# Tumor of the Neck

## Report of a Case with Leiomyoma and Literature review

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Leiomyoma, smooth muscle tumor, is rarely seen in the head and neck region, even though not uncommon in the genito-urinary system and the gastrointestinal tract. Thomas and Fine (1960) reported only one case with leiomyosarcoma arising from the right internal jugular vein.

This paper presents one case with angiogenic leiomyoma in the left side of the neck, and the review in the available literatures and some discussion are made.

## CASE REPORT

M.H., a 29 years old male, Japanese, was admitted to Yamaguchi University Hospital, Otolaryngological Ward on November 15, 1965, because of a round nontender mass in the neck on the left side. That mass was first noticed about 3 years ago but remained as it was, because he never had any notable pain or distress, or any difficulty in swallowing or breathing. No any restriction of bending his neck to any direction.

There was no notable description of any other kind of malformation or serious disease in his past history except that he was once said to be "questionable pulmonary infiltration" 5 years ago on the annual physical examination, which also remained as it was without any treatment for it. Later he was married and has one healthy baby.

Physical examination on admission showed a normally developed and normally nourished male patient was in no acute distress. Eyes, ears, nose and throat examination were negative. Normal submandibular gland and normal partoid gland were demonstrated by sialography. In the left side of the neck, there was remarkably protruded round mass contour at the left trigonum carotinum seen. There was neither discoloration of the skin nor superficial vessel engorgement over the lesion. The mass was a small hen-egg sized, round smooth surfaced, elastic hard; also showing it well moved back and forth, but not up and down under the sternocleidomastoid muscle. (Fig. 1)

Pulsation of both superficial temporal arteries was well palpable normally and synchronously.

Routine blood examination and urinalysis were within normal limits. Serologic test for syphilis was all negative.

On November 16, removal operation of the mass in the neck was performed under endotracheally intubated general anesthesia. Skin incision was made on the mass along the lower margin of submandibular bone arch. Beneath the platysma, the mass appeared to be well separated from the surrounding connective tissue and muscle by a fibrous capsule. A bundle attachment was observed from the anteriorsuperior-inner surface of the mass to the tortuous facial vein, which was cut after the double ligation. The operation wound was primarily closed after confirming no more bleeding. The removed mass (Fig. 2) was entirely encapsulated, oval in shape, measured $3.9 \times 3.1 \times 2.8$ cm in size; yellowish grey in color, elastic firm in consistency. The cut surface was elevated slightly and variegated, containing hemorrhagic, with fibrous network structure. (Fig. 3) Histopathological diagnosis was the leiomyoma probably originated "angiogenic" with the finding of 1) dominant fibrosis in the tissue, partly changing its proper pattern; however, 2) filamental structure like the myofibril in the cytoplasma of the tumor cells, and 3) stained "yellowish" in the van Gieson preparation. (Fig. 4 and 5)

Postoperative course was uneventful. He has been in complete health for last 2 years and half.

## COMMENTS

Myoma was classified and nominated by Virchew in 1854. In 1864, later Zenker divided it and named them as 1) leiomyoma, i. e. smooth muscle tumor, and 2) rhabdomyoma, i. e. striated muscle tumor.

It is usually a localized, nodular and well encapsulated.

Its surface might be even or uneven like a gyrus. Consistency may be firm to hard. The size of the mass ranged from rice corn gross to a head size. The color of the cut surface is greyish to thin red-greyish, with fine to coarse reticular (network) structure. Generally speaking, the leiomyoma has relatively poor vascularity in the mass. However, some of them have abundant of the blood vessel or the lymphatic vessels; these are called as haemangiomyoma, and/or as lymphangiomyoma.

The predispositions are oftenly seen in the uterus and gastro-intestinal tract. As shown in the table 1, data of statistical review from Cumulated Index Medicus for the 3 years period, leiomyoma occurred most frequently in the genito-urinary system, and the next is digestive system. Those two parts

occupied 86 % to 91.3 % in occurrence.

