# SOCIETIES' PROCEEDINGS

## ROYAL SOCIETY OF MEDICINE—SECTION OF LARYNGOLOGY

### May 3rd, 1935

*President*—W. M. MOLLISON, M.Chir.

**Chordoma of the Base of the Skull.**—GAVIN LIVINGSTONE.

Chordoma is the name applied to tumours derived from remnants of the notochord and it is a very rare condition. In 1926, when two papers were produced on the subject, only fifty-seven cases had been reported and in about half of these the tumour was in the sacral region.

The recognition of these tumours dates from the work of Müller, who confirmed the conclusions arrived at in 1858 by Luschka and Virchow. The histology and evolution of the tumours were further elucidated by Peyron in the early part of this century, and comprehensive reviews on the subject were written by Stewart in 1922, and by Stewart and Morin in 1926. A case was published in the *Journal of Laryngology and Otology* in 1926 by Syme and Cappell from Glasgow.

**Anatomical Considerations** (see fig. p. 853)

The notochord begins in what corresponds to the head end of the embryo and extends caudally as the trunk is developed; it is derived from the axial mesenchyme which proliferates from the front end of the primitive streak. The primitive notochord sinks into the endoderm, but separates from it at the cranial end. The disappearance of the notochord begins in the second month of fœtal life, the bodies of the vertebrae form around it and constrict it. The parachordal cartilages are transformed at a later date into basioccipital and basisphenoid bones.

The notochord persists in the intervertebral discs where it swells up and forms part of the central core. The notochordal element escapes envelopment by cartilage and bone in three places at the cranial end: (1) Between the cartilage and perichondrium of the dorsum sellae; (2) above the occiput towards the odontoid process; (3) between the base of the skull and pharynx. These elements usually disappear or else are quiescent. The consensus of opinion

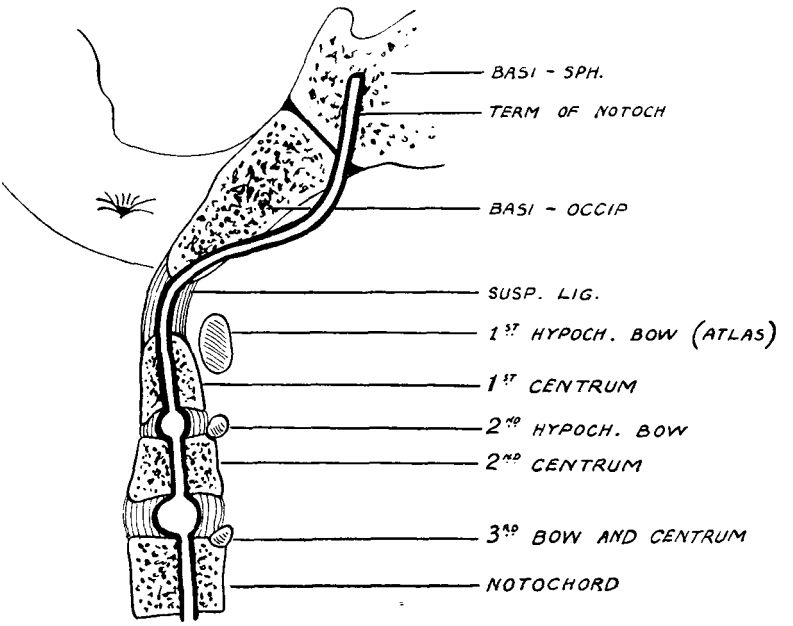


https://doi.org/10.1017/S002221510004189X Published online by Cambridge University Press

is that chordomata have their origin from these adventitious remnants at the cranial end of the body and not from the intervertebral disc remnant, growths of which are extremely rare.

The clinical picture of a chordoma depends on whether the growth extends upwards into the skull or downwards into the nasopharynx. The intracranial type perforate the dura and may cause pressure symptoms but do not invade the brain.

The present specimen was removed from a female patient, aged 28. She was referred by Dr. David, of Fyfield, Essex, to Mr. F. J. Cleminson, at the Middlesex Hospital, and I am indebted to Mr. Cleminson for permission to report the case. The patient




complained of slight discomfort in swallowing and of being "run down". A large tumour was found attached to the posterior wall and roof of the nasopharynx; it was not pedunculated. The surface was smooth and covered by mucous membrane and, on the lateral margins, slightly lobulated. The consistency was firm but not hard. An attempt to aspirate yielded a little gelatinous material. When taking a portion for section the mucosa stripped easily over the lower part. This section showed fibrous tissue only. Radiography did not show any erosion of the bones forming the pharyngeal vault or other abnormal signs.

In July, 1933, under a general anæsthetic, the soft palate was divided in the mid-line and a large portion of the growth exposed.



https://doi.org/10.1017/S002221510004189X Published online by Cambridge University Press

A further piece was removed and sent for examination. The pathologist reported "an ill-defined mucoid non-malignant growth". It was found to be impossible to shell out the tumour from its capsule because of adhesions and it was decided to implant some radium needles; two containing 2·5 mg. and three containing 1·5 mg. were embedded, with the silk threads brought out through the right nostril. These needles were left in position six days, which gave a total dose of 1,368 mg. hours. There was little operative disturbance and the tumour rapidly diminished in size and in seven weeks had disappeared. On further X-ray examination no change was noted and there was still no involvement of the base of the skull.

