more, reproduction will cease, and you will have rendered him the great service of saving his life without mutilation.

2. But we must now suppose another case, which unfortunately will still present itself too often. The subject, as before, is between thirteen and eighteen years of age; the fibroma has become very large, it sends out many branches, or is suffocating, or is hemorrhagic. Tearing it away can give only imperfect results, and those of short duration; ligation is rendered impossible both by the complete obstruction of the nostrils and the extent of the implantation. I should certainly make one or two atttemps to tear it away, but if they did not succeed we should have no right to hope that, under the supposed unfortunate conditions, life could be preserved until the end of adolescence.

It would then be proper to perform one of the combined operations which we long supposed to be radical, and to give the preference to resection of the superior maxilla as the preliminary operation.

If, as is always to be feared, reproduction should take place, it might be combated successfully until the end of adolescence by partial extractions and cauterizations, as in the case of my patient, practising if necessary a new preliminary operation, division of the soft palate.

You see that here the ideas which we have as to the influence of youth lead us to not despair, and to continue to struggle against the chances of death. But the contest is no longer possible without mutilation; we must accept it, since we can do no better. The important thing is not to inflict these mutilations upon the patients when they can be avoided, and they can be avoided if we remember that simple operations, at first palliative, may by the influence of age become curative.

3. I have now a last supposition to make. The subject is more than eighteen years old, and is nearer the end of adolescence. His constitution is more vigorous, and he is better able to resist the injuries which the polyp may occasion. Moreover he has not to remain exposed so many years to this injurious influence. In this case we should again content ouselves with simple operations, or with palliative cauterization after incision of the soft palate, to which we might add resection of the hard palate as advised by Nélaton. Resection of the maxilla appears to me to be still more exceptionally indicated at this age, and should only be performed if the surgeon, after having long studied his patient, has become convinced that palliative operations will not suffice to keep him alive until the end of adolescence, and if, after the patient has passed this age, when for example he is more than twenty-six years old, the tumour does not diminish by absorption or by spontaneous gangrene.

I do not possess enough facts to be able to tell you what proportion of fibromas disappear spontaneously after the subject has become adult. I certainly believe there will always be found patients in whom this disappearance will not take place without surgical aid. If this intervention is inevitable it is important that it should be deferred until that period of life in which we are almost sure its reproduction will not take place.

LECTURE V.

TWO CASES OF SUBACUTE NON-SUPPURATING EPIPHYSARY OSTEITIS.

I. Fall upon the knee—Formation of a painful swelling over the anterior tuberosity of the tibia—Absence of fever—Reasons for thinking that the osteitis will not suppurate, and will terminate in a slight hypertrophy after a simple treatment—II. Fall upon the great trochanter—Analogous symptoms—Non-suppurating and hypertrophic osteitis of youth.

GENTLEMEN: We have at present, in the wards, two young men affected by the same disease in different regions. One of them is cured and will soon leave us, the other entered two days ago, and will doubtless remain for some time with us.

I. The first is seventeen years old and well formed. He told us when he entered the hospital a fortnight ago, that he had fallen upon the right knee while running, and that since that time he had not ceased to feel a pain which was at first slight enough to allow him to walk and work as usual, but which increased little by little, and was accompanied by a swelling sufficient to oblige him to stop.

You remember that when we saw him for the first time he was without fever, and had at the anterior superior portion of the right tibia, immediately over the anterior tuberosity of this bone, and evidently continuous with it, a hard rounded prominence, slightly painful when he walked, and very painful when even moderate pressure was made upon it with one or two fingers. There was no redness of the skin, no subcutaneous thickening. The temperature of the region seemed a little higher than that of the opposite side. It was evident from its situation that the trouble occupied the anterior tuberosity of the tibia, and that this tuberosity was one-quarter, perhaps one-third, larger than that of the opposite side. Being carefully questioned upon this point, the patient assured us explicitly that his two knees were exactly alike before this last accident, and that the difference in size between the two anterior tuberosities had existed for only a week.