Table 1. Occurrence Rate in Various Organs
—Literature Review on Leiomyoma in Cumulative Index Medicus—

| | 1963 | 1964 | 1965 (1-5) |
|---|---|---|---|
| Genito-urinary system (Uterus, Ovary) | 40 | 82 | 36 |
| Digestive system | 22 | 42 | 15 |
| Vena cava (Vascular) | 2 | | 1 |
| HEAD & NECK | | | |
| Ocular system | 2 | 1 | 1 |
| Oral cavity | | 1 | |
| Tongue | 1 | | |
| Palate | | 1 | |
| Cheek | | 1 | |
| Skin | 2 | 7 | 1 |
| Lower extremity | 2 | | |
| | 72 | 135 | 54 |

In the other word, there is rare incidence in the head and neck region, previously reported in the ocular system, oral cavity, tongue, palate, and cheek.

Angiogenic leiomyoma and angiogenic leiomyosarcoma in the literature in the world were reviewed by Thomas and Fine (1960), adding their cases.

Also, Hachisuka et al (1962) reported and added their one case.

According to those articles, angiogenic leiomyoma and leiomyosarcoma are most seen at the lower extremity and vena cava inferior (Table 2).

Table 2. Angiogenic Leiomyoma and Leiomyosarcoma
(Hachisuka, et al, 1962)

| | |
|---|---|
| Lower extremity | 11 |
| Upper extremity | 4 |
| Vena cava inferior | 10 |
| Lower extremity | 3 |
| Lung | 1 |
| Basilic vein | 1 |
| Int. jugular vein | 1* |
| | 31 |

In the head and neck region, only one case with leiomyosarcoma in the right internal jugular vein demonstrated by Thomas and Fine will be reviewed here for good reference.

Their case was a 27 year-old white male, first noticed a painless mass in the right side of the neck in October 1957, in association with an acute flare-up of chronic otitis media. He was treated with antibiotics, and the ear symptoms subsided, but the mass persisted.

That was a large, firm, rubbery lobulated mass, measuring 4 × 4.3 × 3 cm, under the sternocleidomastoid muscle, fixed deeply but not superficially. It did not involve the thyroid, and no other masses were palpable. On biopsy a diagnosis of sarcoma was made; the precise nature of the tumor was in doubt. A radical right neck dissection was performed. The mass was adherent to and protruding into the internal jugular vein, slightly compromising its lumen. Microscopically, the tumor involved the wall of the internal jugular vein. Postoperatively, deep roentgen therapy, 3000 R being delivered to the tumor area over a period of 3 weeks was given. But, ten months later, he died of multiple lung metastasis. Autopsy, however, revealed no tumor at the site of the primary tumor appeared better differentiated than did the primary.

Differential diagnosis of the neck tumor or the swelling of the neck is actually needed in order to do appropriate management, but not so easy always.

Table 3. Neck Tumor

| | | |
|---|---|---|
| A. Bnign tumor | | |
| | 1. Cystic tumor | 1) Simple lymphagioma |
| | | 2) Cavernous lymphangoma |
| | | 3) Cystic lymphangioma |
| | | 4) Simple haemangioma |
| | | 5) Haemocystoma |
| | | 6) Atheroma |
| | | 7) Mucocystoma in the thyroglossal region |
| | 2. Non-cystic tumor | 1) Lipoma |
| | | 2) Fibroma |
| | | 3) Neuroma |
| | | 4) Osteoma |
| B. Carotid tumor | | |
| C. Teratoma | | |
| D. Malignant tumor | | |
| | 1. Skin cance | |
| | 2. Branchial cancer | |
| E. Malignant tumor of the cerrical lymphnodes | | |
| | 1. Leukemic lymphnode swelling | |
| | 2. Lymphgranulomatosis (Hodgkin's disease) | |
| | 3. Lymphsarcoma | |
| | 4. Reticulosarcoma | |

(Translated from Nippon Jibi-inkoka-Zensho, Vol. 4, No. 1, 1953)

In our case, tuberculous lymphnode enlargement was first considered by surgeons because of his previous history suggesting pulmonary infiltration. In other way, branchial cyst was considered also. Moreover, the carotid body tumor might be able to be ruled out because of its non-tender smooth round-oval mass at the triangle region of the carotid vessels, which showed good movability toward back and forth easily, but not movable up and down.

