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CASE OF OSTEO-SARCOMA OF THE LOWER JAW.

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HOUGH excision of the lower jaw has of late years been frently performed by various surgeons at home and abroad, I tter myself that the following case will be read with interest, ce the tumour which was the subject of it is, I have reason believe, the largest that has been removed by this operation. In the beginning of July I was requested by Dr Sibbald to amine a tumour which he was anxious to have removed, proled it could be done with safety to the patient. He told that, while making a professional visit at Coldstream, he l seen the unfortunate person in question, and learned the folring particulars of his case.

Between eight and nine years ago, Robert Penman, then years old, noticed a hard swelling of the gum on the outer e of the grinding teeth of the lower jaw. The swelling was painful, but gradually increased. When it attained the size an egg, he applied to a surgeon of the neighbourhood who racted three of the adjoining grinders. It then grew more idly, and having at length become so large as a double fist, uced him to repair to the Royal Infirmary of this city, where vas removed, *i. e.* cut off from the bone. The wound did heal, and the actual cautery was repeatedly applied in vain make it do so. After remaining eight months in the Infiry he returned home; but finding the tumour regularly and

rapidly increasing, he, two years afterwards, came again to Edinburgh, and consulted a distinguished operating surgeon, who declined making any attempt towards his relief. He went home with the fearful prospect of a certain, lingering and painful dissolution; and it was after *three years and a-half* spent in this miserable state that Dr Sibbald happened to see him. Though the tumour was then nearly three times larger than it was when the patient last quitted Edinburgh, Dr Sibbald felt persuaded that it was still within the reach of surgery, and therefore encouraged the young man to come once more to town, which he accordingly did.

Though prepared for something very extraordinary and frightful, I certainly was astonished at first sight of the patient. The representation prefixed to this paper may give some notion of what mere words are altogether inadequate to express.

The mouth was placed diagonally across the face, and had suffered such monstrous distortion as to measure fifteen inches in circumference. The throat of the patient was almost obliterated, there being only about two inches of it above the sternum, so that the cricoid cartilage of the larynx was on a level with that bone. When the tumour was viewed in profile it extended eight inches from the front of the neck. It completely filled the mouth, and occupied all the space below it, from jaw to jaw. The tongue was thrust out of its place, and lay between the teeth and cheek of the right side. The only portion of the jaw not implicated in the disease was the right ramus and base of the same side, from the bicuspid teeth backwards. The tumour, where covered by the integuments, was uniformly very firm, and for the most part distinctly osseous. The part which appeared through the mouth was a florid, irregular, fungous-looking mass of variable consistence, from which an alarming hemorrhage had occasionally occurred; and for the last three or four weeks there had been almost daily a discharge of blood to the extent of one or two ounces. Notwithstanding the great bulk of the tumour, the patient could move his jaw pretty freely in all directions. With the exception of the disease now described, Penman enjoyed good health. He was a tall, well made, though much emaciated, intelligent young man, and possessed uncommon fortitude.

Having carefully examined the tumour, I undertook to remove it; and this proposal meeting with the approbation of Dr Abercrombie and Professor Ballingall, was, with the assistance of the latter gentleman, carried into execution on the 7th of July in the presence of Dr Abercrombie, Professor Russell, Dr Hunter, &c.

The patient being seated on an ordinary chair, which pos-

ture, though inconvenient to myself, I preferred as being most conducive to the prevention of suffocation from hemorrhage during the operation, I made an oblique incision by running a sharp pointed knife through the lip, from the right angle of the mouth to the base of the jaw, where I proposed to divide it, viz. at the second bicuspid tooth, which had been removed the evening before. Having exposed the external surface of the bone at this part, I divided it partially with the saw, and easily completed what remained by means of the cutting pliers. The inferior coronary artery, which Dr Ballingall had prevented from bleeding by compressing it in the lip, was then tied.

I next made a long semicircular incision from the left angle of the mouth, in the direction of the base and ramus of the jaw, and terminating over the condyle. Having secured the facial artery, and two transverse branches of the temporal, I dissected down the large flap thus formed quite to the neck, so as to let Dr Ballingall feel the carotid lying in the muscular interspace, and ready to be compressed if there should be occasion. I then made another curved incision in a similar direction, commencing from the mouth, at such distance above the former as to include a portion of the cheek, which was firmly adherent to the tumour; and having dissected up this flap, divided the masseter muscle, so as to expose the whole external surface of the tumour. The next step was to divide the mucous membrane of the mouth. This rendered the tumour much more moveable, and enabled me to expose the coronoid process, divide the temporal muscle, and open the articulation at its fore part. I had then merely to cut closely round the condyle, and detach the pterygoid, mylohyoid, and other muscular connections.

