NASOPHARYNGEAL ANGIOFIBROMA

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Nasopharyngeal angiofibroma is an uncommon histologically benign, clinically malignant tumor found most often in adolescent males. In reviewing the literature, we received the impression that these cases were mostly reported in European and America than in this country.

It has been the privilege of very few men to see several of these interesting cases, and when larger numbers of cases are reported, often cases are included which may be open to dispute by reason of their occurring in woman, or in men beyond the usual age incidence.

The only large groups reported are those of Figi[1] and Hayes Martin and associates[2].

It is the latter, i. e., Martin and associates, who have attempted to lay down rather hard and fast rules for classifying this condition. In their study they made the following observations:

1) All hemoangiofibromas occurred in males. In five cases occurring in woman, on careful scrutiny the growths were found to be other types of tumor.

2) These tumors occur during the pubescent stage, usually at about 14.

3) Regression of the tumor sets in when maturity is reached-generally at from 20 to 25 years of age.

Thus it is true that the microscopic picture should assist greatly in the differential diagnosis, but owing to the fact that the taking of a biopsy is frequently attented by profuse hemorrhage it is often felt advisable to irradiate the tumor initially to lessen its vascularity. Figi[1] in his article admits that in some cases he is willing to base a diagnosis on the clinical appearance of the tumor, its course and response to irradiation therapy rather than to take a biopsy of the growth.

Seen under the microscope at different periods in their growth, these tumors, which are essentially vascular fibromas, show varying amounts of endothelial blood lackes and fibrous stroma. Fibroma located anywhere in the body tend to become less vascular and more fibrous as age increases. Thus the early and late microscopic observations are at variance. Necrosis following infection, ulcera-

tion and thrombosis alters the picture and sometimes renders diagnosis from the pathologists standpoint difficult. Often, especially in the past, these tumors have mistakenly cataloged under myxoma, sarcoma, giant cell tumor, etc.

Clinical Observations

Symptoms.——The early symptoms are those of nasal congestion and obstruction with more or less hemorrhage. The bleeding semetimes becomes an alarming complication. The voice becomes flat or dead in quality, and respiration and deglutition are impeded as the process advances. At a later stage, there is pain and mucopurulent discharge. When the growth has attained considerable size, the frog becomes well marked, the maxillary bones are separated, and exophthalmus becomes a promiment symptom. Aprosexia and drowsiness are often present.

If the growth extends upward it may encroach upon the cranial contents and give rise to such symptoms as paralysis, etc; this is followed in nearly every instance by death.

The foregoing symptoms increase in severity as the growth extends, untily the absorption of bony tissue is considerable, unless the tumor extends beyond the nasal and pharyngeal chambers, as into the cranial cavity. In this event the pressure necrosis of the bony tissue is not so great.

Examination shows the tumor to be a sounded mass of a pinkish or dark purple color. The veins are frequently varicosed, hence the examination by digital or instrumental aids should be done carefully, to avoid injuring them. The growth may project into the posterior nares, or its direction may be toward the antrum and other sinuses. Under finger pressure it is firm and elastic, and if small its base may be outlined.

Diagnosis.——The histologic resemblance to sarcoma is often so close that a differentiation is difficult, unless the age, sex and origin are such as to point to its fibrous nature. Sarcoma is rarely or never pedunculated whereas soft fibroma is frequently so. Hard fibroma are usually sessile.

Pathology.——The broad base of origin from which this tumor spings and which described so well by Brunner[3] is best referred to as the basal fascia or pharyngeal aponeurosis of the superior constrictor muscle, which blends with the buccopharyngeal fascia and the periosteum of the basilar portion of the occiput, upper two cervical vertebrae and the sphenoid bone. This vascular region and the presence of immature connective tissue in the midline, as claimed by some, no doubt contribute to the rapid growth of the tumor, as has been pointed out so often.

Some tumors reach a size of 10 to 12cm in diameter and may contain fragments of bone on their surfaces from eroded nearby structures. These are no metastatic transformation. Although some are reported, they are questionable.

Recurrences following incomplete removal are the rule. The return is rapid and the secondary growth is of large size (contrary to Ewing[4]).

Microscopic appearance.—Stroma with round or stellate fibroblasts and large endothelial lakes resembling the cavernous variety of hemangioma are apparent. This is the early, or soft type. There is also a later type which shows sclerosing changes, lessened vascularity hyalinization, a pseudocapsule and firm consistency. There is no elastic tissue (Grass and Wolbach[5]), and the vessels have no muscle in their walls. Areas in the same tumor vary. Immature fibroblasts frequently are so dense at to suggest sarcoma. Foci of lymphocytes and plasma cells may obscure the true picture. Fragmentation of endothelal wall by hyalinization may give rise to large numbers of giant cells, and fatty degeneration may accompany necrosis. Brunner[3] from his study of serial sections points out that the angiomatous vessels of the tumor communicate with veins of the surrounding normal tissue but not with the arteries. This may help to account for the frequent referral in reports of cases to the fact that ligation of one or both carotids did not seem to lessen the tedency of the tumor to bleed during manipulation (Munson[6]).

Treatment.—The various forms of treatment which have been used are causties, snare and operations. Small growths, especially if they are pedunculated, and those limited to the nasopharyngeal space, may be removed with a heavy snare, either directly or a coagulating current through the snare has been used after the preliminary insertion of radium seeds. When the growth is large and sessile, and has extensive imflammatory adhesions to the adjacent structures, it may be necessary to perform an external or more radicalo peration.