In April, nine months later, the patient returned complaining of pains in the upper part of the back of the neck and over the occiput, usually aching in character but occasionally acute. Examination of nose and sinuses revealed nothing abnormal and no recurrence was seen in the post-nasal space.

In June, two months later, the patient was admitted to hospital on account of a short history of morning vomiting and diplopia. She had also had vertigo, dysuria and tinnitus. These symptoms became worse and, on neurological examination, a diagnosis was made of a tumour of the base of the brain. There was no papilloedema; visual acuity was good; the optic fields and all eye movements were normal. The corneal reflex on the right was diminished and there was nystagmus, more marked to the left. Both labyrinths gave normal responses to cold caloric stimulation. All deep reflexes were exaggerated and a double plantar extensor response was elicited. There were no abnormal cerebellar signs apart from the nystagmus. The Wassermann reaction was negative and the blood-pressure 118/78. The vomiting and headache increased and the patient died, thirteen months after the insertion of radium.

*Post mortem appearances.* The convolutions of the brain were flattened and there was a marked indentation on the inferior surface of the pons, caused by a pedunculated tumour two inches in diameter growing from the basisphenoid. The underlying bone was eroded and replaced in part by soft hæmorrhagic material. The post-nasal space was macroscopically normal.

The histological picture was made up of large cells suggestive of "fat granular" cells; frozen sections showed these to contain doubly refractile lipoids. The stroma was œdematous, enclosing material which varied from groups of epithelial cells to an almost acellular collection of mucin. Hæmorrhages of all ages were seen and the vessels were well formed.

Chordomata have been divided into three types, depending on the stage of embryonic development.



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*Type* I.—The small tumours called by Virchow "ecchondrosis physaliphera". They occur in 2 per cent. of *post mortem* examinations, and are composed of the same type of cells as in the nucleus pulposus of the intervertebral disc.

*Type* II.—The malignant tumour in which active mucin-producing cells predominate and in which recurrences and metastases occur. The present case belongs to this group.

*Type* III.—The main feature in this type is the production of cells which resemble cartilage and the tumours are usually encapsulated and do not recur after removal.

The pharyngeal growths occur in younger people, cause more symptoms, and are more malignant than the sacrococcygeal type; the average length of life in the former type is three years, against seven years in the latter.

The interesting points in this case are the rapidity of growth and the sensitivity to radium. The dose given was not large but the visible tumour melted away. The growth in the basisphenoid did not receive an adequate dose and in a short time extended upwards into the skull.

A course of distant radium treatment followed by needle implantation should be tried before recourse to major surgery. Diathermy of a remaining nodule can be easily performed at a later date.

At the Middlesex Hospital, Mr. Blundell Bankart has a case of sacrococcygeal chordoma which was treated in 1930 with radium needles and since then with two courses of deep X-rays. The patient is alive and well, although there are some (?) secondary nodules in the skin. Sir Henry Newlands reports a case of chordoma which did not improve with X-ray treatment.

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**Tuberculoma of the Nasal Septum.**—MYLES L. FORMBY. Female, aged 59. Nasal obstruction for two months; right side worse than left. Has had sores in the nose for years and for the past six months has had slight bleeding. No pain. Flat granular tumour involving anterior part of the septum on the right side, blocking anterior nares. Left side, similar smaller projection towards floor of the nose. Wassermann reaction negative. A



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microscopical section shows chronic inflammatory tissue with giant cells of tuberculous type.

It is perhaps debatable whether I ought to have called this a case of tuberculoma or one of lupus of the nose. I called it one of tuberculoma because it resembled another case in which there was definite tuberculosis in both knees and an elbow-joint.

DISCUSSION.

HERBERT TILLEY said that at a meeting of the Section a few years ago the late Mr. Wharry had shown several cases of lupus which he had treated successfully by means of radium needles.* He (the speaker) thought that it would be well to try that method in the present case before adopting any radical procedures.

E. D. D. DAVIS said that he had had two such cases, in which he had completely excised the affected area, afterwards treated any recurrence by the galvano-cautery, and they did well. He had seen two or three cases of the kind treated by radium, but they showed burning of mucous membrane and increased ulceration. He recommended that these patients should be sent to a sanatorium and even have tuberculin treatment.

GAVIN LIVINGSTONE said he knew of a similar case in which the granuloma was in the right ethmoid region ; it had been treated with a surface application of radium and had rapidly diminished in size. The mucosa of the nose did not become atrophic. Unfortunately a tuberculoma of the brain had developed, and further treatment was useless.

**Persistent Epistaxis: Thrombocytopenia.**

—MAURICE SORSBY.

