TWO LECTURES ON TUMOURS OF THE LARYNX; THEIR PATHOLOGY, SYMPTOMS, AND TREATMENT, WITH ILLUSTRATIVE CASES.

Selected from a Course of Lectures delivered during the Winter Session of 1885-86 at the Glasgow Royal Infirmary.

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LECTURE II.

GENTLEMEN,—You will remember that, at my last lecture, I called your attention to the following points. At the beginning of the hour, I indicated to you the distinctions which characterise tumours and separate them from growths of inflammatory origin. After making a few remarks on the subject of etiology, I discussed with you at some length the pathology and symptoms of benign tumours; and towards the end of the lecture I described in detail the more common varieties of simple or homologous tumours.

To-day I shall endeavour, with the aid of the patients and specimens now before you, to describe the two malignant tumours which may attack the larynx. These are the sarcomata and the carcinomata; and they may be divided into the intrinsic and the extrinsic, according as they are limited or not to the cavity. Growths occupying the interior of the larynx and attached to the false vocal cords, the true cords, or the parts immediately below them, should be included under intrinsic tumours; whereas those growing from the aryteno-epiglottic folds, from the epiglottis, or from the interarytenoid fold are more properly described as extrinsic. This division, as I will point out to you shortly, is, when operative interference is contemplated, of great clinical importance.

Let me now say a few words regarding the sarcomata. These tumours are constructed on the type of embryonic connective tissue, which may or may not undergo development towards an adult form. It may be broadly stated that, the more closely the tumour resembles in structure embryonic connective tissue, the more malignant it is likely to be; in other words, the malignancy of the growth is in an inverse ratio to the development of its tissue. Thus the round-celled sarcoma is more malignant than the spindle-celled, and the spindle-celled more so than the fibrous or fasciculated.

Sarcomata in the larynx generally originate in the submucous connective tissue, rapidly attain a considerable size, and usually invade all the structures with which they come into contact; as a rule they are sessile, smooth, or slightly lobulated, and commonly they are covered with normal mucous membrane, but, in some instances, the capillaries on the surface become distended, and impart to the membrane a dark hue. The surface may present a papillomatous appearance, but deep ulceration is seldom met with in these growths. The mode of development of the primary growth is easily followed, and the rapidity of its increase depends upon the nature of its histological elements. When it is soft and rich in cellular elements, the growth is rapid and the tumour vascular; whereas, when its texture is more fibrous, its consistency greater, and the cells spindle-shaped, the increase in bulk is much slower.

Besides rapid growth, one of the most pronounced characteristics of the sarcomata is the tendency which they have to continuously invade the surrounding tissues. Masses of round or spindle-shaped embryonic connective tissue cells form and become incorporated with the neighbouring parts, so that, in their mode of growth, they closely resemble inflammatory new formations. The tumour moulds itself to the normal tissues, but at the same time the cells which form it replace, to some extent, the histological elements of the existing structures. In the sarcomata, there is no proper stroma of connective tissue, so that the blood-vessels are in immediate contact with the cells. The lymphatic supply is not abundant, and consequently the lymphatic glands have little tendency to become enlarged, and secondary metastatic formations are rarely met with associated with these laryngeal growths.

The specimens which I now show you illustrate sarcomata. This one was removed from the body of an old man who came into the hospital last winter, and is an example of the alveolar variety.

When the patient was seen for the first time, he stated that the

first symptom that attracted his attention, was pain in the region of the larynx. Within the last few days, however, the pain had commenced to radiate to the ears and lower part of the face. This symptom, he said, had been present for about twelve weeks. During the first few weeks, there had been no great interference with speech or respiration. About six weeks ago he complained of difficulty in deglutition and slight dyspnoea; and since that time the symptoms had gradually become more marked, so that, on admission, there was almost complete aphonia, unless when the patient made a special effort; only then did he succeed in producing a vocal sound. There was no great interference with the passage of air through the larynx during inspiration, and expiration was comparatively free. On palpation of the neck, I found the larynx to be distorted, the ale of the thyroid cartilage, particularly the left, being pressed forwards and away from the middle line.

On laryngoscopic examination, the tumour appeared as an ill-defined swelling, occupying chiefly the left side of the larynx, but also involving the right vocal cord, and the base of the epiglottis. The opening of the glottis was seen to be considerably diminished in size, and pressed to the right side. The aryteno-epiglottidean folds were indurated and oedematous, and the base of the epiglottis was so swollen that it was with difficulty that the interior of the larynx could be seen. The mucous membrane of the larynx was smooth, and in no part was there any evidence of recent or old inflammatory changes.

When seen at the dispensary, the patient was so weak and reduced in health that I directed him to be admitted into the hospital immediately, not only on account of the disease of the larynx, but also in order that his general condition might be attended to. The patient was admitted at once to Ward X, and, when placed in bed, the house-physician found him to be so exhausted, that he considered it advisable not to submit him to a careful examination in the meantime, as it was evident, from a physical examination of the chest, that he was suffering from hypostatic congestion of the lungs. The patient gradually became weaker, and died on the evening of admission.

