Sarcoma of the Nose and Pharynx

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Sarcoma of the nose, paranasal sinus and pharynx is not uncommon. In general sarcoma is much less frequent than carcinoma in these areas. Eggston states that it is contrary to impression that one would gain from early literature, where it was thought that sarcoma outnumbered carcinoma. His opinion might be correct because Gurlt in 1880 stated that sarcoma is fifty times more often seen in the nose and paranasal sinus than carcinoma.

In this paper, the author plans to present his experiences with sarcoma in the nose, paranasal sinus and pharynx and, compare them with those of other authors. 6 cases of sarcoma arising from the nose and paranasal sinuses and 11 cases of that from the pharynx will be reviewed. These cases were made a diagnosis and treated by the members of the staffs of the Dept. of Otolaryngology, Yamaguchi University School of Medicine during the period 1959 through 1967.

REPORT of CASES

1. Sarcoma of the nose and paranasal sinuses.

1) Case 1 : A 71 year-old female was admitted to our clinic on Feb. 7th, 1960, complaining of nasal bleeding on the right side. The patient had had an admission to our clinic during from Oct. 13th, to Dec. 16th, in 1959 because of spindle cell sarcoma of the right maxillary sinus managed with both surgical (radical operation) and x-ray irradiation (total 7200 r) treatments. Several severe nasal bleeding occured on the right side soon later the discharge and some swelling of the right cheek was noticed.

The right cheek was moderately diffuse swollen. A hard mass was detected on palpation of the swelled cheek. The right nostril was complete obstructed with a mass which was eroded and easily bled on slight manipulation.

On Feb. 9th, 1960, a total maxillectomy associating with a radical neck dissection on the right side was performed. No noticeably swelled lymph nodes were observed, but three small lymph nodes were seen around the internal jugular vein and submaxillary region, which showed no metastatic signs on histological examination. The right maxillary sinus was filled with a tumor which destroyed the process frontalis and upper wall of the maxilla. Microscopically,

the tumor revealed spindle cell sarcoma (as shown by Fig. 1 and 2) as well as the previous histological examination.

After surgery, x-ray irradiation was done over the right cheek and neck, totally 4444 r, however, she was getting worse and emaciated day by day. Postoperative twenty' day signs of reccurence were observed on the radix nasi and zygomatic area. On July 2nd, 1960, she died of the invasion of the tumor and cachexia.

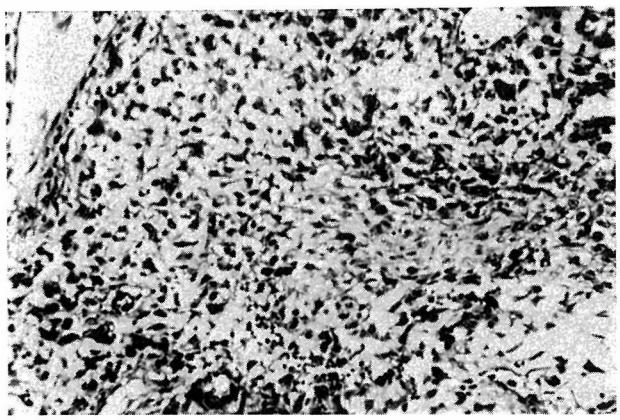

Fig. 1. Spindle cell sarcoma of the maxillary sinus, low power. (case 1)

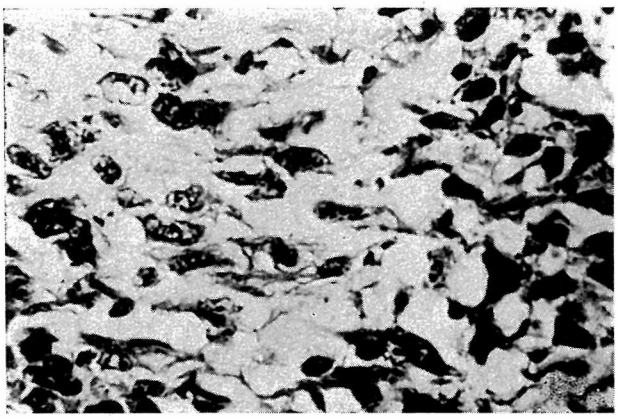

Fig. 2. Spindle cell sarcoma of the maxillary sinus, high power. (case 1)

