Neurinoma of the Parapharyngeal Space

Keisuke MATSUMOTO and Masaaki MIYAHARA
Department of Otolaryngology,
(Director: Prof. S. Honjo)
Yamaguchi University School of Medicine, Ube, Japan
(Received July 30, 1968)

Although it is well known that neurinoma is the commonest as acoustic tumor in our practice, this tumor is rarely encountered in the parapharyngeal space.

Therefore, this paper presents an interesting case of parapharyngeal neurinoma which first suspected as a malignant lesion of the right palatal tonsil.

REPORT OF CASE

F.K., a 54 years old housewoman. This patient had been asymptomatic until four years before admission when she began to have a vague feeling of fullness in the throat, except for difficulty in swallowing, impaired speech and sore throat. At the beginning of January in 1968 she noticed that the right palatal tonsil had developed slowly and painlessly. On February 3, 1968 she was admitted to our clinic as a transfer from another hospital with the presumptive diagnosis of a malignant tumor of the right palatal tonsil.

On admission, general physical examination revealed essentially negative. The blood pressure in millimeteres of mercury was 158 systolic and 88 diastolic and body temperature was 37.0°C. The usual laboratory examination, including studies of the blood, gave normal results. Local examination disclosed extreme prominence of the right palatal tonsil as shown Fig. 1. It was firm and bulged near to the median line of the postpharyngeal wall as if occurring from the right palatal tonsil and an induration with nontender seems to be palpable just behind the tonsil. In addition, any mass was not palpable in the right cervical region, but a slight swelling of the right submandibular region was noted.

On February 5, an initial biopsy of the tonsil was done and then four times of repeated biopsies were carried out, however all biopsy specimens as shown Fig. 2 revealed inflammatory changes associated with necrosis, no evidence of malignant lesion and even tonsillar tissue was not seen at all in these specimens.

Operation and Course; on February 7, total removal of a bulge, which was considered as the palatal tonsil, was done under general anesthesia and soon it was brought to dept. of clinical pathology due to microscopic examination, but at last the tonsillar tissue was not found as well as results of pre-biopsies. After removal of the bulge, another white bulge appeared in the operative field, just

the retrotonsillar region as Fig. 3.

After separating the palato-pharyngeus muscle and pharyngeal constrictor muscle, non anticipated and relatively large tumor began to be noticed and total excision of the tumor was smoothly done from oral route without a vertical incision and elevation of the soft palate. This tumor was surrounded by the stylopharyngeus muscle and palatopharyngeal muscle in the upper side, ramus of the mandible in the lower side, the stylo-glossus muscle in the lateral side and midline of postpharyngeal wall in the inner side. The region, which the tumor occupied, was so-called the parapharyngeal space as shown Fig. 4. The fresh specimen as shown Fig. 5, which was roughly pear shaped, measured $5.5 \times 4.2 \times 2.0$ cm. It present somewhat irregular surface, thin yellowish in color and moderately firm consistence. Cut section through the center revealed parenchymal and gelatinous in nature especially central area as shown Fig. 6. On microscopic examination, the outstanding histpathologic features are the palisade-like and paralled arrangement of the nuclei, which are usually elongated, so-called Antoni A type. Appearance of tumor cells arranges haphazardly and there is no evidence of malignant tendency as shown Fig. 7 and Fig. 8.

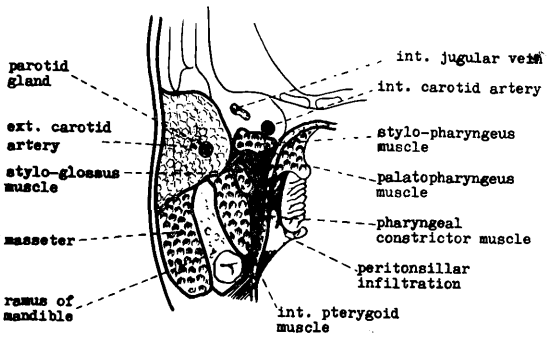

Fig. 4. Transverse section of head at tonsillar level to show parapharyngeal space.[1)2)]

After this operation, careful obstruction of blood pressure, pulse and respiration for signs of mediasfinal compression was made frequently, but fortunately this failed to develop.