Report of Cases

Case 1.—H. M. a Korean youth aged 18, somewhat washed out in appearance from both loss of blood and lack of sleep, was admitted to our hospital on June 27, 1952. Two months prior to his admission he awoke with an obstructed nose and epistaxis on the right side. These symptoms became progressively worse, and in addition he complained of an increase in the amount of secretion from the nose and the nasopharynx.

Three days previously, he had a profuse epistaxis and the family physician had used an anterior pack of petrolatum gauze with temporary success.

Resumption of the bleeding sent him to one of Honjo's students, now, a Otolaryngological practitioner, and finally the patient was referred to Honjo.

None of these men apparently suspected the nature of the case, as conversation with them later on bore out.

The patient had measles, chickenpox and pneumonia during his childhood.

On admission the temperature was 36.8c., the pulse rate, 93 per minute, the respiratory rate, 20 per minute.

Inspection by anterior rhinoscopy revealed a mass lying alongside the inferior turbinate bone and slightly above. It was about 1 cm. from the vestibule. An ulceration about 0.5 in diameter was the site of the bleeding.

Posterior rhinoscopy showed a rounded mass covered with normal-appearing mucosa filling

almost the entire epipharynx.

Further exposure with a palate retracter after topical anesthesia revealed the mass as originating from the right ralut and upper posterior septal edge. It appeared to be about 3cm in diameter. There was a cleft separating it from the lateral wall, the soft palate and lower portion of the septum.

The left posterior choana was only partially occluded by a lobulation of the mass which extended around the septal edge.

The youth was put to bed in the hospital and administration of coagulants and calcium gluconate was begun.

During the next two days bleeding was minimal and infrequent, allowing an oppertunity for other examinations. Roentogenograms revealed clouding of all the sinuses on the right side, and blood test showed but a moderate degree of anemia. Physical examination revealed an apparently normally developed youth.

Under local anerthesia, examination by palpation was undertaken by the oral and posterior pharyngeal route and through the anterior naris, with combination of the two from time to time. Contrary to the usual case description in the litertuare of a firm, almost cartilaginous, tumor this was soft and easily reducible; so much so that any attempt at removal by grattage would have been impossible. The attachment was extremely broad and mainly to the roof of the nasopharynx. It apparently was pear shaped, with the base in the nasopharynx and the stem portion in the right nostril. A biopsy was taken, and the bleeding that ensued was brisk. It again was fairly well controlled by an anterior pack. The biopsy report confirmed our clinical suspicions. The pathologist defined the tumor as a fibroma with multiple simple endothelium-lined blood spaces covered by intact mucosa.

Four days after admission, extirpation of the growth was performed.

Case 2.—— K. M. a youth aged 21, was referred to Honjo by a Otolaryngological specialist, who amazed us by a tentative diagnosis of nasalpolys, and was admitted to our hospital on April 24, 1951, with the chief complaint of gradully increasing obstruction and sweling of the nose on the right side.

These complaints began in November 1950, prior to this date the patient was perfectly well. The discomfort at first was not severe and then gradually became severer, and in Feb. 1951, a definite nasal swelling was noticed. It was treated by cold applications, with some relief. Late in March increasing nasal obstruction was noted on the right side accompanied with profuse purulent nasal discharge.

Two days prior to his admission, because of the epistaxis, he first went to the Otolaryngological specialist.

The past medical, family and social history was essentially normal.

On admission the temperature was 36.5c., the pulserate, 92 per minute, the respiratory rate, 20 per minute.

Examination revealed a marked soft tissue swelling over the bridge of the nose extending over the right antrum. There was no fluctuation or local heat.

Intranasal inspection showed a growth lying alongside the medial and inferior turbinate bone on the rigth side.

It was about 0.5cm from vestibule, so that the nasal airway was very narrow. Careful posterior rhinoscopic examination revealed a tumor, which was smooth, round and covered with a normal appearing mucous membrane. It filled almost the entire epipharynx. Careful palpation for the tumor was elastic solid and firm, attached near the choanae in the pharyngeal vault. The attachment was exremely broad and mainly to the roof of the nasopharynx. A biopsy was taken, and the bleeding that ensued was brisk. The biopsy report confirmed our clinical suspicions, and the pathologist defined the tumor as a fibroma with multiple simple endothelium-lined blood space covered by intact mucosa (Fig. 1).

Five days after admission, the extirpation of the growth was performed.

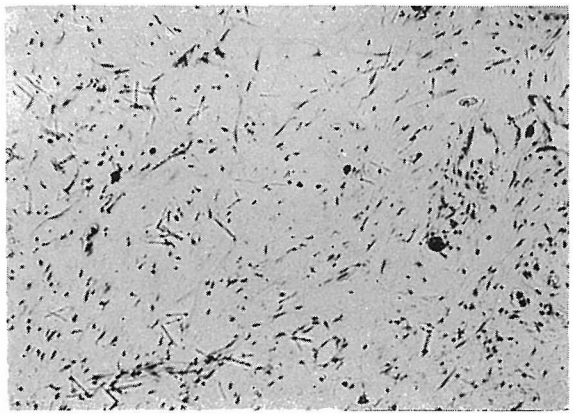

Fig. 1. 100×.

Summary

Nasopharyngeal fibroma is a relatively rare tumor restricted apparently to adolescent males. It regresses as maturity (20 to 25 years) is reached.

Epistaxis is the chief symptom and usually is serious.

References

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