

of subsequent unhealthy action would have been of a still more formidable character.

Much depends on the fancy of the operator as to the nature and extent of the incision. Some surgeons recommend a very limited one; while others, on the contrary, speak favourably of the advantage of freely carrying the knife through the covering integument. Instead of cutting the tissues, it has been suggested that the purulent matter should be evacuated by means of a puncture with a trochar, care been taken that the wound thus made is closed as rapidly as possible. The advantages of this plan were forcibly insisted on by Henning. (*Op. cit.*)

Lebert recommends, when exit is to be afforded to the matter resulting from suppuration of a tuberculous gland, that a free opening should be made. (*Op. cit.*)

Dr. Ranking advises that the abscess should be punctured with a broad-shouldered lancet, and that, if necessary, a free incision should be subsequently practised. (*Op. cit.*, p. 259).

Dr. Tyler Smith recommends that "a puncture" should be made into a gland when it has suppurated. (*Op. cit.*, p. 103.)

My own experience is in favour of a limited linear incision when the abscess is small, and there is every prospect of the contained fluid being easily evacuated. When, however, the abscess is extensive, and there is reason to suspect that mingled with the purulent secretion will be found shreds of lymph, only partly disintegrated portions of the gland structure, and cretaceous particles, it will be expedient to resort to a freer incision; but, as it is difficult to foretell the exact condition of the contents of the abscess, I would suggest that the use of the knife be, on all occasions, as conservative as possible, as it is always easy to enlarge the outlet should circumstances point to the necessity of so doing.

But little stress has been laid, even by the best esteemed authorities on scrofula, on the importance of judicious and skilful surgical interference with suppurating glands. Mr. Lloyd, who is precise on some points connected with glandular abscess, only cursorily mentions the puncturing of such, and states that he believes "it is of very little consequence whether a puncture be made or not." (*Op. cit.*, p. 66.)

Although it may be immaterial to some surgeons whether they puncture or incise a glandular abscess, and whether the incisions they practise be limited or free; yet to the patient it is of the very highest importance that the end to be attained be accomplished with as little subsequent disfigurement as possible. I cannot too particularly insist on the importance of attending to this requirement, as it is one which oftentimes not only materially affects the personal comfort of the sufferer, but tends to enhance the reputation of the surgeon and the credit of his art.

It is often a point of extreme nicety to decide at what particular part of a glandular abscess the incision should be made. This is a question which cannot be satisfactorily answered, and will need a different interpretation on almost every occasion. As a rule, it is advisable not to wound the skin at such points where the infliction of an injury would be followed with destructive consequences, and subsequent disfigurement. I have frequently tapped glandular abscesses through healthy parts, by what is termed the subcutaneous method, and have every reason to be well satisfied with the result, as, among other advantages, it allows the distressed integument, and the tissues which surround the diseased gland, to regain their normal conditions, when not too extensively implicated.

After an incision into a glandular abscess has been practised, it becomes a question as to what shall be the future treatment. It should always be the aim of the surgeon to procure resolution and healing with as little

delay as possible; but, owing to the constitutional peculiarities which commonly modify all local tuberculous manifestations, and the varying and uncertain nature and extent of the local mischief, it is next to impossible to sketch any definite practice. Sometimes it will be expedient at once to close the lips of the incision, after having thoroughly evacuated the contents of the abscess, so that union and obliteration of the cavity may ensue. This will be much aided by recourse to pressure, etc. When the abscess is large, and the integument not seriously implicated, it has been recommended, after clearing out all foreign matter, to inject the cavity with iodine solutions. (Ranking, etc.) This plan sometimes succeeds, but it is more often followed by increased purulent secretion, and then the healing which ensues is by granulation.

Lebert recommends that stagnation of the purulent matter should be prevented by the introduction of a wick (*une mèche*) into the cavity, whereby the walls may be stimulated to increased and more healthy action. (*Op. cit.*, p. 172.)

My own practice, when I have failed to procure immediate union of the lips of the wound, and a cessation of further secretion, is to endeavour to close the sides of the abscess as speedily as possible by granulation, etc.; for, if this be not accomplished, unhealthy and obstinate ulcerations with fistulæ will, in all probability, result, and cause not only distress and disfigurement to the patient, but annoyance and trouble to the surgeon.

The further consideration of the subject may be advantageously postponed till the local measures for the healing of tuberculous ulcerations are discussed. I cannot, however, refrain from again urging the importance of constitutional treatment when the system is evidently at fault; for, when such is the case, not only will the employment of mere topical means oftentimes prove unavailing, but positively injurious.

[To be continued.]

CASE OF EXTRAVASATION OF URINE : RECOVERY WITHOUT INCISIONS.

By WILLIAM LEGGE, Esq., Surgeon, Wiveliscombe.

A. B. aged 45, a butcher, of highly nervous temperament and irregular habits, first consulted me in October, 1859, for stricture of the urethra of long standing.

The history of the case was obscure. He had evidently suffered from urinary abscess; and there was a fistulous opening in the perinæum from which urine occasionally dribbled; this had existed some three months before I was called to see him for retention of urine. With some considerable difficulty, and at the expense of some time and patience from the irritable sensitiveness of the subject, I passed a No. 1 silver catheter, and relieved the bladder. There were two evident obstructions of the canal; one about three-fourths of an inch from the meatus, the other just anterior to the membranous portion of the urethra, giving the sensation of cartilaginous induration. The instrument was so tightly grasped, that to push it forward after feeling it had passed the strictures was difficult; and even after it had been left in twenty-four hours, there was great resistance to its withdrawal.