Female, aged 31, complains of persistent epistaxis. She has had bleeding from the nose since childhood. The attacks at first were of short duration and at long intervals, but eleven years ago she had severe attacks of epistaxis intermittently for several months. Cauterization led to marked improvement for a time. The attacks recurred, and the bleeding was particularly acute during pregnancy four years ago. The patient is still bleeding at frequent intervals, and sometimes loses large quantities of blood. She had to give up her housework because stooping, quick movements and fatigue bring on an attack. The bleeding points in the septum have been touched with caustics, galvanocautery, and diathermy, giving immediate but transient improvement. She is now being treated with calcium (Sandoz) 10 c.c. intravenously twice daily, followed immediately by the application of ultra-violet rays (Dr. F. Nagelschmidt). Since the present treatment was begun the pathologist (Dr. Himmelweit) reports that the blood-platelets have increased from 39,000 to 230,000 and the red cells from 2,880,000 to 3,760,000. The coagulation time has been reduced from 5 min.

* See *Proceedings*, 1927, xx., 1,402 (Sect. Laryng., 50).



https://doi.org/10.1017/S002221510004189X Published online by Cambridge University Press

15 sec. to 4 min.; and the bleeding time from 6 min. 40 sec. to 4 min. 10 sec. The spleen is not enlarged, and radiologically all bones are normal. There was no undue bleeding on a tooth extraction, and the menses are normal.

DISCUSSION.

ALEXIS TUMARKIN said that two years ago he had had a patient, aged 48, who had been bleeding from the nose since she was 14, and had had cautery and septal treatment on innumerable occasions. Her nose was full of black crusts; these she took out all at once and then the nose bled. She had a serious bleeding once a fortnight, and dripping of blood every day. In despair, he (the speaker) had tried radium, putting a 2 mg. needle into one side of the nose, and leaving it in two days. The effect in checking the bleeding was dramatic. The nose continued to bleed from the other side, and the patient had asked him to treat that side also in the same way. After waiting five months he had put in two needles for thirty-six hours; that was two years ago. She attended several times to report, and she never again had any troublesome hæmorrhage, though she was still troubled with crusts. He felt that if crusts could be prevented the case would be completely cured. He had tried a solution of bile in glycerine and alkali, and that had helped for a time, but afterwards the crusts had formed again.

**Polypoid Hæmangioma of Pharynx.**—MAURICE SORSBY.

A girl, aged 17, complained of increasing difficulty in speech; a year ago she had noticed that it was becoming thick and nasal. She was told that this was owing to nasal polypi. These were removed, but her speech grew progressively worse, becoming almost unintelligible.

A large polypoid mass was seen covering the larynx, and it was difficult to make out the site of origin. This became apparent when the head was thrown back during the operation. The mass was then seen to arise low down from the posterior pharyngeal wall. It was easily removed with a snare and the bleeding was stopped with the diathermy current.

*Histological report* (Dr. Himmelweit) "Polypoid hæmangioma. —*Pedicle:* Honeycomb-structure with numerous spaces full of blood. The lining cells are the same as those which compose the more compact parts of the tumour. They are endothelial cells with an oval nucleus and nucleolus. *Tumour:* The surface of the tumour is covered with squamous epithelium, which is œdomatous and infiltrated with a certain number of round cells."

DISCUSSION.

F. C. ORMEROD said that in 1926* he had had a case in which the whole of one tonsil was replaced by a cavernous angioma, and it had

* *Journ. of Laryng. and Otol.*, 1926, xli., 797.



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to be dissected out. The procedure was a very long one, as he had to tie sixteen vessels. The patient was a woman. At that date he could find only twenty-two such cases reported in the literature.

**Angioma of Fauces.**—M. VLASTO.

D.V., a boy, aged 5. Two years ago his mother noticed that he had "a peculiar blue vein in front of the left tonsil". The first medical report was made by Dr. Florence Edmunds, of Brighton, who writes as follows:

"I first saw signs of the angioma in September, 1934. It showed as a slight blueing of the soft palate on the left side. In October it was about the same size, but when I saw it in December it was much larger."

A consultant advised the immediate insertion of radium needles.

The boy was brought to me for a second opinion on *January 1st*, 1935. The diagnosis of cavernous angioma was confirmed. There was a complete absence of symptoms, and therefore I consulted Mr. Zachary Cope and Mr. Carter Braine as to the best way of dealing with the condition. We did not consider that any precipitate treatment was indicated, in view of the absence of symptoms and the duration of the angioma. Indeed, as the condition was so rare, no definite line of treatment could be decided upon. The insertion of radium needles would, we considered, involve a risk, and the prospect of severe hæmorrhage following electro-coagulation or diathermy had to be borne in mind.

We compromised by getting Mr. Shiells to make a painting of the throat condition so that we might have a standard of comparison in future observations.

DISCUSSION.

L. GRAHAM BROWN said the report he had received from radium workers was that they did not advocate the use of radium for cavernous angioma. His advice was to attack this growth by diathermy; it would enable the operator to control the hæmorrhage. Once a vessel was broken, the points could be quickly coagulated. He had recently dealt with an angioma of the orbit by this method.

ALEXANDER TWEEDIE said that he had a similar case which had been treated both with diathermy and radium, and the condition was partially controlled thereby.

DOUGLAS GUTHRIE asked whether it was not advisable to try first the effect of some coagulating substance, as employed in the treatment of varicose veins. The method was at least devoid of risk, and the technique was simple.



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