without causing any inconvenience, that they cease to grow when adolescence ends, and that their removal offers dangers to which it is absolutely contra-indicated to expose the patient when the tumour is indolent and inoffensive.

LECTURE IV.

SUFFOCATING AND REBELLIOUS NASO-PHARYNGEAL FIBROMA OR FIBROUS POLYP.

Hemorrhagic and suffocating form of fibroma—Large implantation upon the base of the skull—Signification of the word polyp—Palliative operations—Nélaton's operation—Cauterization by electrolysis—Nitric acid—Chloride of zinc—Increase—Exophthalmia, hemiplegia, their disappearance at the age of 25 years.

GENTLEMEN: We have just seen, as we completed the visit, a young man, 23 years old, whom I have treated in our wards for nearly two years for a naso-pharyngeal fibrous polyp which had become suffocating and hemorrhagic, and who appears now to be cured of this serious affection. His history is so instructive from all points of view, and especially with reference to the influence of age, that I wish to relate it to you again, and beg you to engrave it upon your minds.

This young man, Joseph Pellard, entered our wards for the first time the 21st of April, 1869. He was then 22 years old. He told us that since the age of 16 or 17 he had noticed a change in his voice, which had grown nasal, and a slight difficulty in breathing through his nose. During several years these functional symptoms troubled him so little that he paid no attention to them and consulted no one.

At about the age of 20 he bled frequently from the nose; but although the nasal tone had increased, and respiration through the nostrils was impossible, he was still able to live without treatment. After some time the epistaxes became more frequent, though not very abundant; each time the respiration became more embarrassed, and deglutition was difficult. The patient was then obliged to consult a physician, who sent him to me for the surgical treatment which he considered necessary.

The day we examined the patient for the first time, we found that he was large, well formed, and did not have the pale look of anæmic subjects, which proved that the quantity of blood lost had not been considerable. What struck us most was the frequency of his respirations, and the snoring sound which accompanied them. Questioned upon this point, the patient said he did not generally feel choked, but he was short of breath when walking, and for that reason could

neither walk fast nor run. He added that on two occasions, without apparent cause, he had had short attacks of suffocation. His face was not deformed.

In order to examine the nostrils and nasal fossæ, I placed the patient before a window, introduced successively into each nostril Duplay's bivalve nasal speculum, and saw, at about three-quarters of an inch from the nostril, on each side, a round reddish body. I told the patient to close the mouth and make a forcible expiration, and thus discovered not only that these round bodies were not pushed forward, but also that not a particle of air escaped through the nasal fossæ, and that consequently these latter were entirely obstructed. At the same time, I mentioned that the intra-nasal tumours had neither the flattened form nor the pinkish-gray colour of mucous polyps.

Carrying, then, my investigation into the pharynx, I saw at once that the soft palate was pressed forward. I tried to press it back with my finger but was unable to do so, finding resistance upon the sides as well as in the median line. Then depressing the tongue, I saw in the middle of the pharynx a round reddish body extending nearly half an inch below the edge of the palate, and evidently continuous with the resisting body above it. Finally, passing the right index finger beyond the palate, I felt that this fleshy body occupied all the upper or nasal portion of the pharynx. I could pass the end of my finger between it and the wall on the right side, but not on the left, but it was impossible to get behind, or above, or to move it, because it occupied the whole space, and seemed to be fixed upon the first cervical vertebræ.

By these physical and functional symptoms, I recognized one of those tumours so well studied recently by Professor Nélaton, which we know by the name of naso-pharyngeal polyps.

It was not a mucous polyp, because, in the first place, polyps of that kind do not ordinarily reach such a size, secondly, because it was redder, and above all, because its consistency was firmer. All these points are characteristic of fibrous polyps.

The size of the tumour might have given rise to the idea of its being a cancer, and its resistance to the remedies employed during eighteen months might afterwards have confirmed this idea. But there was no ulceration; now, cancer of the nasal, buccal, and pharyngeal cavities, hardly reaches this size, and does not last so long without ulcerating. On the other hand, cancer, especially cancer that progresses slowly (this tumour was at least five years old), is very rare at this age.

Finally, M. Nélaton's researches have taught us two things which ought to be utilized in the diagnosis. The first is that naso-pharyngeal fibrous growths are seen especially upon young people, and the second is that they are seen almost exclusively upon boys and not upon girls.

The cases which I have met are entirely confirmative of these two opinions. I have seen naso-pharyngeal fibromas only upon adoles-

cents and upon boys. I have read of some cases where the patients were girls; but I am not sure that the diagnosis was correct.

