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C A S E

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OF

ENORMOUS DEEP-SEATED TUMOUR

OF THE

FACE AND NECK,

SUCCESSFULLY REMOVED BY OPERATION.

BY

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IN the beginning of October, 1862, I received a letter from Dr. Phipps, of Manchester, in reference to the patient whose case I am about to narrate. He gave me the general history of her case; and enclosed three photographic portraits, exhibiting a tumour from different points of view; and requested me to say whether I thought there was any possibility of removing it, as she was willing to run any risk to have it removed. The history of her case was as follows:—

“ Mrs. Jepson, aged thirty-four, of a healthy appearance, states that, when eighteen years old she noticed what she calls a ‘waxen kernel,’ growing under the skin over the mastoid process of the right side, and immediately under the lobule of the ear. For two years it showed no tendency to grow larger; but afterwards it increased slowly; and she applied for relief to several medical men. In spite of the use of iodine, externally and internally, it continued to grow. She was married when she was twenty-one years of age; and states that during her pregnancies the tumour appeared to

increase more rapidly than at other times. Four years after her marriage the growth had reached the size of a large hen's egg; and she was taken by her medical attendant to the Manchester Infirmary, to obtain the advice of the surgeons of that institution. They told her that the tumour might be removed; but that she must take the whole risk of the operation on herself. Her own medical attendant seems to have dissuaded her from having anything done. Since then the tumour has continued gradually enlarging; but of late years has shown a marked tendency to more rapid increase."

I was informed that the patient, harassed by the weight and deformity of the tumour, had recently applied to a surgeon at Manchester to have it removed; but he declined interfering; and dissuaded her from submitting to any operation. I wrote, in reply to Dr. Phipps, that though I could not decide without personally examining the patient, I was inclined, from the history he gave of the growth, and his account of its general relations, to think it might be removed; and that I would arrange for her reception under my care if she came to Edinburgh, as contemplated. She was admitted into my wards in the Royal Infirmary, on the 11th November, 1862.

Appearances on Admission.—The patient is a somewhat pale, but not cachectic, looking woman. There is an enormous tumour, as large as her head, projecting from the right side of her neck. Its boundaries are the following:—Beginning about one inch from the second cervical vertebra, it passes downwards to within an inch and a-half of the clavicle; then sweeps obliquely to the middle line of the neck, which it reaches near the cricoid cartilage. It then passes upwards by the side of the chin, close by the angle of the mouth—which is not distorted; and round by the outer angle of the orbit, and through the lower part of the temporal region, and thence to the spinal column, on a level with the meatus auditorius externus and apex of the mastoid process. The lobule of the ear is very considerably stretched. The surface of the tumour is irregular, presenting a lobulated appearance; the most prominent part is that which projects forwards from the face, and where there is a feeling of fluctuation; the rest of it is solid. The veins over the surface are not markedly distended. The anterior portion of the tumour is more movable than the posterior. There is no glandular enlargement, either in the subclavian space or on the left side of

the neck. Respiration and deglutition are not in the least interfered with.

November 18th.—Since the 16th instant she has been very sick, with occasional vomiting; but to-day she feels much better. The sickness is almost entirely gone; but the fauces are inflamed. Pulse 92.

November 21st.—The throat is still inflamed; otherwise she feels better.

Operation.—On the 5th of December, Mrs. Jepson having quite recovered from the feverish attack from which she suffered after her admission into the hospital, I proceeded to remove the tumour. The patient having been placed recumbent, and brought under the influence of chloroform—her head and shoulders supported with pillows, and her face turned towards the left side, I commenced the operation by making two slightly curved incisions, extending from the lobe of the ear to the sternal attachment of the sterno-mastoid muscle, so as to mark out an elliptical portion of skin, about three and a-half inches broad at its widest part, over the middle and prominent part of the tumour—the anterior incision corresponding nearly to the internal edge of the mastoid muscle. I next made an incision backwards and slightly downwards from the middle of the posterior longitudinal incision, so as to extend beyond the posterior limit of the tumour; and lastly, an incision from a point external to the angle of the mouth, was carried obliquely downwards and outwards, so as to fall upon the centre of the anterior longitudinal incision. The four large flaps of skin and platysma myoides thus marked out were then dissected and reflected off the tumour, commencing with the posterior—the external jugular vein being tied with two ligatures, and divided between them. When the whole surface of the enormous growth was thus exposed—except where the elliptical portion of skin remained—the sterno-mastoid was seen to be so attached to the tumour about its middle, that I divided it above and below that part. I then relieved the anterior margins of the cervical portion by a careful dissection, keeping the edge of the knife towards the tumour until I was fairly beyond the line of the great vessels. My dissection was continued from the lower and posterior part till the phrenic nerve was seen clearly, and the upper and posterior portion, which had been previously so far relieved, was then rapidly detached from its deep connexions, and the whole of the cervical mass of the tumour was

