## PART III.

### TRAUMATIC OSTEITIS AND NECROSIS.



## PART IV.

### TRAUMATIC FEVER, PYÆMIA, AND SEPTICÆMIA.



## PART V.

### DISEASES OF THE ARTICULATIONS.



## PART VI.

### PHLEGMONS, ABSCESS, FISTULA.



# CLINICAL LECTURES

ON

# SURGERY.

## PART I.

### SURGICAL DISEASES OF YOUTH.

### *LECTURE I.*

#### INGROWN TOE-NAIL AND ITS TREATMENT.

Considerations upon the diseases of youth—Distinction between lateral onychia, semilunar onychia, and sub-ungual onychia—Origin of lateral onychia or ingrown toe-nail—Etiology—Influence of age, social position, sex, inappreciable general cause—Treatment—Local anæsthesia by means of ice and salt.

GENTLEMEN: I never fail, whenever the occasion presents itself, to call your attention to the influence exerted by age upon the development, course, and prognosis of surgical diseases, and the consequences of the operations necessitated by them.

The surgical pathology of childhood has already been made the subject of special studies, and if that of old age has not been treated of in separate works, yet our authors have not omitted to mention whatever there is of importance in its relations with the diseases of each organ and system.

In most of the descriptions which have been handed down to us, the classical authors have taken the adult age as the type. They have noted certain details peculiar to infancy and old age, but have forgotten the period of adolescence, the limits of which, without being rigorously determined, lie between the ages of 15 and 25 years, a period in which occur the development of puberty and the completion, sometimes rapid and irregular, of the growth of the skeleton.

I do not claim that this age is exposed to diseases which are developed during no other. I know, on the contrary, and I shall often have occasion to tell you, that most of those of which it offers examples

are quite frequent in childhood, and that some are also seen in the adult. I claim only that certain diseases are notably more frequent during youth than at other ages, and that the prognosis and treatment are thereby affected to an extent which our predecessors did not notice, and upon which my attention has been fixed for a certain number of years.

I shall presently operate before you upon a young man 16 years old, who offers you an example of one of the diseases of youth, an ingrown toe-nail.

His history, in brief, is this: His constitution is good, and he has not recently had any serious disease. For the last two years he has been employed in a pastry-cook shop, and compelled to remain on his feet a great part of the day. Four months ago he noticed an excoriation at the outer side of the nail of the great toe of the left foot. He took no care of it, and continued to walk. But the excoriation increased; and, as it was lodged in the cutaneous groove which receives the edge of the nail, it is probable that it was kept open by the irritation constantly excited in it by this edge. The oozing grew more and more abundant, and the sore at last became the seat of smarting pains, which were more severe in the evening. Suppuration also increased when the patient had walked all day. When he woke in the morning, the pain and swelling were very moderate. On different occasions the swelling increased, was accompanied by a redness which spread over the dorsal surface of the toe, and the patient was compelled to keep the bed for twenty-four hours. Another time the redness was accompanied by a little fever, and appears to have assumed the character of an angeioleucitis. No serious treatment has been given it; and the young man, after another exacerbation which compelled him to stop his work, decided to ask us for the attentions necessary to a complete cure.

I shall say no more about the functional symptoms; they are those of which I have just spoken. They are light, are accompanied by no alteration of important functions, and might have been borne much longer were it not that they interfered with his walking and thus prevented the exercise of his calling.

As to the physical symptoms, they also are very simple; you have noticed them when comparing the left toe with the right one, which is healthy. They consist in a rather hard and, as it were, hypertrophied swelling of the cutaneous rim which is found at the outer side of the nail, and in the existence of a narrow solution of continuity, elongated, granulating, reddish, and suppurating, which occupies the entire depth and the anterior two-thirds of the lateral groove corresponding to the edge of the nail. As there is some tumefaction, this groove is deeper than usual. Pushing aside the cutaneous rim, we see that the small vegetating wound extends not only to the bottom of the groove, but also around the edge of the nail, and is continued under it, if not throughout its whole extent, at least over that portion where the attachments of the nail to the skin are not very firm; and this portion is larger than usual, because the ulceration has destroyed part of the skin which established the connection.