For more than two months I persevered in daily passing instruments, and only by that time reaching No. 4, I was anxious to use Mr. Holt's dilator, which I have seen so successfully employed by him at Westminster Hospital; but my patient, (who was the most refractory I ever encountered and who dreaded everything like an operation) refused further treatment, persisting that he was sufficiently relieved, and, despite my warnings, persisting also in drinking.

Two months after this date (March 10th, 1860) I was again summoned to see him. He had been the day before attending a fair, and retained his urine for many hours; but, whilst straining and endeavouring to relieve the bladder, he felt sudden ease, though no urine escaped. He now complained of a burning sensation about the perinæum and external organs; the scrotum and penis were exceedingly œdematous; and on each side, above and below the line of Poupert's ligament, a dark erysipelatous looking blush overspread the skin. I had no doubt that extravasation had taken place; and, stating the urgency of the case, I suggested calling in another surgeon in consultation; but so alarmed was the patient, that, although I threatened to give up the case, he refused both another opinion and immediate incision, choosing to die rather than "be cut about." In this dilemma, and finding it impossible to pass a catheter, I enlarged the fistulous opening with a probe, ordered poppy fomentations, gave an opiate, and directed perfect quiet with nothing to drink.

Next day, the œdema had increased; the skin was of a deep purple; the urine had constantly dribbled from the fistulous opening. Small doses of Dover's powder were ordered every four hours, and fomentations were continued. On the 12th, appearances were the same; there was no pain nor feverishness, nor any sign of irritation. On the 14th, the purple hue of the skin had become very much paler. He was allowed linseed-tea to drink, as he had tasted no liquid since the night of the 10th. The iodide of potassium ointment, of double strength, was ordered to be rubbed into the affected parts. From this time the swelling gradually subsided, and the blush faded from the skin; the urine passed through the opening and also by the urethra. On March 19th he returned to his occupation; the only trace of the attack being a brawny thickened scrotum.

Seven months afterwards (on October 19th), he sent for me. He was in excruciating pain, tossing about, and almost delirious. The penis and scrotum were œdematous; but urine passed freely, and no other symptoms of extravasation were present. I administered an opiate, and expressed my determination to have a consultation. The friends suggested a medical man of this town, and I readily concurred; he, however, refused to meet me, and as it was very late, it was arranged to send to the next town early in the morning if the patient were no better. My surprise, therefore, may be imagined when, on going to the house next day, I found that Dr. —, though refusing to meet me, had offered to undertake the case, and that the friends, against the wish of the patient, had consented. I need not say Dr. — is not an associate. I regretted thus losing sight of so interesting a case. I can only add that the man was soon again at his daily avocations.

Several questions suggest themselves in relation to this case. Is it an anomalous one? or may we assume that, where extravasation has been gradual and arrested early, the effused urine has not so destructive an effect on the tissues as has been generally attributed to it? How is it that no sloughing or destruction of tissue resulted? In the second attack, when the penis and scrotum alone seemed involved, may it not have been the case that the urine was prevented from following the usual course between the superficial and deep fasciæ, by the deposition of plastic matter consequent on the irritation set up by the first attack?

I am not aware of any similar recorded case; and, imperfect as the above history necessarily is, I have thought it might prove interesting to my professional brethren, if not for its singularity, as illustrating that *vis medicatrix nature* which so often comes to our aid in daily practice.

THE STRUCTURE AND GROWTH OF TISSUES:

A SHORT ACCOUNT OF THE CONCLUSIONS DERIVED FROM SOME NEW OBSERVATIONS WITH THE HIGHEST MAGNIFYING POWERS.

By LIONEL S. BEALE, M.B., F.R.S.,

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[Continued from p. 194.]

III.—OF THE COMPONENT PARTICLES OF GERMINAL MATTER. COMPOSITION. MOTION. STRUCTURE AND ARRANGEMENT.

Composition. It seems difficult to form an idea of the nature of the complex chemical changes which we know must take place at the moment that an *inanimate* particle of matter becomes *living*, and the moment a *living* particle dies; but, with regard to the chemical changes occurring *during the life* of the particles of germinal matter, nothing whatever is known. During this period, the most powerful chemical affinities are overcome, and decompositions silently and perfectly effected, which cannot be artificially induced. We can, of course, only examine chemically the compounds *resulting from the death of living particles*; and not even these can be formed independently of living organisms.

In living matter, ordinary physical and chemical forces seem to be more or less in abeyance; but the moment life ceases, they again exert their sway, and elements which had existed in different states of combination, or uncombined, rush together, and compounds result, the examination of which affords us but very slight information as to how these component elements were related to each other when they formed living matter.

Motion. I have been led to conclude that constant motion is taking place in each spherule which forms part of every mass of active germinal matter. This motion always takes place in one direction, from centre to circumference. Its rapidity varies much in different cases. I think this movement depends, not upon the existence of a repulsion between the living particles, but upon an active power which each possesses, by virtue of which it tends to move outwards from the centre, where it first became living, and which causes the particle to undergo perpetual division, and the mass of which they are composed to divide. Such tendency to move from a centre, it would seem, must be due to a force very different to that which controls the movements of inanimate matter. While the latter exerts its influence as well on masses of the largest magnitude and of infinite minuteness, through *infinite distance*, the former only exerts its ascendancy when the distance is infinitely small and the particles very minute; and it would seem that its influence can only be exerted in a comparatively very circumscribed space which is freely supplied with atmospheric air.

Structure and Arrangement. I have adduced facts which seem to me to justify the following conclusions with reference to the structure of the smallest living particle; but it is very probable that, as investigation advances, these inferences may be modified in important particulars. Its form is spherical, and it consists of smaller spherules varying in size; each spherule being composed of smaller spherules, and these of still smaller ones. The surface of each is composed of a very thin layer of matter possessing different properties from the within it. Each spherical particle is free to move in