free. The detachment of the facial and parotid portion still remained to be accomplished; and this required great care, both because that part of the tumour seemed more cystic, and also because, as I expected, it was deeply connected behind the ramus of the jaw. On dissecting it from before, downwards and backwards, I found it attached to the fascial covering of the posterior belly of the digastric muscle, so that I had to dissect the muscular fibres. Above, it dipped deeply between the mastoid process and the jaw; but, partly with the finger, and careful dissection with the knife, it was detached pretty easily, till I arrived at the attachment under the ear over the mastoid process. Here it was firmly adherent; and the weight of the tumour caused a slight tear of its substance; but by having the tumour supported I dissected this attachment carefully, so as to remove the whole tumour entire. A large vessel entered it at this point, which was readily secured. During the operation some arteries which bled were tied as cut; and also some large veins, previous to their division. The chief bleeding during the operation was venous, from the divided veins passing from the tumour; but the whole amount of blood lost certainly did not amount to eight ounces. The wound resulting from this dissection, when the tumour was removed, extended from the zygoma to the clavicle and sterno-clavicular articulation. In the facial portion, the parotid gland seemed either atrophied or so displaced, that nothing was to be seen of it in the deep space between the jaw and the mastoid process. The portio-dura—the cervico-facial portion of which had been unavoidably cut—was seen crossing to the face; and the external carotid could be felt pulsating; and the digastric was seen dissected here. In the cervical portion of the wound, the great internal jugular, and its tributary veins, and the carotid artery, were exposed for nearly their whole length, and, posteriorly, the phrenic nerve was seen lying on the anterior scalenus. The flaps were brought together by a few points of suture, and seemed to be rather redundant, notwithstanding the elliptical portion of skin removed. A flat fold of lint was placed lightly over the wound.

During the operation the chloroform caused vomiting. The patient was carried to bed; hot water bottles were applied to the feet, and a brandy enema given.

Dec. 4th.—Slept tolerably well during the night; sickness pretty severe; ordered brandy and ice; pulse 128.

Dec. 5th.—Pulse 130; slept pretty well; has taken a little food;

the facial nerve seems slightly affected; she feels very little pain in the wound.

Dec. 6th.—Pulse 96; several stitches removed.

Dec. 8th.—Pulse 98; slept better than she has done since the operation; the lower angle of one of the flaps showing a tendency to inversion, a piece of lint was introduced below it, and the wound dressed with a solution of chloride of soda.

Dec. 9th.—Wound discharging freely; continue dressing; affection of the facial nerve not so marked; pulse 96.

Dec. 10th.—Still improving; had a very refreshing sleep last night; taking her food well; pulse 92.

Dec. 15th.—Wound looking well; dressed with a solution of chloride of soda; taking food well; sleeping well, and not complaining of pain; has been sitting up a little occasionally since last report; pulse 84.

Dec. 17th.—Still improving in every respect; pulse 84.

Dec. 20th.—Wound still discharging freely; appetite good; pulse normal; ligatures came away to-day at dressing.

Dec. 23rd.—Yesterday she became sick, and vomited several times after dinner; sickness continued occasionally during the night; this morning she is not nearly so sick as the day before; the wound presents the appearance of grey phagedæna, with erysipelatous blush on the skin; touched it lightly with nitric acid; tongue whitish; pulse 112.

Dec. 24th.—Sickness entirely gone; the wound rather dusky-looking; the surface touched slightly with nitric acid.

Dec. 25th.—The wound has much the same appearance as it had yesterday; continue treatment; pulse 96.

Jan. 6th.—Since last report she has been improving very satisfactorily; this morning she walked from Ward XX., where she has been lying temporarily, to her old quarters in the private ward; the wound is looking well, and the tongue clean; and the pulse is 88.

Jan. 12th.—Is much improved; sat up for an hour yesterday; the wound is healing rapidly.

Feb. 3rd.—Since last report the patient has gone on improving daily; the wound is now almost entirely healed; and she left the hospital to-day for the Convalescent House.

