and thirtieth days that the tumour increased a little above the soft palate; without waiting for it to become sufficiently large to again interfere with respiration, I subjected the patient during the next two months to ten operations with the electrolytic apparatus. You remember that the arrangement of the currents in this apparatus is such that they produce a sort of chemical destruction and elimination of the tissues traversed by them, which, however, is not a real gangrene.

Those of you who assisted at those operations remember that they lasted ten or fifteen minutes and were quite painful, also that the eschars produced were small, and that the tumour increased again as soon as the elimination was finished. In short, after two months nothing had been gained or lost; the fibroma was no longer suffocating, and in no way did it compromise life, but it was still there, and I easily recognized every day, by passing my finger through the division of the soft palate, that the tumour was sessile and occupied a large surface, that it did not belong to the category of polyps, properly so called.

After two or three more weeks passed in observation I recognized that the tumour continued to increase, without, however, becoming large enough to again cause the suffocation which had so incommoded and threatened the patient at the time of his admission into the hospital. Furthermore, there was no flow of blood except on the days when the tumour was touched either for exploration or for electrization, and the general health remained good.

Anxious to keep the disease in this condition, that is, within the limits compatible with health, continuing to fear the consequences of a great curative operation, and hoping that one day or another the influence of age would make itself felt, I gave up electrolysis, which caused a good deal of pain and yielded only insufficient results, and I decided that thereafter the tumour should be attacked and destroyed as far as possible by means of caustics applied through the opening in the palate or through the nostrils. At first I used monohydrated nitric acid, carried through the division of the palate with all the precautions necessary to prevent its falling into the pharynx and œsophagus. This mode of cauterization had the advantage of causing but little pain and no loss of blood; but it had the disadvantage of destroying only the surface and not at all the parenchyma. For this reason I ultimately had recourse to the application of points and grains of chloride of zinc, giving to the caustic, which was well dried and composed of one-third chloride of zinc and two-thirds flour, the form and dimensions suitable to the passage through which I had to apply it. Three different times I attacked the nasal prolongations which had grown nearly down to the nostrils, and for that I used grains having the form and size of oats. For the pharyngeal portion, on the other hand, I used triangular points having a length of from one-half to three-quarters of an inch, and a breadth at the base of one-third of an inch. These points were applied by means of long polypus forceps, and I was careful to choose those whose points were the hardest. Notwithstanding the hardness of the tumour, I never had to make a preliminary incision with the point of the bistoury. I applied every time two or three of these points. The operation had the disadvantage of causing the blood to flow for from fifteen to thirty minutes. But as the patient ate well, and repaired rapidly, and as in fact the amount of blood lost each time was hardly more than three ounces, the disadvantage was not too great. I noticed only that the tumour became more and more vascular as it grew older.

Such was the condition of affairs during August and September; caustics had been applied ten different times, and had produced eschars of greater or less size. In short, the tumour was smaller than at first, but there was still the same extent of implantation and the same tendency to increase as soon as we ceased to employ the means of partial destruction. Wearied with his long stay in the hospital, and not considering himself ill enough to remain, the young man begged to be allowed to depart, promising to return if he did not get better.

He left us on the 18th of October, 1869, having obtained from his five months of treatment this important result, that our first palliative operations had saved his life, but with the chagrin of knowing that he was not cured, a chagrin that he felt very keenly, notwithstanding the hope we gave him of a cure at the end of adolescence.

When he returned two months later, the 30th of December, 1869, Pellard informed us that he had had no fresh hemorrhages, and that his health continued good, but that for some time he had felt that his respiration was again becoming affected. Furthermore, although he felt well, he had grown thin, and I pointed out to you a beginning of exophthalmia on the left side; I attributed it to this, that the left nasal prolongation had destroyed the outer wall of the nasal fossa and extended into the orbit. I again attacked the tumour twice with caustic points, which caused free bleeding each time. I was still unwilling to resect the superior maxilla on account of the dangers I foresaw both from the operation itself and from the necessity of severing such extensive connections of a very vascular tumour.

Meanwhile, on making my visit one morning in February, 1870, the patient told me that, without having lost consciousness, he had felt when he awoke that morning numbness in his right arm and leg, and we discovered then and on the following days that the upper and lower limbs on the right side were partially, but evidently paralyzed; and as the exophthalmia continued and even increased, I was forced to think that the cribriform plate at the upper wall of the left nasal fossa had been affected similarly to the outer wall, that is, had undergone a destruction and perforation which permitted the tumour to extend towards the cavity of the skull and compress the brain.

However that may be, I at once abandoned all hope, and thought the young man would be soon carried off by meningitis or some other cerebral affection. I regretted that I had not removed and cauterized the tumour at the beginning, after preliminary resection of the superior maxilla, for I now considered such an operation impossible, since there was reason to fear that the removal of the upper

portion of the tumour would open a large communication between the nasal fossa and the cavity of the cranium; I therefore allowed the patient to quit the hospital again the 27th of March, 1870.