I examined the articulation and found in it neither effusion nor thickening of the synovial, and, as none of the symptoms indicated a phlegmon, and as the age of the patient, the recent appearance of the tumour, and its limited extent dismissed the idea of its being an osteosarcoma, I admitted the existence of an osteitis developed almost exclusively upon the anterior tuberosity of the tibia.

As the pain was moderate, and as the inflammation was not propagated to the connective tissue around the bone, and as there was no fever, I did not mean by this one of those acute suppurating osteites which sometimes appear upon the extremities of the long bones while they are still epiphysary, that is, not united.

Neither did I say that this was an epiphysary exostosis of youth. Its rounded form and hardness certainly recalled exostosis, but its situation dismissed that idea, for exostosis is a bony growth entirely new and generally indolent. This was indeed a bony prominence, but it was not of new formation; it was simply a normal apophysis slightly increased in size.

Dismissing then acute osteitis, osteo-sarcoma, and exostosis, I had to admit a slow plastic osteitis, one that was subacute rather than chronic.

Seeking next the etiological diagnosis, I found none of the general causes which contribute to the development of diseases of the bones. No anterior or hereditary syphilis, no scrofula, no sign of rheumatism. I could find then no other cause than the contusion mentioned by the patient, and as this contusion had been slight, and as, furthermore, I had several times seen a similar swelling develop at the same point upon young people without the intervention of any traumatic cause, I concluded that behind this occasional cause there existed a predisposing one, the age of the patient, and his aptitude to take on, in the neighbourhood of the epiphyses at the time when the nutrition of the bones was working actively to complete ossification, an exaggeration of this movement which thus became an osteitis.

In speaking to you about the prognosis, when the patient was admitted, I said that what preoccupied me most in osteitis was the possibility of its going on to suppuration, and then to purulent infection or caries and necrosis. But I added that in the present case we had but little reason to fear these terminations. I did not expect putrid osteo-myelitis, because the inflammation was not an acute febrile one, and because subacute osteites are rarely followed by these putrid changes which are the sources of poisoning, and of which I shall often have occasion to speak to you.

Nor did I much fear a chronic suppuration which might leave behind it caries or necrosis, or both; for the patient was not lymphatic, and his constitution was not of the kind which predisposes to suppuration of the bones. Furthermore, I had seen several osteites of this kind occupying the anterior tuberosity of the tibia in adolescents, and none of them ended by suppurating.

I therefore told you that, very probably, after a week of rest and care all danger would have disappeared.

All things have gone on as we expected. The treatment consisted simply of poultices and rest in bed. For several days the young man has had no spontaneous pain and suffers very little pressure; I may consider him cured. Still the anterior tuberosity is enlarged, and I think it will remain so. For, indeed, as I shall often have occasion to show you, it is very common to see the hypertrophy which we call hyperostosis follow osteitis, whatever may have been its course, that is to say, whether the termination has or has not been by suppuration, and whether the inflammation of the bone was spontaneous or traumatic. You will scarcely see any disappear without leaving hyperostosis, except the superficial swellings which have chiefly occupied the periosteum, as is the case in syphilitic or rheumatic osteo-peri-

ostitis. But in the cases in which the osteitis, whatever may have been its origin, has been interstitial, that is, has occupied the compact and cancellous tissues to a certain depth, and in which the phlegmasia has been accompanied by an increase in size, you may expect to see the hyperostosis persist, and to preserve a tendency towards suppuration when the original osteitis has been suppurative, but, on the other hand, not to have this tendency when the primitive osteitis has not terminated in suppuration. Consequently in the case of this patient, although I see the hyperostosis of the anterior tuberosity of the tibia persist, and though I know that for a certain time and until the completion of ossification he will be exposed to renewals of this pain, especially if there should be another contusion, I do not think he is threatened with suppuration of the bone. If he was going to have it, he would have had it this time.