A *post mortem* examination showed that he had been suffering from chronic tubular nephritis; dilatation of the right ventricle, and hypertrophy and dilatation of the left ventricle, without valvular disease; hypostatic congestion of the lungs, and nutmeg liver.

On examination of the larynx, the tumour was found to be about the size of a walnut, and was situated between the ale of the thyroid cartilage and the mucous membrane of the larynx, all the intervening tissues having been infiltrated by the neoplasm. It did not extend above the thyroid cartilage, nor below the cricoid cartilage, on its posterior aspect. In front, however, it passed up as high as the lower third of the epiglottis; and the anterior part of the thyroid cartilage was infiltrated and perforated by the tumour, and a small portion of it was found occupying the space in front of the crico-thyroid membrane. The great bulk of the tumour occupied the left side of the larynx, but some of the tissues in front and to the right were also found to be invaded. The right vocal cord particularly was involved, and the lower third of the epiglottis measured fully a quarter of an inch in thickness. No secondary formations were discovered. On section, the substance of the tumour was found to be of an uniform moderately firm consistency, a whitish-yellow colour, and, on microscopic examination, was found to present the characteristic appearances of an alveolar sarcoma. The tumour possessed a distinctly alveolar arrangement, some of the alveoli being occupied by three or four embryonic cells, while others contained a great number of large cells closely resembling epithelium in appearance. At some parts, the tumour was composed of simple round and spindle-shaped cells, without any distinct tendency to an alveolar arrangement; while, at other parts, the masses of cells were intersected by delicate strands of connective tissue, which divided the cells contained in the larger alveoli into small clusters. At one part of the section examined, several myeloid cells containing numerous nuclei were seen, and almost at the same point, a distinct osseous trabecula was found. The trabecula was not situated, as far as could be discovered, close to or in contact with cartilage, but appeared to be in the substance of the tumour. This is the only part where the elements of the tumour showed a tendency to form osseous tissue.

This form of sarcoma is closely related to the carcinomata, and it is frequently extremely difficult to declare whether such tumours should be placed amongst the sarcomata or the carcinomata. The principal points which distinguish this form of sarcoma from carcinomata are these: (1) the stroma and the cells are intimately interwoven; (2) the blood-vessels run amongst the cells and in the stroma; (3) metastasis is usually by the blood-vessels; and (4), as a rule, the lymphatics are not involved. On the other hand, in cancer, the stroma and cellular elements, which are epithelial in their origin, are easily separated from one another, the blood-vessels run in the stroma only, and metastasis

sis is primarily by the lymphatics. Both growths are, however, equally malignant, but cachexia is seldom observed so early in the sarcomata as in the cancers.

I have another specimen here which I wish you to look at. It is one of historical interest, and was placed in the museum by my predecessor, the late Dr. Foulis. It is also one of sarcoma, but not precisely the same as the last preparation. It is the first larynx excised in this country for malignant disease. On examining the parts, you will find that the tumour is situated on the under surface of the left vocal cord, and forms a pendulous mass, which hangs into the trachea as far down as the first ring. From the upper part of the tumour, an extension has taken place upwards, and it presents a soft pale appearance. Its structure is that of a spindle-celled sarcoma. This larynx was excised by Dr. Foulis, on September 10th, 1877, and you will find a detailed account of the case in the *Lancet* for October 13th, 1877, and January 26th, 1878. I shall have occasion to refer to this case again, when we come to consider the operation of laryngectomy.

[To be continued.]

SOME REMARKS ON THE VENEREAL DISEASE, CHIEFLY IN REFERENCE TO ITS EVOLUTION.

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I HAVE read Mr. Hutchinson's Lettsomian Lectures on Syphilis, and, I need not add, with interest; for everything that Mr. Hutchinson writes repays a thoughtful perusal. There are points in these lectures which recall a very early period of my career, when, as an articulated pupil of Mr. Travers, I was engaged in assisting to collect materials for his address to the Hunterian Society, at the close of his year of presidency. His subject was the venereal disease, in the broadest acceptance of the term. This address was published, though I believe its circulation was limited; and I have a copy before me, presented by the author, in acknowledgment of the trifling help I was, as a youth, privileged to afford my honoured master.

Mr. Travers's first proposition is, that the secretion of an inflamed mucous membrane is competent to excite a similar condition in a healthy mucous surface with which it is brought into contact; and this he illustrated by examples of inflammatory leucorrhœa causing suppurative ophthalmia in newly-born children, and even purulent discharge from the male urethra. There is, no doubt, more susceptibility to such infection in some individuals than in others, as is exemplified in the communication of gonorrhœa; and this is probably even a more potent factor in the issue than the virulence of the secretion. I may add that the specific nature of gonorrhœal ophthalmia is, at least, questionable. I have certainly seen as fatal consequences from suppurative ophthalmia occurring, where there was no suspicion of specific infection.

The next step considered by Mr. Travers is the production of a sore. This condition, as he argued and as I apprehend few will question, may result from the simple application and retention of gonorrhœal matter from the vagina on an excoriation or cutaneous crevice of the glans penis or prepuce. The secretion from the ulcer consequent on this lesion may, when absorbed, infect the system, producing mild secondary symptoms, manifested chiefly in the throat and on the cutaneous surface, and sometimes affecting the joints.

