ANGIOFIBROMA OF THE NASOPHARYNX

By Chee Choong Seng

This relatively rare tumour of the nasopharynx is also known as JUVENILE FIBROMA, vascular fibroma, bleeding fibroma of male puberty. As its name implies the tumour occurs chiefly in young males between the ages of 10 and 30 years, although Handousa (1954) reported 11 females amongst his 70 cases and Finerman (1951) reported a single female case.

It is a firm non-capsulated nodular pinkish tumour that may arise from the fibrous investments of the basi-occipital bone, the basisphenoid, medial pterygoid plates, ethmoid bones and anterior surfaces of the first two cervical vertebrae. The growth is sessile, solid and fixed, partly due to its wide base of origin and partly from adhesions, which develop as the result of infection, between it and the confining walls of nasopharynx. It does not metastasize or infiltrate; it spreads by direct pressure into the nasal cavities, maxillary antrum, pterygo-maxillary space and occasionally the base of skull. The tumour destroys by pressure necrosis.

The cause of this growth is unknown. Negus (1955) suggested that it arises from developmental inequalities at puberty whereby the periosteum in the area hypertrophies to an enormous degree. This explains the rarity in girls whose skull development usually ceases at an earlier age than in boys so that the periosteal changes are less likely to occur. Willis (1953) is of the opinion that most so-called fibromata in this region are really inflammatory or allergic overgrowths. Osborn (1959) considered it to be a malformation of erectile tissue and that their proliferative activity is largely the result of reparartive processes consequent upon haemorrhage. However the majority of authors considered it a true neoplasm.

Microscopically the growth is essentially a vascular fibroma, consisting of fibrous tissue which is very rich in blood vessels of two types, one being normal vascular channels, the other being vascular channels without elastic tissue or muscle in their walls. These features account to some extent for the very free bleeding of the tumour when interfered with. The absence of a capsule is another contributing reason for the haemorrhage. The cellular structure consists of a stroma of dense connective tissue with immature fibroblasts.

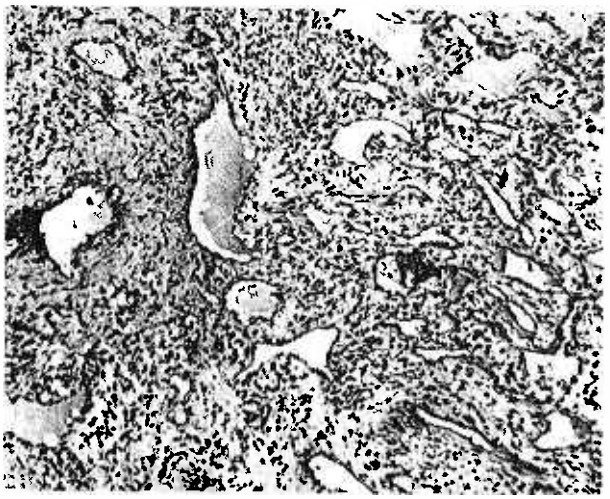

Fig. I

CASE REPORT I

A male Chinese patient, age 16 years, was referred to the E.N.T. Department on 10.3.1964 by a medical practitioner as a case of Nasopharyngeal carcinoma, the much more commener condition encountered among the Chinese here. He complained of having right nasal congestion and discharges during the last eight months, right sided headache and right ear tinnitus off and on during the past six months and spontaneous nasal bleeding, getting more frequently during the last one week.

On Examination, the patient looked pale and anaemic. He spoke with a high-pitched nasal tone. There were some blood clots seen in his right nostril but no obvious growth was detected in his nasal cavities. Both tympanic membranes were intact and appeared normal. No cranial nerve palsy was observed. Indirect postnasal space examination revealed a huge mass of smooth lobulated pinkish growth occupying the nasopharynx. No significant cervical lymph gland was palpable. He was then sent for X-rays of the chest and base of skull.

He returned two days later in a state of shock due to excessive epistases. His blood pressure was 90/60 and pulse rate 120 per min.

and the volume poor. He was given anti-shock treatment in the form of blood transfusion, sedation and antibiotics. The bleeding was controlled by anterior and posterior nasal packing. During his subsequent five months hospitalization, he had altogether 22 episodes of nasal bleeding and seven pints of blood had been given. His haemoglobin estimation fluctuated from 47% after severe bouts of haemorrhage, to 90% after adequate resuscitation was carried out. Biopsy of the growth was attempted twice, but because of the firmness of the tumour not enough tissue was taken and initiated further severe bleeding. Diagnosis of angiofibroma was made mainly on clinical grounds.

