Smooth-Muscle Tumours of the Upper Respiratory Tract

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SUMMARY

Tumours arising from the smooth muscle of the upper respiratory tract are extremely rare. Three cases occurring in South African Bantu are reported; one, a leiomyosarcoma of the larynx, the second a vascular leiomyoma of the nasal cavity, and the third a leiomyoma of the larynx. The literature is reviewed.


Although leiomyomas are uncommon outside the uterus and the gastro-intestinal tract, they may occur in the skin and subcutaneous tissues, the lung, kidney, broad ligament, mesentery, omentum, retroperitoneum, mediastinum, major arteries and veins, and orbit. Malignant smooth-muscle tumours are also uncommon in the soft somatic tissues. Stout and Hill reported 35 such tumours in the skin and subcutaneous tissues. Recorded at the Armed Forces Institute of Pathology are 462 leiomyosarcomas, of which 125 (27%) arose in soft tissues; the distribution was: retroperitoneal 76, deep tissues of the extremities 23, subcutaneous 10, omental and mesenteric 8, in the venous system 3, in the abdominal wall 2, orbital 2, mediastinal 1. The highest incidence of leiomyosarcomas occurs between the fourth and sixth decades, but Yamopoulos and Stou have described 9 cases in children under 16 years of age.

Both benign and malignant tumours of smooth muscle are rare in the upper respiratory tract. The Registry of the Armed Forces Institute of Pathology contains records of only 6 cases of leiomyomas of the upper respiratory tract. These tumours were found in the nasal cavity, the larynx, the skin of the nose, the hypopharynx and the trachea. Leiomyosarcomas of the larynx are extremely rare. Eggston and Wolff mention 2 cases, in 1 of which a laryngectomy was performed. Single cases have been reported by Kawabe, and by Amendolea, and we are aware of a patient treated by laryngectomy by Kay who has survived for over 3 years. An interesting case was recorded by Jackson and Jackson —the tumour originated in the oesophagus and involved the larynx. The authors believed this to have been a leiomyoma that underwent sarcomatous change. According to Kawabe et al., in 1969 there were 7 cases of leiomyosarcoma of the nose, paranasal sinuses and nasopharynx in the literature. One of these, reported by Pimpinella and Marquit, commenced as a 'vascular bleeding lesion in the nasal cavity' which recurred 14 years after excision.

CASE REPORTS

Case 1

A Bantu man, aged 40 years, presented with hoarseness and dyspnoea of 2 months' duration. Indirect laryngoscopy showed a mass, 2 cm in diameter, attached to the right vocal fold near the anterior commissure. There was no cervical lymphadenopathy, and chest X-ray examination and routine blood investigations were normal. The mass was demonstrated on a laryngogram (Fig. 1). Biopsy showed the features of a leiomyosarcoma. A laryngectomy was performed, and histological examination of the whole tumour confirmed the diagnosis of a leiomyosarcoma within the laryngeal skeleton (Figs 2 and 3). The patient recovered uneventfully and remains well 1½ years after the operation.

Fig. 1. Laryngogram showing tumour lying centrally in the larynx.

Case 2

A Bantu woman, aged 42 years, complained of epistaxis from the right nostril. Small recurrent bleeding episodes had occurred almost daily during the previous 3 months. She was hypertensive, and an apical systolic murmur and loud aortic second sound were heard. A lobulated tumour, 1 cm in diameter, was seen in the right nostril; it was attached by a pedicle to the anterior end of the inferior turbinate. The surface was ulcerated and bled easily. The tumour was excised and the base was cauterized. Histological examination of the tumour showed the features of a vascular leiomyoma (Fig. 4). There has been no recurrence 2½ years after the excision of the tumour.

*Date received: 15 January 1973.
Case 3

A Bantu woman, aged 40 years, presented with hoarseness, dysphagia and a 'choking' feeling. Indirect laryngoscopy showed a pedunculated mass, 1.5 cm in diameter, lying in the laryngeal vestibule. A general anaesthetic was administered and during intubation by the anaesthetist, the tumour, a round fleshy mass, was avulsed from its pedicle attachment to the right ventricular fold. The pedicle and base of the tumour were excised. Microscopic examination of the specimen showed a markedly oedematous and mildly inflamed spindle-cell lesion resembling that seen in case 2. Special stains showed longitudinal myofibrils in some cells, indicating an origin from smooth muscle. No evidence of malignant neoplasia was seen. The patient is well and without recurrence 6 months after the operation.