There is no doubt as to the diagnosis: we have here to deal with the disease described under the name of *ingrown toe nail*, one which I sometimes call *lateral ulcerated onychia*, in distinction from two other rarer varieties: semilunar ulcerated onychia (extending all around the nail), and sub-ungual ulcerated onychia. The term ulcerated onychia has the advantage of denoting that it is not the nail which is diseased, that it is the neighbouring skin which has been excoriated, and that this excoriation is kept up by the edge of the nail, which acts upon it as a foreign body. I wish I could tell you exactly how the ulceration begins in such a case, and especially how it began in the case of this young man. But I have never had the opportunity to see the beginning. It may be that it is simply traumatic, the skin which corresponds to the edge of the nail having been cut at a certain moment by this edge, either naturally sharp, or rendered so by careless trimming of the nail, which in addition may have brought the edge against a part of the skin which is thinner and less protected by the epidermis than those portions which are normally in contact with it.

It may also be that the origin is pathological, that it may have begun in a moist erythema or slight herpes aggravated and ulcerated by the pressure of the edge of the nail. I have been consulted by two patients who had had for a few days the slight skin disease which I have just mentioned. I made them keep the room, take a warm foot-bath, and place, morning and evening, some subnitrate of bismuth in the groove of the nail. In a few days the disease disappeared; but I have asked myself whether, if no care had been taken, and if the patients had continued to walk, it might not have ended in an ingrown nail.

Whichever of these may be the origin, we can still draw two conclusions to direct the prophylaxis: the first is that we must advise every one, and especially adolescents, for they are chiefly exposed to this trouble, not to cut off that part of the nail which covers the sub-ungual cuticle, or, if you prefer, not to carry the section beyond the epidermic adhesions of the border of the nail, so as not to bring this border, made a little sharper by the trimming, into contact with a part of the skin which is thin and unprovided with epidermis. The second is that pressure from below upwards, while walking, forces the already more or less altered skin against this edge, and that consequently rest is necessary to increase the chances of a cure when the patient decides not to undergo an operation.

But if we are not quite sure of the anatomical pathogeny of the ingrown toe-nail, we know very well the conditions which favour its development and act as predisposing causes. These conditions, which have certainly affected our patient, are three in number: age, social position, and sex.

1. *Age.*—The patient is 16 years old. You may think it is only chance which has given us this occasion to see an ingrown toe-nail upon a person of this age. No; on the contrary, it is very common in adolescents. For the last ten years I have kept a record of all the

cases of incurvation of the nail of the great toe[1] which I have treated. Fifty-four of these were upon boys (I will speak of the girls in a moment), and are thus grouped according to the ages.

I saw none before the age of 14 years. I do not claim that it does not exist, but I believe it to be very rare. My table begins at 14½ years:—

| | | | |
|---|---|---|---|
| Patients | 14½ and 15 years of age . | 2 | |
| " | 16 . . . . | 12 | |
| " | 17 . . . . | 8 | |
| " | 18 . . . . | 6 | |
| " | 19 . . . . | 6 | |
| " | 20 . . . . | 7 | |
| " | 21 . . . . | 2 | |
| " | 22 . . . . | 2 | |
| Patients | 23 . . . . | 2 | |
| " | 24 . . . . | 1 | |
| " | 25 . . . . | 2 | |
| " | 26 . . . . | 1 | |
| " | 29 . . . . | 1 | |
| " | 30 . . . . | 2 | |
| | | 54 | |

You see then that from 14½ to 20 years we have 41 cases; from 21 to 25 years 9 cases; from 26 to 30 years 4 cases. It must also be noted that in one of my two patients aged 30 years, the disease began when he was only 18 years old. I was right then in telling you that adolescence predisposes to this disease.

But how explain this influence of age? I do not hide from you that this is a difficulty which we shall encounter in some of the other diseases of youth. I suppose we must consider it due to rapid growth, in consequence of which the nail becomes a little too large for the surrounding skin, or, the toe being compressed in shoes which have become too small, the edge of the nail is pressed too firmly against the cutaneous fold. You see, gentlemen, I do not exclude the other local causes, just as I admitted a moment ago the possible intervention of general ones. But the existing local causes, the rapid growth of the nail, the lengthening of the foot, pressure upon it by shoes that have become too small, enable us to understand why incurvation of the nail is more likely to occur during the period of growth than at any other time.