He was given a course of deep X-ray therapy (5500r) to the vascular growth between 6.4.1964 and 16.6.1964. Excision of the growth with diathermy under general anaesthesia via the Wilson trans-palatal approach was done on 9.7.64, three weeks after completion of irradiation. A mass of necrotic haemorrhagic growth was seen arising from the roof of post-nasal space, with slight extension of the growth to the posterior part of right nasal fossa. No blood was required during the operation as the blood loss was not excessive.

Post-operatively, there was a small fistular in the palate, probably due to poor healing power of the wound after the course of deep X-ray therapy. The fistular was repaired on 22.7.64 and the patient was discharged well without recurrence of growth on 22.8.1964.

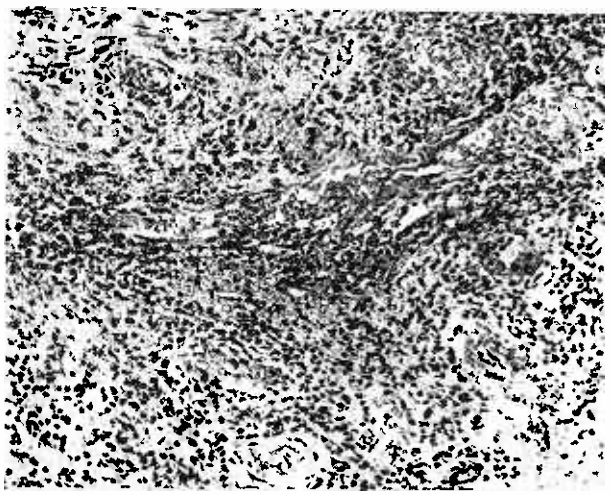

Fig. 2

CASE REPORT II

A Malay male patient, age 19 years was first seen at the E.N.T. outpatient department on 11.5.1964 with a history of bilateral nasal obstruction, nasal discharge, anosmia, progressive widening of nose and gradual bulging downwards of soft palate during the last eight months. He had occasions of slight nasal bleeding during this period.

On Examination he appeared rather small for his age and spoke with a nasal tone to his voice. There was a huge mass of soft reddish growth occupying the whole of his post-nasal space and extending forwards into the right nasal fossa pushing the nasal septum to the left, bulging the soft palate downwards and appearing in the oropharynx. There was no significant cervical lymphoadenopathy.

Biopsy of the tissue in the right nasal fossa was done on 12.5.64. The histopathologic report was as follows: "Section shows two types of tissue, one of which appears to be a vascular fibrous polyp, the other appears to be an ulcerated haemangioma, although one cannot exclude a pyogenic granuloma in the second type."

Radiological investigation of the paranasal sinuses revealed a large soft tissue mass in the right maxillary antrum and right nasal cavity. Marked bony erosion was present especially of the medial antral wall, turbinates and nasal septum. The lateral wall of the antrum was also eroded. The opacity extended into the right ethmoids and frontal sinus. Mucosal swellings was also seen on left side.

The X-ray report on the films of the base of skull was as follows: "huge growth in the post nasal space looks to be on both sides, eroding the hard palate and ethmoids—likely neoplasm".

The patient was admitted into the ward five days after the nasal biopsy because of severe bouts of epistases. He was repeatedly treated with nasal packing to control the bleeding supplemented by sedations and blood transfusion whenever the blood lost was excessive. During his stay in hospital, he had 11 episodes of nasal bleeding and 12 pints of blood were necessary to combat shock and to correct resultant severe anaemia. Tracheostomy was done on 10.6.1964 due to obstruction of his nasalopharyngeal airways by the tumour.

A course of deep X-ray therapy with a midline portal to the naso-pharynx (5177r) was given over a period of six weeks; the irradiation being completed on 17.7.64. Transpalated

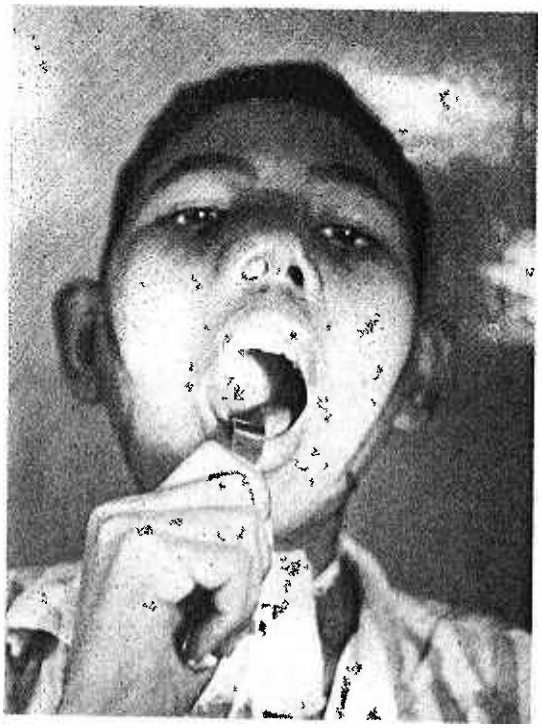

Fig. 3.