The operation occupied twenty-four minutes; but all this time was not employed in cutting, as I frequently allowed a little respite, to prevent exhaustion from continued suffering. The patient bore it well, and did not lose more than seven or eight ounces of blood. His breathing was never in the slightest degree affected.

After placing a few folds of caddis in the great cavity left by the tumour, which weighed 4½lbs., I brought the integuments together on the left side of the face, in a triangular form, and retained the edges in contact by the twisted suture. The incision on the right side was dressed in the same way. Two or three turns of a roller were then put round the chin and head, so as to support the relaxed integuments.

The patient made no complaint of any sort after the operation. His pulse for the first two days was about 100, but soft, and gradually subsided to the natural standard. He slept well; had an appetite for his food, viz. beaf-tea and whey, which were

introduced into the pharynx through a funnel with curved tube, and performed his excretions regularly. The whole of the caddis was removed by the third day, when the patient sat up, and declared that he felt better than he did previous to the operation.

In concluding this case, I take the liberty of making a few general remarks on the mode of operating.

The patient ought certainly to be seated, since the blood will thus be prevented from running into his throat so as to delay the operation, or even render tracheotomy necessary to prevent suffocation.

There is no advantage in tying the carotid artery previous to commencing the extirpation. I was advised to do so in the case above related, but declined on the following grounds:— 1. It is unnecessary, since the only arteries which must and ought to be cut are the facial, some of its branches, and some branches of the temporal. 2. It must exhaust the patient, especially when the tumour throws an obstacle in the way, as in Penman's case, where there was hardly any space left for applying a ligature. Thus, in one of Dr Mott's cases, the patient was so much fatigued, as to require the delay of a day after the artery was tied. 3. It increases the danger, since it cannot be denied that there is always more or less risk of hemorrhage on the separation of a ligature from so large a vessel as the carotid. 4. It is of no use, since the anastomotic communications are so free, that a ligature of the trunk is not sufficient to arrest the flow of blood from its branches. Thus, in Dr Mott's case above-mentioned, the arteries which were cut during the operation required to be tied; and I have heard of a case where the operator, attempting to remove a tumour of the upper jaw, tied *both* carotids, and was still obliged to desist by the bleeding. 5. Any good effect that can be expected from *tying* the trunk may be obtained by *compressing* it after the integuments lying over it have been dissected off or divided.

For sawing through the lower jaw, I am quite sure that the chain saw, though recommended by a surgeon so experienced and judicious as my friend Dr Cusack, is not the best instrument. The one I used has a straight blade six inches and a-half long and half an inch broad, with a straight handle. It will be found very useful in many different operations on the bones. It is not necessary to saw through the whole thickness of the bone. A pretty deep groove being made, the cutting pliers, introduced into use with so much advantage to operative surgery by Mr Liston, easily complete what remains. In this way I divided the jaw in less time than would have been required for passing the chain saw round it.

The external surface of the tumour should be completely exposed before proceeding farther, since all the vessels which ought to be tied may then be tied in the first instance, and a free drain is afforded to the blood which oozes from the small branches. The mucous membrane of the mouth being next cut by a scalpel, carried from the tonsil outwards, the tumour is rendered much more moveable, and the surgeon will generally be able to free the coronoid process from its muscular connections. Should he fail in doing so, he ought to cut it across with the saw or pliers, and then depressing the tumour as far as possible, open the articulation on its fore part; after which he has merely to carry his knife close to the tumour, and divide the remaining attachments.

I think Dr Cusack is entitled to much praise for insisting on the propriety of opening the articulation from before, since a wound of the internal maxillary, or even the temporal is otherwise almost inevitable. Thus Mr Liston, in the case detailed in the last number of this journal, opened the joint from behind, and found it necessary to tie the common trunk of the temporal and internal maxillary,—in short, the external carotid. I do not mean to say that this proceeding was very dangerous to the patient, or very difficult to so expert an operator as Mr Liston. But I think that the great object of a surgeon should be to avoid cutting any thing which it is not necessary to cut. And I think that the patient in this case would hardly have suffered the severe secondary hemorrhage which is mentioned in the relation referred to, if the superficial vessels merely had been divided.

It appears also that in Mr Liston's case the ascending branches of the portio dura were cut, since the patient's eyelids were paralysed. Now this in all probability would not have happened, if the articulation had been opened from before.

P. S.—Penman is now quite well. His mouth is contracted to nearly the natural size, and his appearance is not disagreeable. He is daily improving in articulation, and can already express his wants pretty intelligibly. He has become much stronger, and is thinking of resuming his occupation.

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