2. *Social Position.*—My 54 patients belonged to my hospital practice. In private practice I have treated only two young men for ingrown toe-nail. This is doubtless due to the fact that youths of the labouring classes take less care of themselves at the beginning, walk and fatigue themselves more, and, above all, do not supply themselves soon enough, when growing rapidly, with new shoes in which the toe would have more room.

3. *Sex.*—Its influence is proved again by figures. During the ten years I have treated in all ten women, seven of them in the hospital, three in private practice. As in the case of the males, here too we see the influence of adolescence, for eight of my patients were between the ages of 15 and 22.

| | | | |
|---|---|---|---|
| 1 was | . | 15 years old. | |
| 2 | . . | 16 " | " |
| 2 | . . | 17 " | " |
| 1 was | . | 19 years old. | |
| 2 | . . | 22 " | " |

Of the last two, one was 30 years old, but the disease began at the age of 13 years; the other was 43 years old.

[1] Ingrown toe-nail occurs much more rarely on the other toes, and is then due to a general rather than to local causes. I speak now only of that of the great toe.



If you ask me why growing girls are less exposed to ingrown toe-nail than boys are, I answer, without, however, being too affirmative on this point, that I attribute it to this, that in general girls walk and fatigue themselves less, take rather better care of themselves, and do not so often grow rapidly.

But must we not also admit some general cause in this etiology? Let me explain. There are appreciable general causes, and others which are inappreciable. I have found more of the former in the 64 cases which I have treated. You have heard me speak sometimes of syphilitic onychia. But you notice, or you will notice hereafter, that in such cases the ulceration, instead of being limited to the edge of the nail, extends all around the matrix and sometimes to the sub-ungual dermis; also that the great toe is not alone affected, the others are attacked at the same time. In the real ingrown toe-nail, that of youth, the disease occupies exclusively the lateral border of the nail and the great toe. I should also tell you that it is much more frequent on the outer[1] than on the inner side, and that when it occupies the latter the former is almost always affected at the same time. In the statistics which I have carefully kept on this point, I find the inner side alone affected only three times, both sides of the same nail four times, and in the forty-seven other cases the outer side alone.

As to the other general cause which we meet with so often in the diseases of youth as well as in those of infancy, scrofula, I have had no reason to think it has affected my patients.

There remain then the inappreciable general causes. Without defining them, we are obliged to admit their influence in many diseases; it is likewise probable that they exist in this one. This will explain the occasional development of an ingrown toe-nail during adult life, that is to say during a period when the predisposing causes of which I have spoken exist to a much less degree or not at all, also why in certain youths both sides of the nail are affected, and in others both feet either at the same time or successively. I have occasionally seen ingrown toe-nail, appear, sometimes on the great toe, sometimes on one of the others, during convalescence after an acute disease or in the course of a chronic one, under conditions, in short, where it was impossible to lay it to the charge either of growth, or walking, or even the fatigue of standing. These cases are not included in my statistics. I attribute them to one of these inappreciable and unnamed general causes, and in any case they deserve separate study, since their treatment should not be the same, and an operation should be considered useless and even dangerous.

This slight affection is certainly not serious, since it compromises neither health nor life. It has only the inconvenience of making it painful to walk and thereby interfering with the business of those who gain their livelihood by walking or standing most of the day. Another peculiarity, and one which has especially interested the surgeons, is its tendency to return, even after serious operations, but the notions

[1] Referring to the median line of the body, not of the foot.

which I have given you upon the influence of age diminish greatly the importance of this fact. The ingrown nail of youths may return, but only during the period of life which predisposes to it. Youth once passed, the trouble does not return after treatment. Suppose then, that, in spite of your care, one or two relapses take place while your patient is between 16 and 22 years of age. After that time you may be sure the trouble will not re-appear. Moreover, we possess means which protect even the adolescent from a return of the affection.

*Treatment.*—There are few surgical diseases for which so many local treatments have been proposed. I have counted as many as seventy-five of them, all suggested by honourable surgeons moved by the desire to protect the patients from relapses; they had not learned that relapses cease with the period of youth. Of these means, some are simple, and consist of dressings repeated once or twice each day; others, of partial or complete extraction of the nail; others, of varied and complicated operations with the knife or caustics, generally supplemented by the extraction of more or less of the nail. I shall describe only the three principal methods and the two or three processes to which I advise you to give the preference in your practice.