After remaining for some weeks in the Convalescent House, till the cure was completed, Mrs. Jepson returned to her home at Over-Darwen, Lancashire; and since her return I have heard frequently, both from herself and also from Dr. Phipps, who states that her

health is good and her appearance gradually improving; the marks of the cicatrix becoming less evident.

Examination of the tumour after its removal.—The growth was of a very irregular form, but may be described as an irregular ovoid mass, $9\frac{1}{2}$ inches in length, $8\frac{3}{4}$ inches at broadest part; its thickness or projection $7\frac{3}{4}$ inches, and weighing rather more than 7 pounds. It was nodulated on its surface, some of the larger projections looking like cysts, and feeling soft to the touch. The whole growth, however, was composed of solid matter, and presented, on section, the characters of the fibro-cartilaginous form of fibrous tumours. A careful examination of its structure was made by my friend Dr. Haldane, who has favoured me with the following description of it:—

“On section the mass was found to consist of two kinds of material; the most abundant, and that which formed the basis and the greater part of the tumour, was of a glistening appearance, a pale bluish-white colour, and was of firm almost cartilaginous consistence. Mixed with this, and occurring generally in bands, but sometimes in small patches, was a softer and more friable matter, of a pale opaque yellow colour. A few small masses of a glistening yellow appearance, evidently consisting of fat, were scattered through the mass.

“On microscopic examination the firm glistening portion of the tumour was found to consist of a finely fibrillated structure, in which were embedded oval, rounded, or elongated nucleated cells, having all the characters of cartilage cells; these varied in abundance in different parts, being, in some places, as numerous as the cells in true cartilage, in others but sparsely disseminated. The yellowish opaque matter consisted of granular material and small cells, apparently in process of disintegration; they resembled tubercle corpuscles or shrivelled pus cells, but were somewhat larger; they contained no nucleus, but, in many, one or more granules were seen. The matter, which to the naked eye seemed fatty, was proved to be so on microscopic examination.”

Remarks.—The case just detailed seemed to me worthy of notice on account of the great size of the tumour, its important anatomical relations, and the formidable character of the operation required for its removal; but especially as giving encouragement for surgical interference in similar cases of deep-seated cervical tumours, and as

indicating certain principles, both in regard to the kind of growths suitable for operation, and the points to be attended to in effecting their removal.

Operations for the removal of large tumours from the neck are always attended with great danger from the proximity of the numerous important structures in that region, and the impossibility of thoroughly commanding the circulation through the great vessels during the operation. Large tumours, arising in the parotid and passing into the cervical region, have been frequently removed when placed superficially to the sterno-mastoid muscle. But some surgical authorities regard cases of tumours developed beneath that muscle as unsuitable for removal by operation; and, in point of fact, few if any cases of complete and successful removal of such tumours are recorded; at least, after some research, I can only find four cases mentioned:—One by Mr. John Bell, in his work on surgery, Vol. III.; two by Professor Warren, of Boston, in his work on tumours; and one incidentally mentioned by Mr. Liston in his *Practical Surgery*. Of the three first mentioned only are the details given, and in none of them was the whole tumour removed. Mr. Bell, who describes the operation in his usual graphic style, confesses that he left some small roots of the tumour attached to the transverse processes of the vertebræ for fear of injuring the phrenic nerve. The tumour rapidly recurred and destroyed the patient. In one of Mr. Warren's cases only portions of the growth could be removed, as it involved all the textures intimately; and, after ligature of both the carotid artery and internal jugular vein, a large mass was left, being connected with, and projecting into the pharynx. In his second case, Professor Warren, after clearing the surface of the tumour, rather than divide the sterno-mastoid for fear of injuring the spinal accessory, "the consequences of which last I was unacquainted with," adopted the alternative of cleaving the mass perpendicularly in its long axis, so as to remove the two halves from under the muscle; and here, again, he tied and divided both the carotid and internal jugular; but some parts of the tumour in front of the vertebræ were left, the actual cautery being applied to them. The details of the case subsequent to the operation are meagre; very grave symptoms appear to have followed immediately, but the patient seems to have rallied; and, though we are led to infer that he did recover, nothing is said of the ultimate result, or whether the tumour was reproduced or not. The only notice of Mr. Liston's case I can find is contained in *Practical Surgery*,