Case 2: A 52 year-old female was admitted to our clinic on June 6th, 1960, because of a large mass on the lateral neck on each side. The patient noticed small black colored masses in the throat. These masses were removed in 1958 at some hospital. On Feb. 24th, 1959 she was performed on maxillary sinus operation on the right side at an other some hospital. Five months prior to her first coming to our clinic, she developed a mass on the roots of the right

maxillary teeth. At that time she noticed a painless mass on each lateral neck, which became enlarged in size gradually.

On examination, there was a black colored mass, approximately 1 x 3 cm. in size, on the roots of the right maxillary teeth. The surface of the mass was papillomatous. In the throat, an old operative scar was seen, but no mass was observed. A hen egg sized mass detected on both lateral neck fixing to the basel layer.

On June 7th, 1960, the mass of the roots of the right maxillary teeth and enlarged mass of the lateral neck of each side were removed. Materials of these masses showed melanosarcoma on histological examination. After the surgery x-ray irradiation was begun over the right cheek and both lateral neck and was pursued until total 9640 r. On Aug. 22th, 1960, she was discharged from the clinic in good condition.

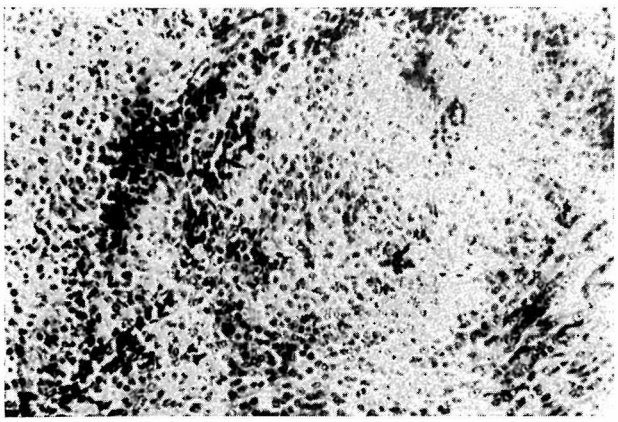

Fig. 3. Melanosarcoma of the maxilla, low power. (case 2)

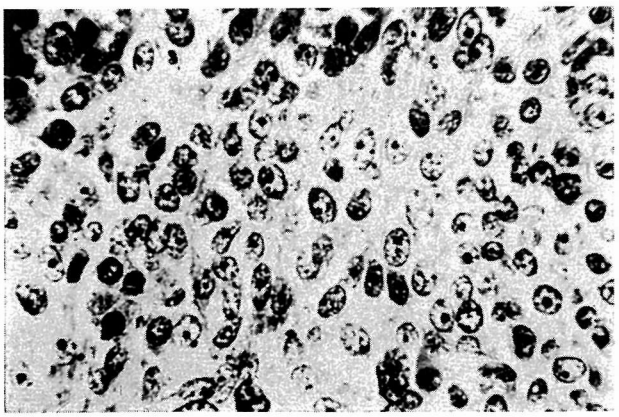

Fig. 4. Melanosarcoma of the maxilla, high power. (case 2)

Case 3: An 80 year-old male was referred to me by the Department of Ophthalmology of our hospital because of nasal bleeding on the right side on Oct. 13th, 1960. The patient complained of some nasal trouble with nasal obstruction and hyposmia except for any discharge for a duration of three years. Since July, 1960, he repeated nasal bleeding on the right side frequently and, diplopia and exophthalmos associated two months later the onset of the nose-bleeds. Therefore, on Sept. 4th, 1960, he was seen and admitted to the Department of Ophthalmology to have a surgery of excenteration of the right orbit under diagnosis of the orbital tumor histologically revealed reticulum cell sarcoma.