Postoperatively, there was a rise of temperature to 38.2°C which subsided to normal in three days on antibiotic syrup and continuous oral irrigation.

On checkup examination three weeks postoperatively, the wound had healed with imperceptible scar and no neurological deficit could be found, for example postoperative Horner's syndrom.

On the 50th hospital day, she was discharged in good condition.

DISCUSSION

From reviewing literatures, this type of tumor is known by many names. Kennon[3] described that neuroma, neurinoma, neurilemmoma, neurilemnoma, solitary neurofibroma, gliofibrosarcoma, Shwannoma, Peripheral glioma and fibroma of nerves could be considered synonyms. These tumors are characteristically benign, slow growing and never cause trouble until they are of such proportions that their size produces symptoms and the most common symptoms are difficulty in swallowing and altered speech though many being asynptomatic.

It is generally accepted that this tumor of the parapharyngeal space is rare. McIlrath[4] reported 101 cases of parapharyngeal tumors from 1928 through 1958 and Neurinomas of the parapharyngeal space were 16 of 101 cases.

The age range at the time of treatment was from 24 to 72 years with the majority being in the fourth and fifth decades. In addition, by means of Horiguchi's[5] report neurinoma of the pharynx reported in Japan was only 7 cases and the age range was from 15 to 46.

Gore[6] reported that 64.6 percent in 389 cases of neurinoma occurred within the central nervous and with respect to the parapharyngeal neurinoma, most of these arised from the vagus and cervical symathetic nerve.

According to Masson[7] and Putney,[8] microscopically two characteristic patterns are described, termed Antoni A and Antoni B tissue, both of which may be found in the same tumor. Type A tissue consists of a delicate arrangement of connective and reticular fibers in serpentine and braching formation. The interposed nuclei are somewhat plump with blunted ends and are aligned in rows with intervening space devoid of nuclei. Often, this organization of cells and fibers assumes an organoid appearance suggesting an exaggerated tactile corpuscle, called a verocog body. Type B tissue consists of loosely arranged cells set haphazardly in a mesh work of delicate reticulum fibers and small cystic space. The cystic degeneration is of a serous type and the microscysts may coalesce to form the large cystic area often seen grossly.

Interesting points in this case are as follows ;

1) This case was at the time of admission thought as well as an otolaryngologist of another hospital as if suspecting as malignant lesion of the right palatal tonsil. This diagnosis was caused to the fact which an expanding neurinoma in the parapharyngeal space did not seek one or both of "Avenues of escape" and was not displacing the lateral or posterior wall of the oropharynx as typically seen in usual cases.

2) The tonsillar tissue was not found in microscopic examination of repeated biopsy specimens, which was thought to be taken from the palatal tonsil, and total removal of the bulge. In this fact, we thought that the tonsil changed to necrotic tissue or atrophic because of pressure of an expanding neurinoma

from the retrotonsillar region.

SUMMARY

A case of parapharyngeal neurinoma which was suspected as a malignant lesion of the right palatal tonsil was reported.

ACKNOWLEDGEMENTS

Grateful acknowledgement is made to Prof. Shoichi Honjo for his kind guidance and careful review of manuscript.

REFERENCE

1) Cranmer, L.: Neurofibroma of the parapharyngeal space. *Ann. Otol. Rhinol. and Laryngol.*, **47**: 178-184, 1958.
2) Truex, R.C. and Kellner, C.E.: *Detailed Atlas of the Head and Neck* (New York Oxford University Press) 126-127, 1948.
3) Kennon, W.G.: Neurinoma of the Pharynx. *Laryngoscope*, **60**: 388-391, 1950.
4) McIlrath, C.D.: Tumors of the parapharyngeal region. *Surg. Gynec. and Obst.*, **116**: 88-94, 1963.
5) Horiguchi, N.: A pharyngeal Neurinoma, *ZIBI-INKO-KA*, **39**: 55-58, 1967.
6) Gore, O.D.: Parapharyngeal Neurilemmoma. *Surg. Gynec. and Obst.*, **103**: 193-201, 1956.
7) Masson, P.: Experimental and Spontaneous Schwannomas. *Am. J. Path.*, **8**: 389-415.
8) Putney, J.J.: Neurogenic tumors of the head and neck. *Laryngoscope*, **74**: 1037-1059, 1964.