DISCUSSION

There are two common varieties of leiomyoma: 19

Superficial leiomyomas: These are composed almost entirely of interlacing bundles of smooth-muscle cells that are probably derived from the m. arrectores pilorum in the skin.

Vascular leiomyomas: These appear to arise from the smooth muscle of small blood vessels. They are vascular and may be richly innervated. They rarely grow to a large size, and may be solitary or multiple. There appears to be no clear-cut distinction between vascular leiomyomas and venous haemangiomas, so that the name must be selected according to the amount of smooth muscle associated with the tumour vessels. The vascular leiomyoma can be distinguished from the haemangiopericytoma by the presence of myofibrils within spindle-shaped cells in the leiomyoma, and by the pattern of reticulin fibres parallel to the long axis of the smooth-muscle cells. The cells in a haemangiopericytoma are usually more epithelial in appearance, with a different reticulin pattern of a basket-weave arrangement around vascular spaces, and there are no myofibrils.

Cytological criteria for the distinction of benign from malignant smooth-muscle tumours are not always reliable. 18 When doubt exists, size and mitotic index are valuable diagnostic aids. Stout and Hill, 1 in their review of leiomyosarcomata, state that tumours occurring in different parts of the body may have different growth and behaviour patterns. Corscaden, 14 when referring to uterine leiomyosarcoma, stated that the cellular pattern is of taxonomic value but of little prognostic value, a more reliable test of malignancy being invasion of myometrium.

It is therefore difficult to formulate general statements about the treatment of leiomyosarcomata. Irradiation seems to have little effect on these tumours, 13 and it would seem that complete removal of the tumour with an adequate margin of normal tissue is the proper procedure. The question of a partial laryngectomy or laryngofissure as being the surgical approaches to leiomyosarcoma of the larynx, must remain in doubt until the malignant potential of these tumours in the larynx is fully evaluated. Metastases, when they do occur, do so most commonly by the bloodstream to the lungs. Nineteen of the 35 cases reported by Stout and Hill 1 metastas-
sized to the lungs, and 4 of the cases had regional lymph node metastases.

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REFERENCES

An Inquiry Into the Exchange of Information Between Institutional and Field Health Services

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SUMMARY

A 3-phase study project is described in an effort to determine the effectiveness or otherwise of liaison and communication between institutional and field health services. Weak areas are highlighted and constructive suggestions made to remedy these defects, within the broad framework of day-to-day work, administration and basic and post-basic training.


The Public Health Nurse Discussion Group, Cape Town, resolved in 1971 to undertake a preliminary inquiry into the exchange of information between institutional and field health services. In so doing the Group hoped not only to increase its own knowledge of the present state of affairs, but also to stimulate the interest of other members of the health team. The possibility of further inquiry or even constructive action could not be ruled out.

The inquiry was divided into three predetermined and clearly defined sections:

Phase I: This took the form of a questionnaire† to nurses working in the Public Health Services of the City of Cape Town, Cape Divisional Council, Industry and the Day Hospital Organization. The Community Psychiatric Sisters, although hospital based, were nevertheless included. An explanatory letter† accompanied the questionnaire and recipients were asked to return the information by 31 March 1971.

The object of phase I was to determine the extent of contact between the various field nursing services themselves and between these services, the hospital and other agencies.

Phase II: This section of the project took the form of a workshop for nurses only, held as a special evening meeting on 19 July 1971. The one hundred and twenty participants who attended this workshop by invitation represented the Public Health Nursing services and all categories of hospital nurses, including the nurse in training.

The object of phase II was to discuss a series of statements† formulated to promote discussion on health services and communication. These statements were the outcome of discussion by the Public Health Nurse Discussion Group Committee who considered them the most likely to promote debate.

Phase III: This final phase was a further workshop for representatives from the nurses who had attended workshop I in phase II, and representatives from the medical and paramedical professions. All 50 participants attended the workshop by invitation only on the afternoon of 22 September 1971.

†Study Project conducted by the Public Health Nurse Discussion Group, Western Province Branch of the South African Nursing Association, 1971.
†All appendices referred to in this article have been published in the S.A. Nursing Journal, June 1972, pp. 22 and 23.