On examination, the right eye-ball was absent. A mass was seen on the inferior wall of the orbit. There was a fistula just below the inferior orbital margin. In rhinoscopia, a mass coated with sanguineous crusts was observed, obstructing the middle and olfactory meatuses on the right side. Several swelled lymph nodes were demonstrated on palpation of the neck on the right side.

The biopsy specimen from the mass in the nostril showed reticulum cell sarcoma.

Irradiation therapy over the orbit, cheek and lateral neck on the right side was done total 5000 r. for one month.

On Nov. 12th, 1960, he was discharged without well recovery because of domestic reasons.

Case 4: A 45 year-old male was admitted to our clinic on Sept. 7th, 1961, because of a history of nasal obstruction, some swelling of the cheek and exophthalmos on the right side of about one year. Three months ago his first coming to our clinic, the patient noticed a mass in the right nostril, so he was examined by an otolaryngologist who referred him to our clinic.

On examination, the right nostril was completely filled with a polypous mass and purulent discharges. The right orbital region and cheek were diffusely swollen and slightly tender on pressure. There was no swelled lymph node on the neck.

On Sept. 8th, 1961, external frontoethmoidectomy and polypectomy were done on the right side observing findings of the empyema. Eighteen days later the surgery, radical operation of the right maxilloethmoidal sinus was performed. The maxillary antrum was occupied by a tumor which invased upper bony wall of the antrum.

Histological examination of the tumor revealed polymorphic cell sarcoma.

Postoperatively radium irradiation therapy was done in the maxillary and nasal cavities, totally 7470 r.

On Dec. 22th, 1961, he was discharged from our clinic in good condition.

Two months later the discharge, he had a dental pain of the right upper teeth and severe nasal bleeding occured several times on the right side. So he

was readmitted on Feb. 26th, 1962. The right nostril was filled with a large amount of clotting bloods. No tumor was seen in the nostril after the cleaning. On April 3rd, 1962, the right external carotid artery was ligated to control the nasal bleeding. Since then, however, he was getting worse and died on Dec. 12th, 1962.

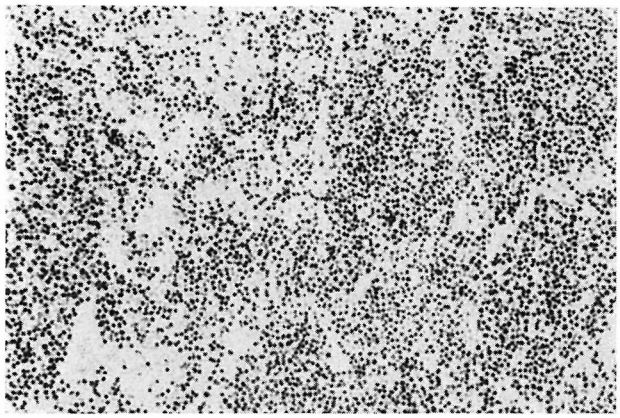

Fig. 5. Reticulum cell sarcoma of the maxillary sinus, low power. (case 5)

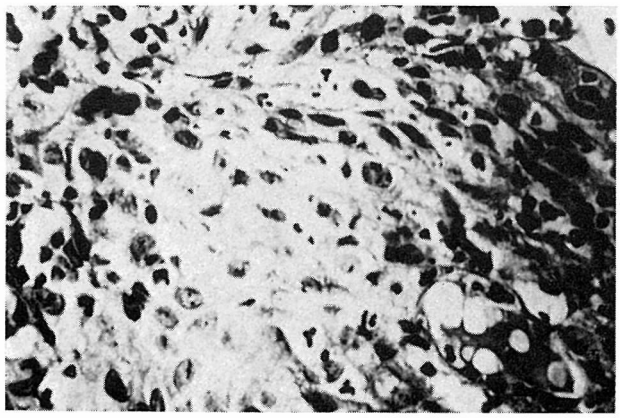

Fig. 6. Reticulum cell sarcoma of the maxillary sinus, high power. (case 5)

Case 5 : A 68 year-old male was transfered to our clinic from the Department of Ophthalmology of our Hospital on March 5th, 1965, because of a suspicion of malignant tumor of the paranasal sinus. The patient had an obstructed nasal breathing and exophthalmus on the right side of recent three months.