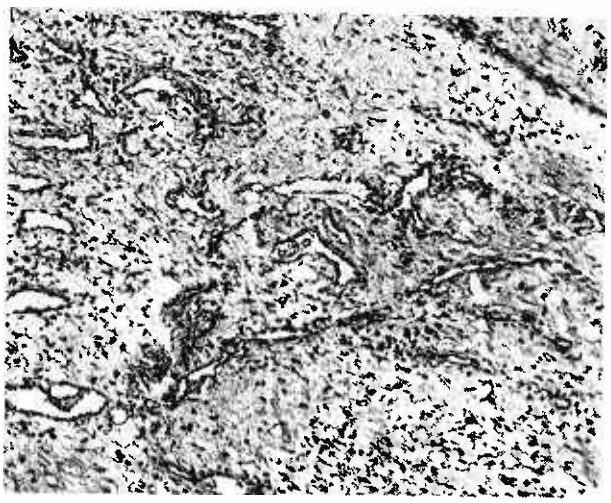

Fig. 4.

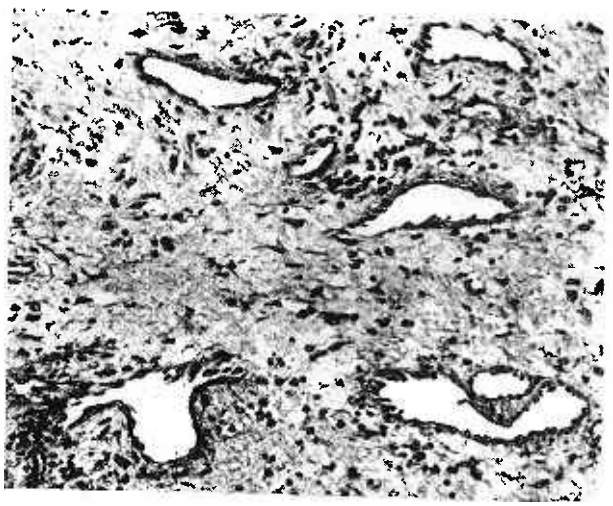

Fig. 5.

excision of growth was done on 30.10.64. The histological section of the growth showed "numerous vascular spaces within collaginous fibrous tissue which has a stratified squamous epithelium covering—consistant with an ANGIO-FIBROMA."

The patient's post operation was uneventful except for a small fistular in the palate which was covered with a dental obturator. He was discharged on 14.11.64 and post nasal space examination then showed some necrotic tissue on the right roof of the nasopharynx. He had another bout of slight nasal bleeding two months after the operation. His urinary 17-Ketosteroid estimation was 2.8 mgm. in 24 hours. (normal excretion 5-20 mgm. in 24 hours).

COMMENTS

The symptoms in both these young male patients of nasal obstruction, nasal discharge, nasal voice and recurrent massive nasal bleeding suggested the diagnosis of naso-pharyngeal fibroma. Subsequent histological sections confirm the correctness of the diagnosis. In case II, the growth is much more advanced and has extended into the nasal fossa, the paranasal sinuses and the oropharynx, widening the bridge of the nose and bulging downwards the soft palate. One would therefore expect surgery to be more difficult and the prognosis worse. The Histological picture shows the prominence of the angiomatous elements with abundance of thin-wall sinusoidal channels devoid of muscular coat and which are incapable of contracting. This accounts for the more profused bleeding which was more difficult to control and required more blood replacement. In case I, the fibrous elements predominated and blood vessels were better developed so that bleeding was not so profused and more easily controlled by nasal packing.

In both cases a similar line of treatment was carried out. Both cases were given a course of deep X-ray therapy over a period of six weeks, followed by diathermy excision of growth via Wilson's transpalatal approach. The aim of pre-operative irradiation is to reduce the vascularity and progress of the tumour so as to render surgery easier, though one has to be aware of the possible effects on the growing bones of the face of these young patients. In case II, surgery may not be complete due to the large size of the