Chap. V., "On the Injuries and Diseases of Muscles and Tendons." He says:—"I had occasion to remove the sterno-mastoid muscle of one side, involved in a sarcomatous tumour from its origin to its insertion—a growth to which the most fastidious critic will not refuse the term sarcoma; though, in all probability, the muscular fibres may have been involved secondarily. The tumour was, so far, limited by a cellular sheath, yet the dissection was difficult and extensive. The patient made a good recovery, and no mal-position of the head followed."^a

So far as I could judge from this brief account of Mr. Liston's case, it seemed a growth developed in the substance of the mastoid, surrounded by the fascial sheath of the muscle; and, if so, differing very much from the enormous and irregular tumour I had to deal with. The cases recorded by Bell and Warren, though not successful in complete removal of the tumours, possessed this element of encouragement, that, whilst the failure depended on the character of the growth being unsuitable for any operation, they showed how much could be effected even under unfavourable circumstances, and so led me to infer that if the character of the growth were suitable, the difficulty of the operation need not be an obstacle to its performance.

In determining the propriety of operative interference in Mrs. Jepson's case, it seemed to me that the points principally to be considered were:—1st. The character of the tumour; whether simple or malignant? 2nd. The probable result, if the growth were left to itself? 3rd. How far its enormous size, anatomical relations, and possible connexions with vitally important parts might endanger life, or prevent its complete removal?

Correct diagnosis as to the character of the growth is most important in deciding on the question of operation in all cases of tumour, as involving the probability of future immunity from the recurrence of the disease. But in the case of large tumours in the vicinity of important organs, it is also important as to the question of immediate danger to life in the operation. In my surgical

^a Since writing the above I have found in one of the Journals of the Royal Infirmary for 1834, the report of a case of large cervical tumour, operated on by Mr. Liston. The tumour, which occupied nearly the same position as the cervical portion of my patient's tumour, had grown rapidly in about two years. In this case Mr. Liston found it impossible to remove the whole growth by the knife, and the part near the vertebræ was strangulated by ligatures passed through its base. The patient recovered at the time.—J. S.

lectures I have always dwelt upon the limitation of simple, as compared with malignant tumours, as a principle of great practical value. In simple growths, important organs—such as great vessels and nerves—may be pressed upon, pushed aside, or even surrounded by the tumour or its lobules; but the cellular sheaths are not destroyed; and even if the growth has formed adhesions to the sheath, the vessels themselves are free; whereas, in malignant growths we find no such limitation. On the contrary, the disease often invades all the textures, destroying the cellular sheaths, and involving the vessels and nerves themselves; and even when the mass of such a tumour is enclosed in a dense cyst, and apparently movable, it is not truly limited; but the narrow prolongations of the diseased structure dip deeply amongst the textures, and form such connexions as to defy any certainty of complete removal, as happened in the cases recorded by J. Bell and Warren, already referred to.

In the case of Mrs. Jepson, the originally slow progress of the growth, the comparatively unimpaired state of her general health, together with the appearance of the tumour and the absence of that anxious expression of countenance which marks most cases of malignant cachexy, were all conditions indicative of the simple character of the growth. Whilst the more rapid increase latterly noticed, though a reason for interference, was only what we find in most tumours, however benign, and depends on the enlargement of their vessels, and consequent increase of nutritive supply. So far, then, as the character of the growth was concerned, there was everything in favour of operation, as the tumour was neither likely to involve the neighbouring textures nor liable to recur after removal.

The second consideration was, the probable progress of the tumour if left to itself? As yet neither respiration, deglutition, nor any vital function, had been affected by the growth; but then it had, of late, begun to increase more rapidly in bulk, and over the most prominent part the skin had a dusky red appearance, which showed a tendency to ulceration; and when that once commences, even in simple tumours, we know how rapidly they fungate, slough, and bleed—degenerating locally, and exhausting the patient by discharge and pain—and that their removal then becomes much more difficult and dangerous. Besides, the nutrition of the growth was evidently carried on at the expense of the patient's general health; for, though not cachectic, she had become pale, and felt more feeble than formerly; whilst the enormous bulk and weight,