What was my astonishment to see him return the 16th February, 1871. I had heard nothing of him for a year, and supposed him to be dead. On the contrary, he came to tell me that since his departure his health had steadily improved in spite of his participation in the fatigues and privations of the siege of Paris. The weakness of the right side had disappeared little by little; no cerebral symptom had occurred; the prominence of the eye existed no longer, and yet no new treatment had been undertaken. The only incident was that in September, 1870, more than five months after he had left La Charité, an abundant epistaxis occurred and obliged him to enter the Hôtel Dieu, in the wards of M. Laugier, who undertook no surgical treatment, but contented himself with prescribing some gargles.

By making him breathe through his nostrils, I ascertained that the air passed freely. Examining him in a good light, I no longer saw in the nasal fossa the round red bodies which were formerly there. Opening his mouth, I saw the median division of the soft palate which I had made, but no tumour above it; I could pass my finger above the palate throughout the whole upper portion of the pharynx exactly as in those who have no polyp. The only thing of which the patient complained was the nasal tone of his voice resulting from the defective condition of the palate. I proposed staphylorraphy at once, to which he did not agree, but he promised to return later and have it performed.

To recapitulate, gentlemen, we have a young man twenty-two years old, who has just escaped being killed by a suffocating naso-pharyngeal fibroma. A palliative treatment prevented death, and afterward kept the tumour from again becoming suffocating. At the age of twenty-four and a half years, and without any further surgical treatment, the rest of the tumour disappears spontaneously, being absorbed, not eliminated. Repair of the orbital and naso-cranial walls takes place by means which we do not exactly understand. The symptoms of compression of the eye and brain disappear, and, in short, the patient appears to be cured.[1]

This fact is certainly favourable to the opinion of M. Legouest, but we must ask ourselves if, perchance, it is not exceptional. I have looked for the records of similar cases, but have found none.

M. Legouest said that in the case of the young man eighteen years old, upon whom he operated in 1865, he intended to make only a palliative operation by tearing out the tumour through a nasal opening previously established by making an incision in the genio-nasal fold, dividing the naso-maxillary suture with a Liston's forceps, turning outwards the inner wall of the maxillary sinus, and leaving this

[1] Since this article was put in type, this patient has written to me that he is again suffering, and has from time to time fresh hemorrhages from the nose. He is far from Paris, and I have not been able to see him. If it is a relapse, the details I have given would none the less justify my opinions upon the influence of age, and authorize me to believe that a new treatment, now that the patient is twenty-five years old, would yield a definitive success.

abnormal route open so that he might again attack the polyp after the reproduction which he expected, and which indeed took place a few months later. But this time the tumour was attacked by gangrenous inflammation and fell. M. Legouest did not know if the polyp had grown a third time, or if a complementary operation had been performed to close the artificial nasal opening. But if, thus far, surgeons have not been guided, like M. Legouest and myself, in their therapeutical decisions, by the thought of the influence of age, some facts favourable to our opinion have appeared. Thus, in the discussion which took place in the Société de Chirurgie in 1866 upon this subject, Velpeau reported two cases in which the patients, operated upon by the simple method of extraction, one twenty years, the other nine years before, had remained perfectly well though retaining upon the basilar process an abnormal prominence which grew no larger. Velpeau indicated the analogy between the behaviour of naso-pharyngeal polyps and that of uterine fibromas at the period of the menopause. We know that often after the cessation of the courses these fibromas or myomas diminish, and even disappear. It may well be the same for the fibromas of the basilar process. On the other hand, it must be admitted that after a certain age naso-pharyngeal fibrous polyps are no longer produced, since to my knowledge no observation has been published of an adult having a polyp of this kind after it had been operated upon during youth. All the published relapses occurred in young people. After the age of twenty-five years we hear nothing of them. The reason is that those upon whom the operation succeeded were permanently cured, or that those in whom a reproduction took place got well spontaneously, like my patient, without undergoing another operation.

Further observation will decide the question, but for the moment I feel justified in repeating to you what I said not long ago about ingrown toe-nail: do not worry too much about relapses; this is a disease of youth; help your patient to become an adult, and, if his tumour does not disappear spontaneously, the chances are great that you will then be able to cure him by a simple operation without relapse.

We must now seek to answer the question which you hear me ask for all the diseases of youth. What is the cause, and how explain the influence of this age upon the development of naso-pharyngeal fibromas?

I shall not spend any time upon this point, because it is impossible for me to give the problem a satisfactory solution. I might indeed tell you that these tumours have their origin in the submucous tissue which is at the same time the peritoneum of the bones of the base of the skull which limit the pharynx above, and that at the period when the development of the skeleton ends, an aberration and an exuberance of nutrition may take place in this periosteal envelope. But I know how hypothetical this explanation is, and prefer to spend no time upon it, but to confine myself to the indication of the fact, as to which there is not the slightest doubt.