EXPLANATION OF FIGURES

Fig. 1. Intraoral view with extreme prominence of the right palatal tonsil.
Fig. 2. Photomicrograph of biopsy specimen from the right palatal tonsil. ×150
Fig. 3. Neurinoma in the right retrotonsillar region.
Fig. 5. Neurinoma after total excision. (5.5×4.2×2.0 cm)
Fig. 6. Cut section through the central area.
Fig. 7. Photomicrograph of neurinoma (Antoni A type) H.E. stain ×100
Fig. 8. Photomicrograph of neurinoma H.E. stain ×400

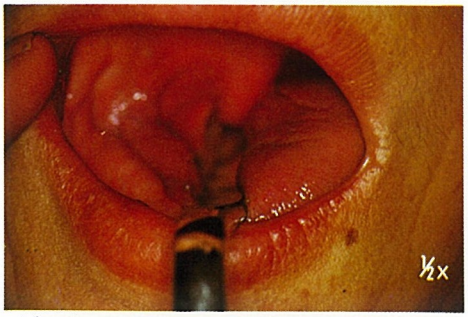

Fig. 1.

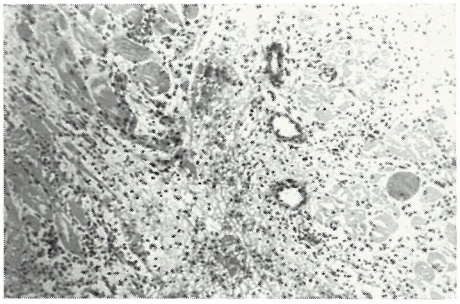

Fig. 2.

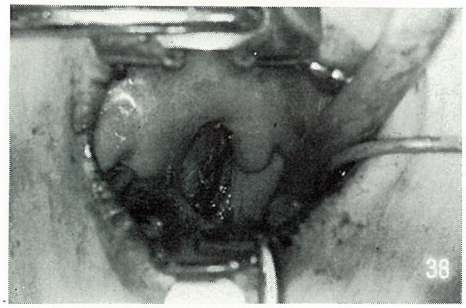

Fig. 3.

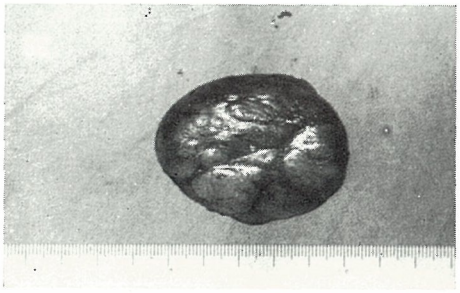

Fig. 5.

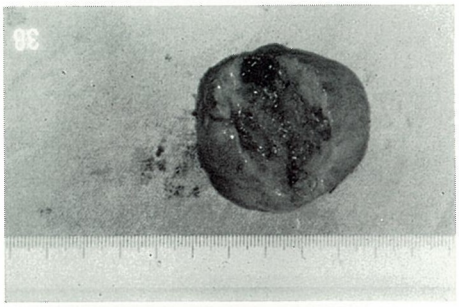

Fig. 6.

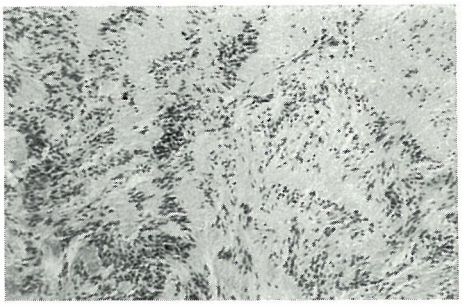

Fig. 7.

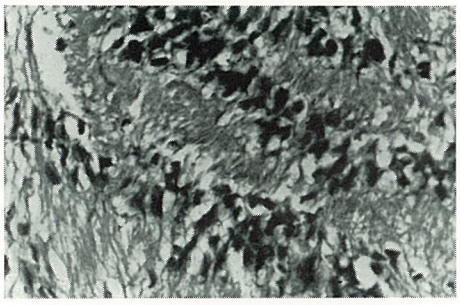

Fig. 8.