together with the increasing deformity, rendered her almost unfit for any duty, and gave rise to great mental depression, so that she was most anxious to have the tumour removed at all hazards. The consideration of these first two questions resulted in a decision favourable to operative interference. It now remained to consider how far the size and connexions of the tumour admitted of removal by operation without immediate risk to the patient's life; and to plan the procedure by which this could be most readily and safely effected. The great bulk of a tumour, though always a source of risk from the extensive incisions requisite for its removal, the amount of surface exposed, and the proportional hemorrhage, venous and arterial, does not necessarily render the operation more difficult; on the contrary, the very size gives a power of leverage which often facilitates the dissection. But when the mass is so situated as to present a large surface it may be adherent to, or in close connexion with vitally important parts, then the operation required for its removal becomes most formidable. These elements of difficulty and danger were present to their fullest extent in my patient's case; for, besides the enormous bulk of the tumour, it was developed beneath the sterno-mastoid, and its deep surface was necessarily in the closest relation with the great vessels and important nerves in the cervical region, from the lower jaw to within an inch of the sternum, and stretching backwards to the margin of the trapezius muscle; whilst the facial portion felt fixed in the parotid region, as if deeply nitched behind the ramus of the jaw; and it could be felt projecting towards the fauces within the mouth. The bulk, form, and position of the tumour rendered it impossible to ascertain positively whether or not it adhered at any point to the sheath of the vessels; and the apparent mobility of a large cervical growth can never altogether be depended on; for, even if it involve or be adherent to the vessels or their sheath, these, being loosely connected, move with the tumour on the more fixed parts. But in the face of these risks I felt warranted to operate, on the following grounds:—First, as I have already said, the simple character of the tumour made me feel secure that, though it might displace, press upon, or even adhere to the sheath of the great vessels and nerves, it would not absolutely involve them. Secondly, the absence of any engorgement of the veins of the neck on either side, or of any marked alteration in the arterial supply of the right side of the face, made me pretty sure that neither the internal jugular nor the carotid could be very closely or extensively involved. Whilst the

functions of respiration and deglutition being unimpaired, and no symptom of laryngeal irritation existing, rendered it equally clear that neither the vagus nerve, its branches, nor the phrenic, were as yet implicated.

Having thus satisfied myself that the tumour might be removed by an operation properly planned, and carefully and deliberately executed, I proceeded to determine the method by which it could be most readily and safely accomplished. The dangers to be apprehended were:—Hemorrhage from the arteries supplying the tumour, or, more likely, from the great veins returning the blood from it; the risk of air entering any of these large veins when divided; the risk of injury to the vagus or phrenic nerves; and the probability of meeting difficulty from adhesion of parts in the parotid region, where the tumour felt fixed; lastly, exhaustion of the patient from the necessarily tedious dissection and large exposed surface. To obviate these dangers as far as possible I determined to expose freely the whole surface of the tumour; to clear its edges; and, in doing this, to expose the anterior margin of the sterno-mastoid muscle, at the lower part of neck, so as to be able, if necessary, to compress the carotid; next, to divide the sterno-mastoid above and below, so as to leave the part adherent to the growth; to tie the external jugular with two ligatures, and divide it between them; and to pursue the same course in regard to all the larger veins passing towards the jugular or root of the neck, and to secure the larger arterial branches as divided. Ligature of the lower part of the common carotid, as a preliminary, with a view of diminishing loss of blood—which has been advised and adopted in the removal of tumours from the neck and face—I rejected as worse than useless, as not only incurring unnecessary risk to the patient, but as likely to lead to danger by inducing a false security in the operator, as its ligature could not control the retrograde hemorrhage from the free anastomosis superiorly; whilst the free incision along the sterno-mastoid enables the assistant to control the carotid trunk quite as effectually, should it be necessary. Besides, in such a dissection, wound of the great internal jugular vein is much more likely to occur than injury of the carotid; and the best means of avoiding either is to disturb the natural relations of the vessels as little as possible, and to dissect with the edge of the knife directed towards the deep surface of the tumour, whilst the assistant insinuates his fingers in the track of the dissection, so as to protect the vessels. I decided, after clearing the tumour

from the great vessels, to dissect the rest of the cervical portion from below upwards, so as to avoid injury to the phrenic nerve; and then to proceed with the dissection of the facial portion from above downwards and backwards, so as to leave the part which felt most fixed in the deep parotid region, and where I expected the largest vessels to enter the tumour, to the last. This plan I carried out, as detailed in the description of the operation, with the able assistance of my colleagues—Drs. Gillespie and Watson; and I had the satisfaction of removing entirely this enormous tumour, and so relieving my patient from what she and her friends had long regarded as a hopeless disease.

In a letter I have received from Mrs. Jepson, dated October 8th, 1863, she says:—"I am happy to inform you that I am in good health; the scars do not look bad; they are perfectly healed up, and gradually appear less."

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