I shall be less troubled to draw from what has preceded this

therapeutical conclusion, that preliminary operations, intended to give free access to the implantation of these tumours, should be performed only exceptionally. An explanation of this is necessary, for the plan adopted should necessarily vary according to the age of the patient, the size of the tumour, and, above all, the extent of implantation.

1. Suppose first that the patient is still far from the age at which presumably, adolescence being ended, there will be no more tendency to the reproduction of the fibroma; suppose that he is from thirteen to eighteen years old, and suppose at the same time that the tumour is not very large, not larger, for example, than half an egg, and that examinations with the finger and eye have shown that a pedicle exists and is not very large, that the prolongations into the nasal fossæ do not obstruct these cavites entirely, and that there are no appreciable ones on the side of the pterygo-maxillary fossa or of the orbit.

In such a case the surgeon ought to be guided by this thought, that the disease left to itself will increase, and ultimately send out one or another of those prolongations which destroy the bones of the face, and become hemorrhagic, if not so already, and even suffocating. He should therefore consider intervention necessary. But in my opinion, he ought to reject every preliminary operation, and have recourse to one of the simple ones, especially extraction or ligation; and, as extraction through the nostrils is almost impossible, he should attempt it through the mouth, making use of good curved forceps and helping it with a finger. This attempt is rational for two reasons: first, because the pedicle of a fibrous polyp may be small enough to allow of its being torn off; and, second, because certain single naso-pharyngeal mucous polyps may, like the example I published,[1] develop in young people, the diagnosis between them and fibrous polyps is almost impossible before removal, and they are very easily torn out.

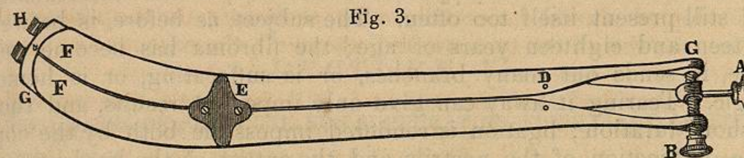
If the attempt to tear out has failed, recourse must be had to the ligature. Passing through one of the nostrils, the patient being seated before a window, a Belloc sound, the spring of which is projected into the mouth, and fastening to the end of this spring the two ends of a very strong thread of triple silk, or of that kind known as twisted silk; the two ends are brought through the nose by withdrawing the sound, and the loop is carried behind the polyp. This is the difficult part of the operation; if the tumour is not very large it may be done with the fingers; but do not forget that, to render it easier for the patient, it is well to prescribe fifty or sixty grains of the bromide of potassium daily during the four or five preceding days. You know that in many people this drug causes a notable diminution of the sensibility of the palate and pharynx.

If the fingers are not sufficient it will be necessary to use a porte-ligature. The one which I prefer is that of Felix Hatin. (Fig. 3.) But if you do not possess one, or if you do not succeed with it, you

[1] Gosselin, Gazette des Hôpitaux, 1866, p. 453.

may still seize the polyp on each side with pronged curved forceps, and while they are held in place by an assistant slide the loop along them.

Fig. 3.



After the loop has been put in place, it is well to transfix the tumour above the soft palate with a curved needle carrying a long thread by which the polyp is drawn forward and kept from being swallowed when detached.

The operation is completed by passing the two ends through a Graefe's ligator and gradually tightening the loop.

Here we have to choose between slow section requiring several days, and extemporaneous section in an hour or two. I should now give the preference to the latter, and I should make the intervals between the successive tightenings longer or shorter as the bleeding was more or less abundant; if it was enough to make me expect hemorrhage after the section was completed, I should increase the constriction only once or twice each day—that is, I should make slow, instead of extemporaneous ligature.

Gentlemen, in having recourse to extraction or to ligation without preliminary operation, you offer, it is true, only a palliative remedy. But you give your patient two advantages: you do nothing to endanger his life, you do not mutilate his face or his mouth. Do not forget that division of the soft, and resection of the hard palate, exposes your youthful patient to the chance of having for the rest of his life a nasal tone, and all the discomforts of a permanent communication between the cavities of the mouth and nose. Do not think that you will always be able to remedy this by staphylorraphy, aided, if necessary, by staphyloplasty, for these operations do not always succeed; often they succeed only imperfectly and leave an opening more or less small, the discomforts of which are about as great as those of a large one, and can be remedied only by an obturator. And think for a moment of the discomforts of always wearing an obturator!

On the other hand, resection of the superior maxilla condemns the patient, if he survives, to the deformity of the face, which results from the scars and the loss of teeth. Modern prothesis has made great progress, I know; but, like the obturator, would not artificial teeth be a grievous burden for the long years that follow adolescence?

I much prefer the palliative operations of which I have spoken.

There may be a relapse. Very well! Begin again as often as may be necessary, only advise the patient not to delay too long, not to let the fibroma grow too large. Repeat, as often as may be necessary, those operations which compromise neither the life nor the appearance of the face and mouth, and when your patient reaches the age of twenty-three, twenty-four, or twenty-five years, perhaps even

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.