II. The other patient, who has been here two days, is a young man seventeen years old, who tells us that three months ago he fell upon his left hip, and that since that time, without having been entirely laid up, he has had constant dull pains in the region of the trochanter. These pains have only recently increased, walking finally became so difficult that the patient was obliged to use a cane and enter the hospital.

When I examined him I asked him to indicate the precise seat of his trouble; he placed his hand upon the upper and outer portion of his thigh over the great trochanter, and told us that the pain often extended to the knee. There is almost no pain while he is at rest, it appears especially while he is walking or standing. I pressed with my hand upon all the outer portion of the thigh, and you saw that this pressure caused pain only over the surface of the great trochanter. There we find an ill-defined swelling which at first did not appear very marked, but which is easily recognized when you compare the two trochanteric regions, making the patient lie first upon one side, then upon the other. Trying to discover with the hand the exact position of the swelling, you saw that it was not in the subcutaneous cellular tissue, and was not due to an effusion into one of the two synovial bursæ of the region, for there was no fluctuation. In short, it seemed certain that the part which was swollen and painful on pressure was the great trochanter itself. There is no fever, and the general condition is good.

With what affection have we to deal? The pain, which has already lasted a long time, the lameness which followed it, the diffuse swelling of the upper portion of the thigh, all give at first the idea of a coxalgia. But, the patient lying squarely upon his back, I told him to lift his heel from the bed, to raise his foot well without bending the knee. He made the movement easily, and while he made it I felt with one of my hands placed upon the crest of the ilium that this bone did not budge. If it had been coxalgia the elevation of the heel would have been slower and more difficult, and would have been accompanied by a movement forward of the ilium, a movement due to the fact that, since in this disease the articular surfaces are rendered immovable by muscular contraction, the movements no longer take

place in the articulation of the hip, but in those of the pelvis with the spinal column, and in those of the lumbar vertebræ. Then taking hold of the ankle and flexing the leg upon the thigh, and the thigh upon the trunk, I felt that I communicated these movements easily and without experiencing the resistance which is met with in coxalgia, because then the head of the femur and the cotyloid cavity are no longer movable upon one another. Then comparing the height of the spines of the ilium I found that the one on the affected side was not lowered as it would have been in case of coxalgia, and finally, carrying my hand to the lumbar region, I did not find there the bend which is usually found in this latter disease. The result of my examination then authorized me to declare that the affection was not a coxo-femoral arthritis, and before reaching this decision I had made the examination with all the more care because the patient had been sent to me by a physician with a note indicating that he feared the beginning of a coxalgia.

On the other hand, the existence of pains radiating along the thigh might have given rise to the idea of a sciatica. But you saw that these pains were on the outer side, while in sciatica they are especially in the posterior portion of the thigh; that pressure caused them in a region (that of the great trochanter) where they are not found in sciatica, and that finally they were developed while walking, and were not felt when the patient was at rest. Now the principal characteristic of the pains of sciatica is that, although they are sometimes exaggerated during a walk, they appear spontaneously during rest, and even during rest in bed. Consequently there was no reason here to believe in the existence of a sciatica.

You will sometimes hear me speak of a disease, difficult of diagnosis, which occupies the sacro-iliac symphysis, and bears the name of *sacro-coxalgia*. I had also to throw out this disease, because of the localization of the pain in the trochanteric region, and its being awakened by pressure upon this region.

Further, there was no symptom of hygroma, and in addition I knew there was a swelling over the great trochanter.

I recalled the fact that Velpeau had indicated in his lectures osteitis limited to this prominence, and I remembered having met adolescents who had presented symptoms analogous to these.

I thought, then, that we had to deal here with a subacute osteitis of traumatic origin, an osteitis developed, like that of the anterior tuberosity of the tibia of which I have just spoken, upon or in the neighbourhood of an epiphysis. For you know that the great trochanter develops from a special complementary point of ossification, and that it remains until the age of from 20 to 25 years separated from the rest of the bone by a cartilaginous line. There has occurred, then, in my opinion, in this great trochanter, that which occurred in the anterior tuberosity of the other patient. It has been bruised at a period when its nutrition was excited by the needs of ossification, and this contusion has been followed by a phlegmasia which began, perhaps, in the epiphysary cartilage, perhaps in the bone itself. For we cannot determine the starting-point by clinical evidence, the only evidence which we have at our disposal.