The more virulent form of primary sore—the excavated ulcer with hardened circumference—Mr. Travers regarded as a constitutional sore, the product of a system already impregnated with poison; or, to use his own words, "a gonorrhœal sore in a fresh subject produces, by absorption, constitutional symptoms of the first order (those referred to above); and communicates a similar sore, having the same tendency to propagate the first order of symptoms. But a gonorrhœal sore, occurring in a person already the subject of the first order of symptoms, becomes a constitutional sore, and secretes a matter capable of producing the second order of symptoms (those from hard chancre) in the individual, and of communicating the matter of chancre to another." Of course Mr. Travers meant that this is the way in which a chancre was originally, and may still be produced; and no doubt individual susceptibility greatly influences the result. Probably also the maximum of intensity of the poison is not reached until it has passed, under favouring circumstances both constitutional and antecedent, through several individuals.

These views were not original; for Hunter, as is well known, regarded gonorrhœa and syphilis as modifications of one and the same poison. But I suppose Mr. Travers thought it desirable to recall public attention to these opinions, whilst he illustrated the views he entertained by his own experience.

There are some points in connection with this subject on which I

will venture to make a few remarks, more in the form of suggestion than of authoritative opinion, and certainly not in a spirit of controversial criticism; for I must candidly admit that I have not at hand any statistics sufficiently comprehensive to carry weight; and I am aware how little value is attached—and perhaps justly so—to opinions thus unsupported.

First, concerning what is generally understood by constitutional influence. This is exemplified in numberless ways in modifying the characteristics of disease; and I can see nothing extravagant in the supposition that a simple inflammatory product may be thereby converted (to use Mr. Hutchinson's word) into a specialised form of disease; and again that this specialised form should, in course of time, assume a specific type; more permanent in character because it has reached its maximum development in that particular direction. In such evolution time is an essential ingredient; as well as the character of the infecting matter and the susceptibility of the recipient; both of which are dependent on inherited or acquired diathesis. This is exemplified in the circumstance that two individuals, deriving syphilis (I use the word in an extended sense) from the same source, are not necessarily affected to the same degree, or even in exactly the same way.

The study of ordinary septic inflammation from decomposing or diseased animal-matter affords an analogous illustration; the susceptibility of the recipient greatly influences the result. Here likewise, as I know by repeated personal experience as well as from observation, there is a period of incubation (if I may so term it) before what may be regarded as the zymotic action commences. In these instances the interval is short compared with that in the case of most specific poisons, perhaps because the affinity between the poison and the circulating fluids is closer in the former than in the latter. But the period of incubation in what are termed specific diseases is not such as to admit of their being thus classified under one general law. It is true that some of the exanthemata are approximately regular as regards the interval between exposure to infection and the manifestation of disease; but they differ in this respect from one another. Yet I think that in a few, as probably in syphilis, there is a direct ratio between the virulence of the poison and the length of time it is present in the system before it is developed. Certainly a chancreoid (by which I mean a soft sore) has a shorter period of incubation than a chancre; and I think it a subject worthy of further investigation, whether there is not a more or less regular association between the length of incubation and the subsequent severity of the constitutional affection. That the interval alluded to varies very much in different instances cannot be doubted; and the simplest, and, as I believe, the true, explanation of the conflicting evidence on this point is afforded by the admission that there are many grades of the same disease; the mildest of which is developed after a short interval, whilst the severer forms are more delayed; the intensity perhaps bearing, as I have remarked, a direct relation to the length of incubation. The case of the self-vaccinated medical man, mentioned by Mr. Hutchinson, illustrates the latter class.

My creed, then, derived from observation, is that there may be superficial sores—mere ulcerated excoriations—which heal without constitutional treatment, and leave no after-consequences; that there are other superficial sores which appear after a varying period of incubation, and, though possessing none of the special characteristics of chancre, namely, induration and exedent ulceration, yet may entail mild secondary symptoms; that there is a third class, the genuine chancre, with a longer period of incubation, and entailing, more certainly, severer and more complicated secondary symptoms, which are far less amenable to treatment. Between these last two or constitutional varieties of the disease there is no hard and fast line to be drawn; the gradations between the extremes being many, and determined by circumstances both personal and extraneous, of which the quality of the imparted virus is the most influential. I believe that mercury is competent to save a patient from the constitutional sequences of even a hard chancre; at the same time I should not feel justified in promising immunity from secondary complications in any case, where even a short interval only had elapsed between exposure to infection and the local development of the disease; though the sore were superficial and devoid of surrounding induration.

I believe it is an admitted fact that secondary symptoms sometimes occur without any history of primary disease except gonorrhœa; and the suggested explanation is that a primary lesion must have existed out of sight, in some part of the urethra. Now, the phenomena attending the communication of gonorrhœa are more intelligible where the recipient is the female than the converse. The orifice only of the male urethra is exposed; and the canal is not only swept in the act of coition, but frequently irrigated afterwards by the current of urine. How much more difficult, then, it is to conceive that the