot, corresponding to the heads of the metatarsal bones, especially that of the great toe—due, doubtless, to the pressure exerted on this part by the superimposed weight of the body. At the same time, it is evidently constitutional, as, in the first case which I have here narrated, the patient's hand was similarly affected; whilst Nélaton informs us that his patient, a cabinet-maker, was frequently obliged to leave off his work for a time, in consequence of his hands being threatened with similar mischief. Again, the disease is hereditary. Nélaton's patient was one of six brothers, of whom, in 1852, two were still suffering, and one had already died from the complaint. Among the six, the first, third, and fifth were free; whilst the second, fourth, and sixth were victims to this affection. In Mr. Wilkes's first case, as already stated, the mother and two sisters, all of whom are dead, had the same complaint. The mother was about sixty when she died; all her toes were gone; whilst the sisters' feet were extensively affected, pieces of bone continually coming away. The subjects of his second and third cases were cousins; the father of the second suffered from the malady for four years before his death from consumption; whilst the mother of the third is now a cripple, and unable to move about, having for years had bad feet, with running corns and diseased bones.

The results of treatment have been most unsatisfactory. All sorts of

remedies, local as well as constitutional, are stated to have been tried, and to have failed. Vesigné, who, as we have seen, regarded the chief as a variety of palmar psoriasis, prescribed Fowler's solution of arsenic in doses not exceeding eight drops a day; and continued this treatment for some considerable time, apparently with good results, so much so that, when the patient left the hospital, the wounds were almost entirely closed, although dead bone remained. But, five days afterwards, he again returned to the hospital with an opaque phlyctæna by the side of the original wound, presenting all the characteristic symptoms of the disease. Notwithstanding, M. Vesigné vaunts this remedy, asserting that, "though a cure cannot be hoped for by simple and constitutional treatment, still the patient may be restored to a state of comparative comfort; whilst the case related by Nélaton would seem to prove that all mutilation is contraindicated, since operations do not prevent a return of the disease." Nélaton also deprecates operation. Are we to continue to amputate? he asks. "He thinks not. We see that, after amputation, the mischief reappears in every part exposed to pressure, the skin of the heel alone excepted; and consequently the whole weight of the body should be made to fall upon the heel exclusively."

It is exceedingly difficult to understand how a patient with a weeping sore in the sole of the foot (nearly closed though it may be), communicating with dead bone, can be said to have been restored to a state of comparative comfort by constitutional treatment, especially when we read that the patient so restored returned to the hospital after so short an interval of cessation of such treatment as five days, with phlyctæna and all the other characteristic symptoms of the disease.

If, therefore, we accept the doctrines of Nélaton and Vesigné, nothing remains but to leave the patient to his fate as a hopeless cripple, and to amuse him with palliative treatment. Both these surgeons appear to me to have overlooked facts of the greatest importance in arriving at their conclusions: first, that the disease invariably commences in the region of the anterior extremities of the metatarsal bones and their joints with the toes; that its tendency is to confine itself to this region; and that its progress towards the tarsal bones is marked by extreme tardiness: and, secondly, the complete immunity of the region of the heel. We are left in doubt by Nélaton whether constitutional treatment was employed antecedent to, or combined with, the various operative procedures. Consequently, in the first instance, it would undoubtedly be our duty to remove the sequestrum and diseased soft parts, and to give the patient the benefit of constitutional remedies combined. But if, notwithstanding, the disease returns, there can no longer be a question, considering the complete success that attended Pirogoff's amputation in my case, and Syme's amputation performed for this malady in the Salisbury Infirmary by Mr. Wilkes and Mr. Coates, as well as the immunity of the heel-region already alluded to, that although, as a general rule, we should sacrifice as little of the foot as possible, this is an exceptional disease; and that, when once perforating ulcer of the sole of the foot is established and recognised, it is better at once to remove the whole of the metatarsal bones, either by Chopart's, Syme's, or Pirogoff's amputations, than, by palliative operations and remedies, condemn our patient to a succession of painful disappointments.

[The following letter, addressed to Mr. Hancock, has been forwarded for publication by the author. We insert it here on account of its having arisen out of the reading of Mr. Hancock's paper.]

Laverstock House, Salisbury, February 2nd, 1869.

Sir,—I have seen in the BRITISH MEDICAL JOURNAL of the 23rd ultimo, that on the 4th you read a paper, before the Medical Society of London, on "Perforating Ulcer of the Foot", and that—according to the report of your observations—you stated: "It commenced as a phlyctæna on the pad of the foot. . . . All writers agree that it commenced in the sole of the foot, corresponding to the head of the metatarsal bones, doubtless from the pressure exerted on the part by the weight of the body. . . . The disease commenced in the anterior part of the foot, and the heel never suffered." In your paper you mentioned that Nélaton, amongst others, had drawn attention to the disease.