1ST METHOD. *Dressings.*—This method, to which I attach the name of Fabrizio d'Aquapendente, an Italian surgeon of the 16th century who wrote a large work on surgery, consists in interposing between the nail and the ulceration a foreign body, which separates them from one another and prevents the second from being continually irritated by the first. For this purpose Fabrizio used lint, as we do also to-day.

A few months ago you saw me treat in this way a woman who came every other day to the consultation, and who for various reasons was not willing to allow the nail to be torn out. I passed every time with a spatula a few threads of lint under the outer edge of the nail. I took pains to press it past the edge and well under the nail, and then completed the dressing with another pad of lint, which I placed on the upper surface of the corresponding cutaneous ridge, and kept in place by means of a strip of diachylon plaster wrapped two or three times around the toe so as to press the pad well under the ridge. After six weeks, during which this dressing was renewed every other day, the ulceration was cicatrized, the tumefaction about it diminished, and the edge of the nail sufficiently separated from its cutaneous groove. I told the patient to wear broad shoes and not to cut the nail short, especially on the outer side. Since then I have not seen her, but have heard that there has been no return of the trouble.

Instead of lint you may use a strip of tin (Desault); or of lead (Boyer); or even of cork.

I advise you, gentlemen, to familiarize yourselves with one of these dressings, and, in my opinion, the simplest is the one with lint. You may have occasion to use it in the earlier stages, or in the later ones when the patients have the time to take care of themselves, andare able to remain six or eight weeks without walking, or walking but little. For this interposition of a foreign body is not easily borne when the pressure upwards, which is produced by walking or standing,



constantly forces the inflamed skin against it; and, although not so sharp and irritating as the edge of the nail, it is still in a certain measure a cause of irritation.

I have not thought of employing this treatment for this patient, because it requires too much time, and because confinement to the bed or to the room is undesirable at his age. I may also add that these dressings have the inconvenience of being quite painful at the moment of application and for an hour or two thereafter. And, finally, this mode of treatment is one of those which expose the most to a return of the trouble. You will see it succeed on persons in easy circumstances, especially women, who not only can give themselves the needed time and rest, but, once cured, can favour themselves and walk but little. Our young man, on the contrary, is obliged to gain his living by his legs, and as soon as he is cured he will have to begin at once to walk, so that the chances of an early return of the affection would be great.

2D METHOD. *Simple Extraction.*—This operation, which is applied sometimes to the whole of the nail, sometimes only to the half which is ingrown, is intended to remove the body which acts as an irritant, and give the little fungoid ulceration time to heal. Of course, the nail grows again, for in removing it we do not destroy that portion of the skin which produces it, and notably the deep posterior fold called the *matrix*. I will describe in a moment the method of extraction which I prefer, before performing the combined operation of which it forms part.

This method has the real advantage that it can be performed without pain, and is followed by a prompt cure, for at the end of five or six days, during which rest and a protecting dressing alone are needed, the raw surface has become dry and the ulceration healed. But, unfortunately, it is often followed by a return of the trouble. I cannot give the exact figures, but I remember to have seen in the service of Velpeau a certain number of patients who returned at short intervals to undergo the operation a second, third, or fourth time. As I have already told you, I know that after a while adolescence ends, and with it the tendency to the reproduction of the disease; but still it is an inconvenience which we should seek to avoid as much as possible, and in this respect the combined operations are a little more successful.

3D METHOD. *Combined Operations.*—These are the ones by which it is proposed to remove both the edge of the nail and the cutaneous ridge upon which the fungoid granulations are found. For this purpose some authors have recommeded caustics; others have combined extraction of the nail with excision of the fleshy parts. To this last operation I give the preference, but, after tearing out the nail, I cut off only a portion of the ridge, so as to have a wound which is smaller, will cicatrize more promptly, and is less likely to give rise to erysipelas or angeioleucitis, and, moreover, is sufficiently removed from the articulation of the two phalanges to avoid the chances of provoking suppurative arthritis. I propose, also, to remove on the affected side a considerable portion of the matrix, so that the new nail may be much

narrower than the old one. You understand that this reduction of the breadth of the nail diminishes the chances of a relapse, which are greater the nearer the edge of the nail is to the bottom of the groove in which it lies. I have several times measured the new nail a few months after this operation, and have always found it narrower than that of the other foot. I have already published my method of performing this operation,[1] and I shall now execute it before you in the following manner:—

1*st Time.*—To prevent pain I shall make use of a freezing mixture composed of equal parts of pounded ice and salt. The mixture will be made just before it is to be applied, and will be placed in a small bag made of thin muslin. I shall place this bag upon the dorsal surface and the sides of the great toe, cover it with a compress, and leave it in place for two minutes, when I shall remove it to see if anæsthesia has been obtained. If I find the skin still red and sensitive I shall re-apply the mixture and leave it until sensibility is entirely deadened.