I do not claim that a similar contusion would never be followed by trochanteritis in an adult; I only say that that is much more rare, and that the affection is seen chiefly in adolescents and in those regions where are found the epiphyses; that is, bony extremities still separated from the rest of the bone by a cartilaginous line.

I now ask myself, gentlemen, what is to be the result of this trochanteric osteitis or subacute trochanteritis. Certainly we may hope that it will behave like the tibial osteitis of which I have spoken; that is to say, that after a rest of a few weeks it will terminate without suppurating, and will leave behind it a slight hyperostosis. But I must say that I fear suppuration more in this than in the preceding case. For the osteitis has already lasted three months, and has steadily grown worse since the beginning. The patient is thinner and paler. Without being distinctly scrofulous, he nevertheless shows us the attributes of the lymphatic temperament, among them a certain aptitude for suppuration. I do not expect the ultimate development of one of those acute and putrid suppurating osteites which may be followed by purulent infection. It is rare for osteitis to take on this acute form in this age, when in the beginning and for a certain length of time it has been subacute.

I shall not fail to show you examples of acute epiphysary osteitis in adolescents, and to point out that they were such in the beginning, and were not preceded by a slow, dull inflammation.

Our present patient is threatened rather by that variety of slow suppuration which leads to caries and necrosis.

He would then find himself in the position of a young man whom I showed you last year, who bore two fistulæ in the trochanteric region. The probe passed through each of them to the bare and roughened surface of the great trochanter, and announced the existence of that variety of suppurating osteitis which ought to end in the elimination of one or more sequestra, and which we call necrosis. I did not feel the probe penetrate deeply enough, breaking its way through the bony lamellæ, to admit the existence of interstitial suppurating osteitis of the cancellous tissue, known generally as caries. But it is probable that this form may also occur in certain subjects after subacute trochanteritis. I cannot give any example; for, since diseases of this kind are not very common, I have not treated a sufficient number of cases to have seen all the forms.

The important thing for our patient is that this osteitis is not so necessarily destined to suppuration as it would be perhaps in childhood, and even during adult life (in case, of course, tertiary syphilis is not involved), and that by reason of his age we may avoid this mode of termination.

What have we to do to obtain that end?

Of course we shall keep him in bed and not allow him to get up under any pretext.

Furthermore, I shall apply compression by means of a layer of cotton batting, kept in place by a figure-of-eight bandage, the loops of which will pass alternately about the upper half of the thigh and the pelvis. This is the bandage which you know by the name of

Spica, but its femoral portion will extend a little lower upon the thigh than in the ordinary spica. I shall renew this dressing every third or fourth day.

At the same time I shall give the patient three or four tablespoonfuls of cod-liver oil daily, and prescribe five ounces of vin de quinquina to be taken before breakfast, and the same quantity before the evening meal, and I shall nourish him as well as possible.

I should like also to protect him from the exhaustion of masturbation; for patients of delicate constitution, in whom we have reason to fear suppuration of the bones, find in excesses of this kind an increase of their debility and its consequences. In private practice I advise the parents not to leave the young man alone, to distract his attention and occupy him as much as possible; in the hospital this care is impossible, but I shall give all the advice necessary.

We shall continue this treatment for a month, and then stop the use of the bandage and allow the patient to get up for a short time each day. If I find that he does not suffer I shall make him walk a little more every day, and if he still does not suffer I shall consider him cured.

If, on the other hand, the attempt shows that a cure has not been obtained, I shall advise him again to remain in bed and shall make use of some revulsive on the skin. For this I shall have to choose between blisters, caustics, and punctate cauterization. I have no absolute preference for any one of these, for thus far my experience has not demonstrated the superiority of one over the other—nevertheless, punctate cauterization is the one which I shall use if after a month's rest in bed this young man still suffers a little on pressure and when walking.