My excuse for addressing you on this subject is the interest which I experienced in hearing M. Nélaton, in January 1866, describe what he termed perforating disease of the foot. He said: "It is an Eastern disease, for which no cure is known. It commenced by a little induration in the skin of the heel, between the tubercles of the os calcis. After about six weeks, the subject of it is unable to bear weight on it, and a small hole appears in its centre; a sero-purulent discharge takes place, and the aperture closes, to reopen very soon; then, pus escapes. The use of a probe soon gives indications of the os calcis being bare, and a partial amputation becomes necessary. Iodine, nitrate of silver, and other applications are useless. The head of the first metatarsal bone is the next osseous part diseased, and becomes affected in a precisely similar mode as the os calcis. Then one bone after another becomes affected,

each seat of disease beginning in the skin as the first did. The excision of one bone is useless; five or six have been excised from one foot; but the disease has recurred in those left. The man at present in hospital with this is rather old (48) to have it if being usually found in young men. In this case, the disease has not penetrated beyond the skin. The patient ruptured the gastrocnemius of the same side a year ago; the ends were not approximated; and the result—the tendo Achillis and muscle not acting on the heel—is that unusual weight has been thrown upon the diseased heel in walking. A week later, M. Nélaton spoke of the case, remarking upon the peculiar character of an opening—in the centre of a circular, depressed, black portion of skin, of the size of a shilling—which had formed, and looked “as if it had been cleanly punched out”: there was not any puriform discharge. A stick of chloride of zinc was applied to the opening. A fortnight subsequently, the disease was in much the same state, but the edges of the opening were blue. I regret that my observation of the case then ceased.

I have italicised those portions of Nélaton's description in which it appears to me that you differ with him. That description was taken during a clinical lecture, and forms part of a paper which I read before the Southampton Medical Society on the 3rd September 1867.

I am glad you have given your attention to this disease, fully concurring with you that it has not been sufficiently recognised. My interest in the case now mentioned was partly due to the disease being a new one to me at the time. I then sought in vain in several British works on surgery for information or notice of the disease.

As my object in now writing has been to extend the knowledge of a locally intractable malady, I hope you will have no objection to my sending a copy of this to the BRITISH MEDICAL JOURNAL.

I am, sir, your obedient servant,

STANLEY L. HAYNES, M.D.

Henry Hancock, Esq., F.R.C.S.

ON THE VALUE OF TINCTURE OF CANTHARIDES IN SOME FORMS OF PYELITIS.

By EDWARD MACKEY, M.B.LOND., ETC.,

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To Dr. Greenfield belongs the credit of having first drawn attention to the above subject; and his *Treatise on the Safe Internal Use of Cantharides*, published in London in 1706, contains some valuable observations, now not generally known. In our recent literature, good accounts of the disease may be found in Prout (*Diseases of the Stomach and Urinary Organs*, 3rd edit., p. 347) and in Roberts (*Renal Diseases*, p. 383); but neither there nor in any of a large number of authorities whom I have consulted do I find any notice of this remedy for it, except in Stillé (*Materia Medica*, 3rd edit., vol. i, p. 381).

The two following cases occurred to me some years ago, but I delayed their publication, in the hope of being able to support them by additional facts; but the disease is comparatively rare, and I relate them now, in the hope that a more extended trial may be given to the remedy, when the attention of the general body of the profession is redirected to it.

CASE I.—Agnes H., aged 34; married early; no children; by profession a musician. About the age of ten occurred the earliest symptoms she can remember; viz., smarting pain in the urethra, with frequent calls to pass urine, and violent pain in the right loin, darting downwards. After some days of suffering, she recovered for the time, but felt the same occasionally, though to no great extent, till the year 1862, when, being engaged to sing at Bristol, she caught cold. Then she had most severe smarting at the fourchette; pain up the urethra, made intense by the passage of urine, which became full of pus; and pain in the right loin. (Mr. Lang attended her; and, in addition to other treatment, removed from the meatus what seems to have been a vascular tumour, which had been cauterised once before.)

In the Bristol Hospital, under Dr. Fripp, she remained for four months, and by the end of that time was free from pain; the urine was clear, but she could not retain it longer than an hour.