Many and various kinds of diseases in Table 3 and 4 must be well considered in mind and ruled-out in the case with a neck tumor or swelling of the neck.

Table 4. Swellings of the Neck

(Arranged from: E.M. Skolnik, et al; Arch. Otolaryng., 81 (2): 150, 1965)

| | | | | |
|---|---|---|---|---|
| 2,348 cases with Neck Swelling | 1,178 (50%) Neo-plastic- | 786 (33.5 %) Malignant (metastatic) | | |
| | | 187 (7.8 %) Malignant (Primary) | Thyroid | 82 |
| | | | Hodgkins | 56 |
| | | | Salivary gland | 48 |
| | | | Parathyroid | 1 |
| | | 202 (8.7 %) Benign | Salivary gland | 123 |
| | | | Angioma & Lipoma | 41 |
| | | | Neural- | 20 |
| | | | Hygromas | 10 |
| | | | Aneurysma | 4 |
| | | | Carotid body | 2 |
| | | | Parathyroid | 2 |
| | 873 (38 %) Non-neoplastic Non-inflammatory | | Thyroid disease | 710 |
| | | | Thyroglossal | 62 |
| | | | Branchial | 30 |
| | | | Diverticula | 20 |
| | | | Salivary gland | 15 |
| | | | Dermoid | 11 |
| | | | Lymphangioma | 3 |
| | 291 (12 %) Inflammatory | | Nonspecific lymphadenitis | 110 |
| | | | Tuberculosis | 58 |
| | | | Infectious mononucleosis | 28 |
| | | | Peritonsillar abcess | 23 |
| | | | Submaxillary sialadenitis | 20 |
| | | | Others | 58 |

## SUMMARY

Leiomyoma of the head and neck region is rare.

A case with angiogenic leiomyoma in the neck was reported; and review of literature on leiomyoma and leiomyo-sarcoma was made. Also, some comment on the differential diagnosis of the neck tumor was made.

## REFERENCES

1) Thomas, M.A. and G. Fine: Leinomyosarcoma of veins. Report of 2 cases and Review of the literature. *Cancer*, **13** : 96-101, 1960.
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6) Botting, A. J., et al: Smooth Muscle Tumors in Children. *Cancer*, **18** (6): 711-720, 1965.
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Fig. 1. Round Swelling and mass in the left neck. (Leiomyoma in the neck)

Fig. 2. Gross appearance of the removed mass. Well encapsulated, short-oval, solid mass measured 3.9×3.1×2.8 cm in size; with a bundle.

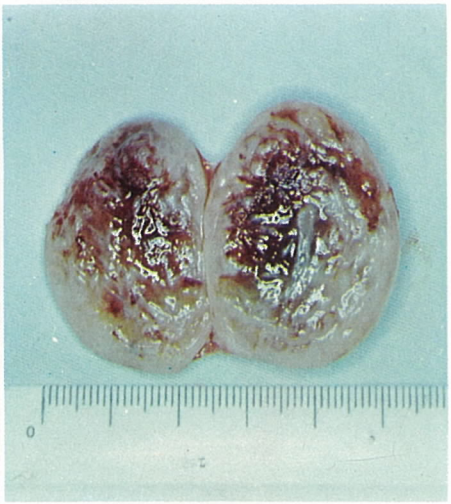

Fig. 3. Cut surface of the mass, lining with thin fibrous capsule, yellowish grey in color, elastic solid parenchymatous, fibrous network structure with rather abundant of the flow of blood.