The right nostril was filled with a mass and purulent discharge which was seen on rhinoscopia posterior. No swelled lymph nodes were demonstrated on the lateral neck. Total maxillectomy, removal of the orbit and radical neck

dissection on the right side were performed on March 9th, 1965. Several enlarged lymph nodes were observed near the bifurcation of the carotid artery. Maxillary and ethmoidal sinuses were occupied by a tumor which extended to the orbit.

Histological examination of the tumor and enlarged cervical lymph nodes showed reticulum cell sarcoma and its metastasis.

Postoperatively, irradiation therapy of betatron was done over the orbit, cheek and lateral neck with 4000 r. total dosis.

He was well cured and on April 26th, 1965, discharged.

Case 6 : A 59 year-old female was referred to us by an otolaryngologist on June 18th, 1965, and three days later admitted. In May of 1965, the patient had an attack of nasal bleeding on the right side without any other nasal trouble at all. Since then the bleeding frequently occured. On examination, the nasal septum, middle meatus and inferior turbinate on the right side were erosive. There was a mass on the middle meatus. A large mass was seen on the right sided submaxillary region.

Surgical treatment was performed of removal of the nasal mass, radical operation of the maxilloethmoidal sinus and radical neck dissection on the right side on June 24th, 1965. This surgery revealed no tumor nor invasion of the paranasal sinus. Histologically, the specimen from the mass was reticulum cell sarcoma and, metastasis to the submaxillary salivary gland and cervical lymph nodes were demonstrated.

Irradiation therapy was not done because pneumothorax occured postoperatively.

On Aug. 27th, 1965, he was discharged without any signs of reccurence locally.

2. Sarcoma of the throat

Case 7 : A 60 year-old female was admitted to our clinic on April 9th, 1959, complaining of a slightly difficulty in speaking for two months without any difficulty in swallowing or sore throat. On the other hand, the patient developed impaired hearing on both sides since the beginning of 1959 and was treated conservatively by an otolaryngologist for a few month, making diagnosis of secretory otitis media.

Small amount of effusion was demonstrated in both middle ear cavities by a puncture. Both palatine tonsils were markedly swollen and the left one was ulcerative. Lateral wall of the hypopharynx was also swollen, forming a tumor. In the choane, the left lateral wall was moderately swollen.

There were enlarged lymph nodes, small finger head size, on each lateral neck and submaxillary region.

Biopsy specimens taken from the left tonsil ulcerated and hypopharynx showed reticulum cell sarcoma.

An audiogram revealed a hearing loss of 25-50 db in all frequencies in perceptive type.

Irradiation, totally 17640 r, was done over the throat and neck for 70 days.

On July 7th, 1959, he was discharged. At that time the swelled tonsils and lateral walls of the epi- and hypopharynx almost diminished in size, but a finger head sized lymph node was detected on the left axillar fossa.

Case 8 : A 35 year-old housewife was admitted to our clinic on Dec. 15th, 1961, with complaints of a mass and dull aching pain in the throat since the end of Sept., 1961. At that time the patient was treated at some hospital under diagnosis of peritonsillar abscess without good results. So she was consulted with an other otolaryngologist who suspected a malignant tumor of the tonsil and referred her to our clinic.

On local examination, there was found to be uneven and partly ulcerative mass on the right tonsil. Induration was obviously observed around the right tonsil. An enlarged lymph node was palpable on the right lateral neck. The biopsy specimen taken from the tonsillar mass revealed reticulum cell sarcoma. On Dec. 19th, 1961, a tonsillar mass was removed and radical neck dissection on the right side was done. There were many swelled lymph nodes on the neck around the internal jugular vein, which were metastasis on further histological examination.

Postoperatively, radium needles irradiation therapy was done in the right tonsillar fossa with 3400 total dosis.