I recommend this mode of anæsthesia in this operation, because, since the parts upon which we are to operate are superficial, it is useless to seek to dull the sensibility of the deeper ones, as we have to do when our incisions are carried beyond the limits of the skin, and consequently we are not embarrassed by the pre-occupations of general anæsthesia produced by inhalation. Local anæsthesia may be obtained by refrigeration with ether, but this process requires more time and does not produce so complete a result; and as the operation we are to perform is very painful, we must deaden sensibility as completely as possible.

2*d Time.*—Standing at the foot of the bed, and at the affected side, and having seized the toe firmly with my left hand, I shall pass one of the blades of a strong pair of scissors on its side under the nail as far back as the matrix, then turning the edge upwards, and closing the scissors quickly, I shall divide the nail lengthwise into two equal parts. Then with a stout pair of forceps I shall seize each piece in turn and tear it out. Sometimes the nail is friable and breaks; then of course the fragments must be successively removed. Do not forget that for this purpose you need a very strong pair of forceps, one whose blades will not twist under the violent effort you will have to make.

3*d Time.*—This consists in the excision of a strip of skin, leaving a wound which, though small, comprises in front a portion of the cutaneous ridge and abnormal vegetations, and behind the external lateral portion of the matrix. For this I shall take a bistoury, and make, behind, at the junction of the transverse and lateral portions of the matrix, a transverse incision one-quarter of an inch long through the entire thickness of the skin, and then carry it along the summit of the lateral cutaneous ridge to its anterior extremity. I shall then

[1] Gosselin, Sur le Traitement de l'Ongle incarné, Gazette Hebdomadaire, 1853, tome i. p. 7.



dissect inwards the flap thus formed, so as to include in it the entire length and thickness of the sub-ungual dermis for a breadth of nearly one-quarter of an inch, that is, its antero-lateral portion and the corresponding piece of the posterior portion or matrix.

I shall finish with a protective dressing made of a cloth covered with cerate, lint, compresses, and a narrow band. This dressing will be renewed every day for eight or ten days, at the end of which time the patient will be able to leave his bed, and perhaps the hospital.

During the last year you have seen me treat several patients in this way. In no case did any complication occur. In all the little wound healed, and the dermis dried in a length of time which varied from eight to fifteen days. When the patients left us they had no nail, but they could wear a shoe and walk by placing a rag or a little carded cotton over the toe. In only one of my sixty-four cases was the cure delayed by an angeioleucitis of the foot and leg, followed by small multiple abscesses along the course of the lymphatic vessels, and although delayed the cure was still obtained.

Upon none of the patients whom we have had this year have we as yet seen any return of the affection. But I have already told you that my method, although it removes the ulcerated skin and diminishes the breadth of the nail, still does not always prevent a relapse. In only five of my sixty-four cases has the disease returned, three boys and two girls, but I have had no example of a second return. Consequently the most unlucky have had to undergo the operation only twice. I have seen again several of them who had then passed the age of 25 years, and in whom the affection had not returned, and I have yet to see a relapse in any of my patients who have passed the period of youth.

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## *LECTURE II.*

### SUB-UNGUAL EXOSTOSIS OF THE GREAT TOE.

Description of antecedents and symptoms—Diagnosis—Importance of age and sex; it is a disease of youth, more common in girls than in boys—Anatomical characteristics—Analogy to epiphysary exostosis, and to naso-pharyngeal polyps—Treatment—Possible relapse—Cessation of this tendency after adolescence.

GENTLEMEN: I have here a small piece which I removed the day before yesterday in your presence from the great toe of a girl 20 years old. She was a dressmaker who had been admitted into the hospital a few days before to be treated for a tumour as large as a small nut occupying the interior and superior surface of the left great toe at its