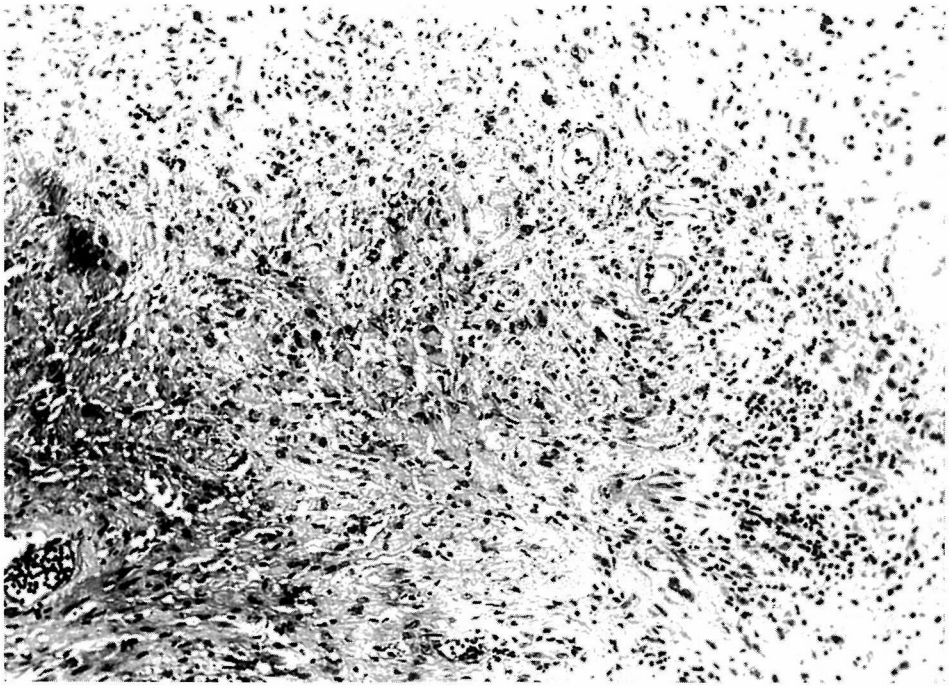

Fig. 4. Microscopic photograph (Hematoxin and eosin stain).

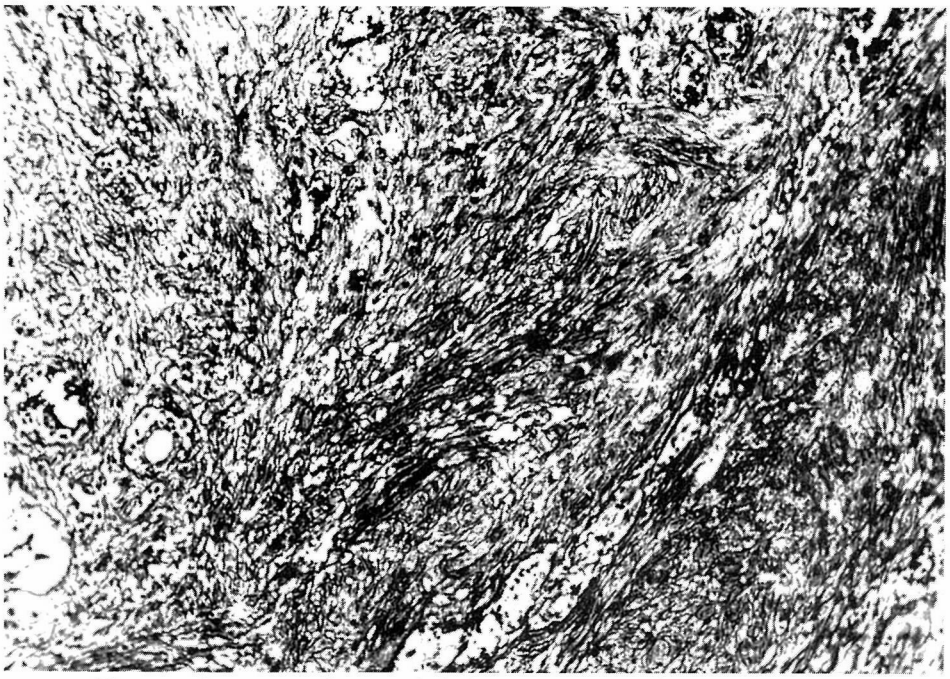

Fig. 5. Microscopic photograph (Silver impregnation for reticulin stain).