Apropos of that, gentlemen, let me put you on your guard against the titles given to many facts in books and periodicals published before 1848. Up to that time they had not had occasion to make the distinctions among naso-pharyngeal tumours which we make to-day, and they gave the name of polyp to every growth which projected into the naso-pharyngeal cavities, without occupying themselves with the nature of the tissue of which the tumour was composed. We now know that there are found in these regions, fibromas, epitheliomas, and cancers, which resemble one another by many of their physical and functional characters. Now, while the two latter may appear at any age and in both sexes, the first present the two etiological peculiarities which I have just mentioned.

I will not go so far as to affirm that naso-pharyngeal fibrous polyps never appear in girls. I only say that neither M. Nélaton nor I have yet observed a positive example of it.

The age and sex, then, of our patient, favoured the opinion that the tumour was a fibroma; but I used the expression *polyp*. What do we mean by this word, and is it rightly used here?

Clinically, we have long called polyps tumours developed and free in those natural cavities of the body which communicate with the exterior, and most of which are covered by a mucous membrane, tumours of which one of the principal characteristics is that they are attached by a pedicle, that is to say, by a portion which is smaller than the free and prominent portion of the tumour. This word "polyp" has the disadvantage of conveying no anatomo-pathological idea. Modern surgery, however, has retained it for two reasons: first, because the presence of the pedicle indicated by this word leads to operations relatively easy (ligature, excision) and different from those necessitated by the tumours of other regions; second, because the pedicle carries with it the idea of non-malignancy, that is, of not being cancerous. I cannot tell you why it is so, but such is the fact, and I formulate it thus: In the natural cavities cancerous tumours are not pedicular; only non-malignant tumours have a pedicle.

That, however, does not mean that non-malignant tumours always have a pedicle, and in fact, in the case of a young man of whom I am now speaking, I was authorized, for the reasons I have given you, to admit a fibroma; but I was by no means authorized the first day, and you will see I have been less and less so ever since, to admit a pedicle. I could not see one, and with my finger I could feel only a small portion of the tumour free, while the latter was absolutely immovable, and I thought I found a sort of fusion between it and the corresponding portions of the skeleton, the basilar surface of the occipital and sphenoid, and the lower face of the petrous portion of the temporal. If, then, the tumour was pedicellated, it was impossible for me to determine it at first, and I was obliged to reserve that part of the diagnosis until, the tumour having been diminished in some way, I should be able to carry my finger around it and see if the implantation was notably smaller than the free

portion. I will tell you now that my later explorations demonstrated the absence of a pedicle and the existence of a large base of implantation. Consequently it was not a polyp, in the rigorous acceptation of the word.

If you have heard me still use the expression, it has been because, on the one hand, it had this other signification, that in my opinion the growth was fibrous and consequently non-malignant, and, on the other hand, I was justified by usage. In the works which have been published in France upon this subject under the inspiration of Nélaton, especially in the theses of Drs. Perier and D'Ornellas, as well as in the discussions upon the subject, the word polyp has been habitually used to indicate every kind of naso-pharyngeal fibrous growth of adolescence.

Remember, nevertheless, to make this distinction, that among the tumours of this kind, some are distinctly pediculated, others are completely sessile, and I will show you hereafter the importance of this distinction for the treatment.

The anatomical diagnosis being thus established, naso-pharyngeal fibroma broadly implanted upon the upper wall of the pharynx, and projecting at the same time into the two nasal fossæ and into the inferior and middle regions of the pharynx, I completed it, by adding that the tumour interfered enough with respiration by blocking up the air passages to deserve the name of suffocating fibroma or polyp.

In this last quality lay the necessity for surgical intervention. But what was to be done?

I passed in review all the simple and compound operations which have been recommended for cases of this kind. I saw at once that a simple operation was impossible on account of the size of the tumour, and that it was necessary to select one of the complex and multiple ones which I was the first to distinguish as *preliminary*, *fundamental*, and *complementary*.[1]

The end proposed in these operations has been to separate the tumour completely at the point of implantation, in the hope of thereby removing it entirely and protecting the patient from relapse, which, according to the experience of Nélaton, confirmed afterwards by that of all surgeons, is very common in this disease, and has been attributed to the insufficiency of the removal. The reasoning, apparently correct, was this: Let the surgical intervention be such as will entirely remove or destroy all the roots of the tumour, and its reproduction will not take place. Some facts agreed with the theory, but others, and they were quite numerous, disagreed. Reproductions occurred in spite of all the care which had been taken to shave off the surface of implantation, to scrape it and to destroy all that could be considered as forming part of the tumour. To be convinced of this you have only to read the tables prepared by M. Michaux de Louvain in 1867.[2] He has collected twenty-seven cases of total re-

[1] Goselin, Traitement chirurgical des Polypes des fosses nasales et du pharynx. Thèse de Concours pour une Chaire de Médecine opératoire Paris, 1850.