At the end of the year 1862, she was in Leeds, when the above symptoms returned; and, in the course of the attack, she passed much dark blood *per urethram* for about a week. Later on, she was admitted into the Infirmary, when Mr. Teale sounded her for stone, without finding any; and she passed under the care of Dr. Hardwick, then of Mr. Wheelhouse. In addition to the other symptoms, paraplegia came on, and continued for two or three months. The part of her treatment that is most impressed on her memory is the application of

three leeches to the fundament every other day for some time. It was nearly twelve months before she was able to return to her home in Birmingham (1864). Afterwards, she continued to suffer more or less, and came under the care of a large number of practitioners in this town.

In July 1865, I first saw her as a dispensary patient. Her symptoms had been much aggravated during the last few weeks; and she lay in bed, with the knees drawn up. She had rigors at times, and thirst; there was much mental depression. She had constipation, but was able to take a fair amount of food, and there was not much emaciation. The menses were regular, always inducing aggravation of the nephritic symptoms. Her greatest torment was a constant call to micturition, occurring literally every ten or fifteen minutes, day and night. She had pain down the right leg, and often felt a darting pain along the course of the right ureter; then a sudden flow; then a severe smarting, “as of an ulcer at the neck of the bladder;” then relief. Once or twice every day, she had paroxysms of violent pain, referred to the right kidney and “passages”. A specimen of urine, taken from twenty-four hours' quantity of about two pints, was pale, slightly acid, of specific gravity 1015, with a precipitate of pure pus to the extent of two to four ounces. On some days, there were passed numbers of soft whitish rolls, narrow, about a quarter of an inch long. She described them as “skins”; and, under the microscope, they were found to consist of tessellated or polygonal epithelium. There would be, at times, much fullness of the renal region when these did not pass; and relief and subsidence of the fullness would follow the excretion of a large quantity. As to her treatment, she had already taken a great number of remedies without much relief. I saw prescriptions for iodide of potassium, copalba, alkaline diuretics, and anodynes in every shape. She found temporary ease from drinking infusion of althæa with acacia, and from hot baths and poultices; but, after inquiring into the effect of all the medicines she could remember, I found that she attributed good effects to a mixture containing one drop of tincture of cantharides, to be taken three times in the day. It had been prescribed for her by my predecessor and friend, Mr. G. Elkington, at the suggestion of our mutual friend, Dr. Dyce Brown; but circumstances had not permitted her to continue its use for more than six weeks. I began it immediately in sugared water; but her pains were so intense, that I gave her also chlorodyne once or twice a day (this she had had for many months before). She took a colocynth and henbane pill once or twice in the week, and continued the althæa and poultices, but had nothing else as remedy. Soon I increased the dose to two drops of the tincture, and so gradually to fifteen, which she took thrice daily, well diluted. At the end of a fortnight, she was decidedly easier, and lay often as much as twenty minutes without a call to micturate. This frequency was the first symptom to be relieved; the discharge of pus continued, and the pain was bad. In September, the bladder was sounded, without detecting any stone.

We persevered with the use of tincture of cantharides, in doses varying from two to twenty-five minims, with occasional intermissions. After a time, I found that it agreed best when administered with small doses of magnesia—the sulphate and carbonate. She was able to omit her stronger purgative; and, at the end of a few months, two and a half grains of soap and opium pill, once a day, replaced her chlorodyne.

In the course of two months, she was able to go down stairs; but the urgency of her symptoms returned whenever the remedy was omitted for a few days. She herself had great confidence in its power to relieve her, and saw the necessity for perseverance in its use, which she continued for upwards of two years, under my direction. Before the end of that time, however, she was able, when wearing an urinal, to do her work, and to take journeys almost as long as before her illness. The dose which she took at this time was often as much as forty drops three times in the day; and this without any ill effects whatever.

In September 1867, the urine was straw-coloured, generally clear, though showing a deposit after extra exertion. She could retain it for two hours, and could omit her remedy occasionally without any relapse. No “skins” had been passed for a long time. She seemed, in fact, fairly well, and took an engagement to sing at Leicester: this she accomplished successfully, and then started on her usual professional tour. For ten months she was actively engaged, and only required her medicine (the prescription for which she always carried with her, as a treasure) for a week or so, during a slight relapse which occurred at Sheffield. In March 1868, she carried through a harassing lawsuit in Manchester, and seemed none the worse for it. In July 1868, she was returning to Birmingham, when the train left the metals, and she was thrown violently backwards and forwards in a second-class carriage, striking especially her back. She felt the concussion much. Vomiting came on soon afterwards; and, next day, blood passed with the urine in red streaks and in small dark clots, and the urine was blood-red. She suffered also from general symptoms of illness. Her new medical