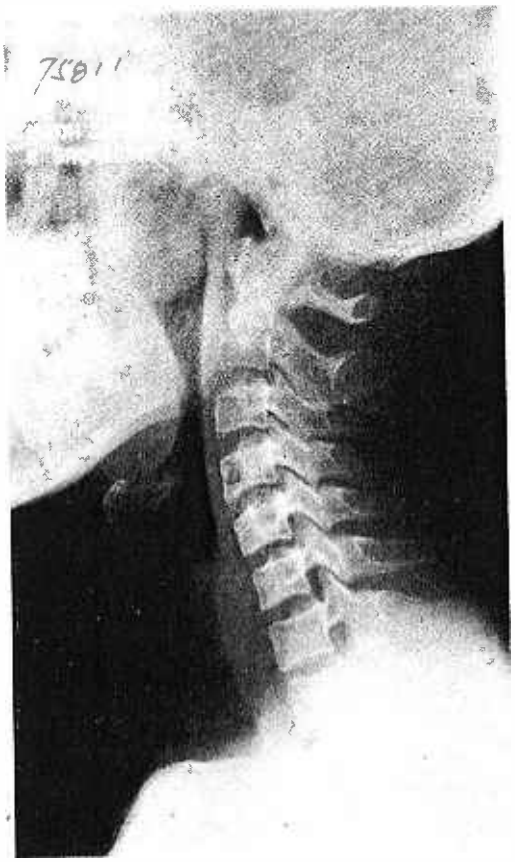

Fig. 6.

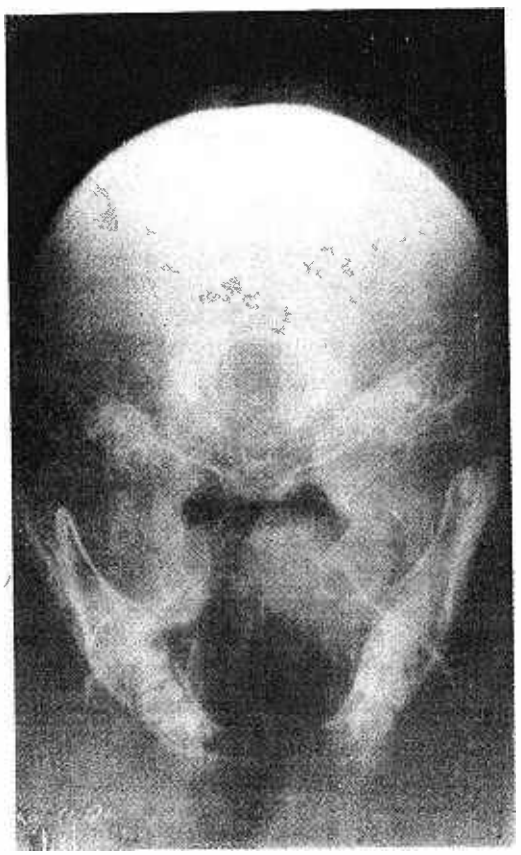

Fig. 7.

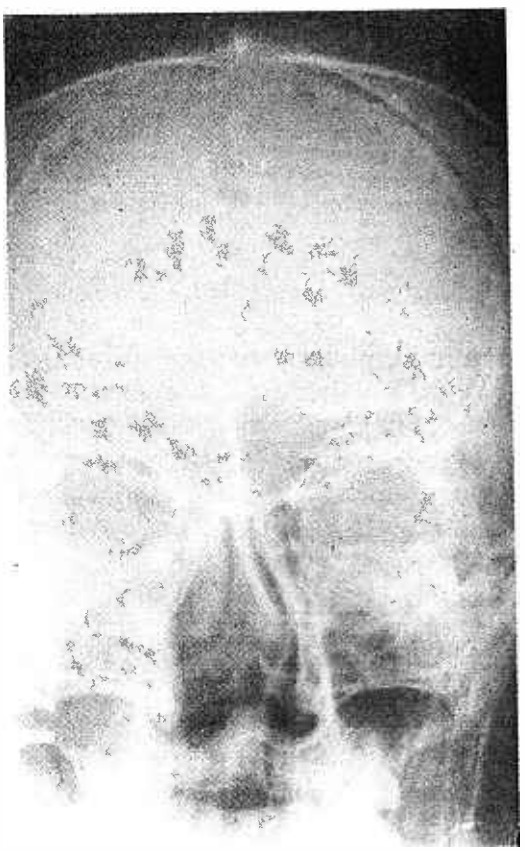

Fig. 8.

tumour and its many attachments and extensions into the neighbouring structures. This may have accounted for another episode of nasal bleeding two months after surgery.

Spontaneous regression after reaching the age of 25 years has been accepted by some and denied by others such as Handousa. In both these cases with fairly rapidly growing tumours and repeated severe and near exanguinating haemorrhage, it would be unwise to rely on a conservative type of treatment, even though surgery is considered hazardous. Bleeding can usually be controlled by pressure and packing once the tumour has been removed.

Ligation of the external carotid arteries does not reduce the elements of risk in surgery as the angio-matrons vessels of the tumour communicate with the veins of the surrounding tissues and not with the arteries.

Sexual undevelopment believed to be a feature of these tumours is observed in both cases. Puberty is retarded as evidence by the absence of secondary sexual characteristics such as pubic hair, axillary hair and beard and the high-pitched voice of the patients, though their genitalia are of normal appearance and testes descended.

ACKNOWLEDGEMENTS

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