[2] Michaux (de Louvain) Quelques Mots encore sur les Polypes fibreux naso-pharyngiens volumineux. Bulletin de l'Académie de Belgique, 3d série, tome i. in 4to.

section of the superior maxilla which resulted in eighteen complete successes, one incomplete, two *relapses*, and three deaths; and twenty-nine cases of removal with resection of the palatal arch, which gave twelve successes, five incomplete results, three unknown, four *relapses*, and five deaths. I am not at all sure that the successes given as complete remained such indefinitely; some of the patients may have had relapses after the surgeon had lost sight of them. But it is nevertheless true, according to the known results, that a relapse is possible after serious preliminary operations which permit the entire removal of the tumour.

I had then to determine whether, in order to save my patient from the death by suffocation which threatened him, I ought to perform a serious preliminary operation which would give me free access to the surface of implantation, so that I might attack the latter with cutting instruments, and afterwards, if neccessary, cauterize it. I had to choose between incision of the soft, followed by resection of the hard palate (Nélaton's method), and resection of the superior maxillary bone, as practised by Flaubert of Rouen, Robert, and Michaux.

I was but little tempted by the first, because, the surface of implantation being probably very large, I should have been unable to get an opening large enough to allow me to operate upon it properly. This preliminary operation, which has the great advantage of sparing the face and leaving the alveolar-dental arch intact, appears to me to be sufficient and preferable when the implantation is small, when it is limited, for example, to the basilar surface of the occipital bone; but it is certainly insufficient when the implantation is very large, as was the case here. With reference to the certainty of execution, the maxillary route was undoubtedly preferable. But besides the inevitable disfigurement which it causes, it is more serious and is more likely than the former to lead to purulent infection. I know that the statistics published by M. Michaux seem to prove the contrary, but remember, and this objection applies to all statistics based on observations gathered from journals, that all the cases, and especially the unfortunate ones, have not been published, and that consequently statistics of this kind, in spite of their apparent exactitude, do not definitely settle the question of the comparative danger of different operations. For my part, I am convinced by the results of resection of the upper maxilla for other affections than polyps, that this operation is more dangerous than resection of the palate. Moreover, in the present case it was not only the preliminary operation, but also the fundamental one, which was dangerous. This great tumour was very vascular, for it had frequently occasioned epistaxis, and there was reason to fear that if I attacked it with the bistoury, scissors, or hooks, the patient would die upon the table from hemorrhage.

Reflecting upon those dangers to which a complicated operation exposed the patient, I thought of the influence of age, and asked myself whether the patient, being twenty-two years old, was not near that period of life in which tumours of this kind have no tendency to be produced, and consequently none to reappear. I remembered

that my learned friend and colleague, M. Legouest, had uttered formally, before the Société de Chirurgie in 1865, the opinion that naso-pharyngeal polyps might be treated by a simple and palliative operation until the period of their habitual formation had passed.

Furthermore, having, as I have just told you, no very precise notions as to the extent of the implantation, and not being willing to engage in a perilous operation without being better informed, I decided to confine myself at first to a palliative operation which should have a double object, that of relieving the patient from the danger of suffocation, and giving me more definite ideas as to the connections of the tumour by which my future action would be determined.

Having decided upon this plan, I proposed soon to put it into operation, when, on reaching the hospital on the morning of the 27th of April, I learned that the patient had had during the night a violent fit of suffocation which had nearly proved fatal. There was then no more time to be lost, and I performed the same day a palliative operation intended to prevent asphyxia.

The patient having been seated upon a chair in front of a window, I divided, as an indispensable preliminary operation, the soft palate along the median line, and resected a portion of the hard palate (Nélaton's method), and by the way thus opened I introduced a strong pair of polypus forceps, with which I seized the tumour and tried to draw it towards me, combining the movement of traction with that of rotation. After using considerable force I brought away a very small piece of the tumour; I tried again two or three times, without any success, and then taking a pair of pronged forceps I fixed them firmly in the morbid mass and cut beyond them with strong curved scissors; this time I brought away a piece as large as a walnut. I then repeated the manœuvre after giving the patient time to rest and spit.

The operation had not been very long, but the young man had lost considerable blood and felt weak, so I decided not to try to remove any more, and occupied myself with checking the flow of blood. For that purpose I touched the bleeding portions of the tumour several times with a brush dipped in a mixture of one part of perchloride of iron at 30° and three parts of water, and made the patient gargle his throat with a still weaker solution of the same preparation. The flow soon stopped, and the patient was able to walk back to his bed. The following days respiration was much freer, suffocation no longer threatened, and no accident consecutive to the operation endangered the life of the patient. In a word, my incomplete and palliative operation had had none of the unfortunate consequences which might have attended an attempt at a radical cure. Still we were far from a cure, and had even to expect an increase in the portion which had not been removed.

I should mention that the portion removed was examined, and found to consist of a fibrous framework and a rather large number of bloodvessels.

Examining the patient daily, I discovered between the twentieth