(Punctate cauterization was applied, forty points, with a small iron rod, at white heat, while the patient was anæsthetized with chloroform. Six weeks afterwards all pain had disappeared and the patient was considered cured. He left the hospital, and has not since been seen.)

LECTURE VI.

I. HYPEROSTOSIS OF RIGHT FEMUR. II. NECROSIS OF LEFT TIBIA.

Some considerations upon diseases of the skeleton in the infant and in the adolescent—I. Hyperostosis of the femur and anchylosis of the knee following a non-suppurating epiphysary osteitis—Fresh inflammatory attack, also not terminating in suppuration—II. Necrosis of the tibia following a suppurating epiphysary osteitis—Fresh inflammation—Movable superficial sequestrum, immovable invaginated sequestrum—Long duration of this necrosis probably until adult life.

GENTLEMEN: Chance has recently brought together in our wards two patients suffering from the late consequences of the disease which you often hear me speak of as *acute epiphysary osteitis of youth*.

But first of all, I must make an explanation.

In pointing out to you the diseases of youth I do not mean, and I have never meant to say, that these diseases belong exclusively to youth, and are not seen at other ages; I wished to say that they were more frequent during youth, and that, as a rule, they took on at this age characters different from those which are seen in the same lesion at other periods of life.

I have been criticized upon this subject. Especially with reference to acute epiphysary osteitis, it has been objected that this disease is seen in childhood.

I knew that perfectly well, but I also knew two other things: first, that it is less frequent than in adolescents; second, that it is also less dangerous.

I knew also, in the third place, that osteitis of adults does not take on spontaneously, and without the intervention of solutions of continuity affecting at the same time the bones and the soft parts, those dangerous forms which occur almost spontaneously in the child and in the youth. However, to enable you to decide the question for yourselves I give you the statistics published upon the subject.

Dr. Cullot, author of a very good thesis,[1] gives the following table of the ages at which epiphysary osteitis appears:—

From	1 to 18 months	2 cases.	
"	2 to 6 years.	7 "	
"	6 to 10 "	10 "	
"	10 to 14 "	21 "	
"	14 to 18 "	33 "	
"	18 to 22 "	8 "	6 of which were between 18 and 19.
"	22 to 29 "	1 case.	
"	29 to 30 "	1 "	

M. Sézary,[2] who collected, also, for his graduating thesis, 92 cases, of which 57 were between the ages of 12 and 19, finds an average of 13 years. But the average of 33 cases observed by himself at the Hôtel-Dieu of Lyons was 16 years.

Klose's 13 cases average 13 years.

M. Chassaignac[3] mentions 23 cases, of which 4 were between 9 days and 10 years; 15 from 10 to 18 years; and 4 from 18 to 36 years old.

From all these figures, which have been reproduced in an excellent thesis by Dr. Salès,[4] it results, gentlemen, that the end of childhood and the first years of adolescence, until about the age of 19, are the periods of life during which appear, chiefly, but not exclusively, the diseases which we are about to consider. They are most often met with between the ages of 12 and 18.

And here let me say that in speaking of adolescence, we do not give it perfectly defined limits, sometimes it is considered as beginning at 12, sometimes at 13, sometimes at 14 years, and when we clinicists speak of the diseases of adolescence or youth, and especially of those

[1] Cullot, De l'Inflammation Aiguë primitive de la Moëlle des Os. Paris, 1871.
[2] Sézary, De l'Adolescence. Thèse de Paris, 1871, and Gazette des Hôpitaux, 1871, page 9, et seq.
[3] Chassaignac, Traité de la Suppuration et du Drainage, vol. i. page 413.
[4] Salès, De la Marche et du Traitement de l'Ostéo-périostite dia-épiphysaire suppurée. Thèse de Paris, 1871.