She was discharged with good recovery.

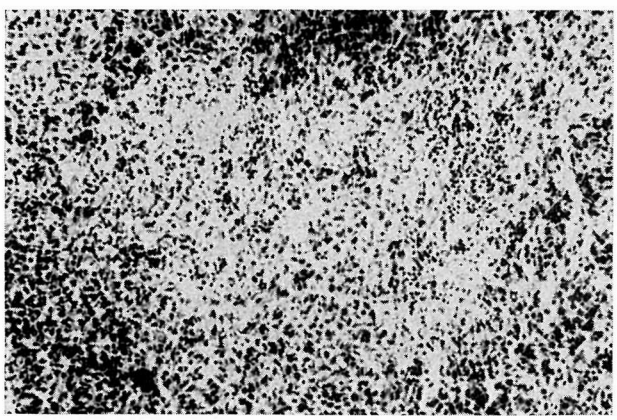

Fig. 7. Reticulum cell sarcoma of the tonsil, low power. (case 8)

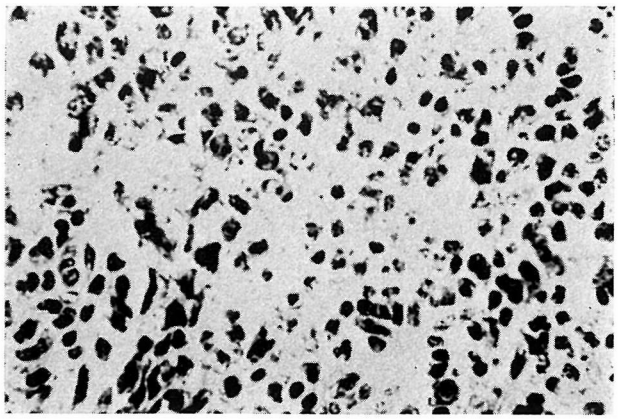

Fig. 8. Reticulum cell Sarcoma of the tonsil, high power. (case 8)

Case 9 : A 56 year-old female was admitted to our clinic on Feb. 14th, 1963, complaining of painless masses in the throat and on the right lateral neck. Prior to two months her first coming to this clinic, she noticed an enlarged mass on the angle of the right jaw. On Feb. 11th, 1963, she suffered from common cold and was seen by a physician who found a mass on the right tonsil. Her complaint did not include any difficulty in swallowing or bleeding.

On examination, a firm, smooth and nonulcerative mass, approximately 4 x 4 cm. in size, was seen on the right tonsil, displacing toward the soft palate. There was an enlarged mass on the angle of the right jaw.

The biopsy specimen from the tonsillar mass showed reticulum cell sarcoma.

Irradiation was performed over the throat and lateral neck, totally 3216 r.. Fifteen days later the completion of the irradiation, the excision of the tumor and radical neck dissection on the right side were done. During the neck dissection several swelled lymph nodes were observed along the internal jugular vein.

Histological diagnosis of the tonsillar mass was reticulum cell sarcoma and metastasis was not observed in swelled cervical nodes.

The postoperative course was uneventful. On April 28th, 1963, she was discharged in good recovery.

Case 10 : A 61 year-old male was referred to us by an otolaryngologist and admitted to our hospital on May 23th, 1963, because of a tumor of the left palatine tonsil. The patient was relatively in good healthy and no trouble in his body except for occasional an attack of sore throat. Five days before admission, the otolaryngologist found a mass on the left palatine tonsil and had an impression of precise examination for the mass.

On local examination, there was found to be a large, smooth and nonulcerative

mass on the left palatine tonsil, which was not tender on pressure. The left lateral wall of the hypopharynx was massive swelling. A hard, smooth and no tender mass was detected just below the angle of the left jaw on palpation.

On May 24th, 1963, these pharyngeal tumors were removed and radical neck dissection on the left side was performed.

The tumors materials obtained at the surgery showed reticulum cell sarcoma and swelled cervical lymph nodes were metastasis.

The postoperative recovery was good. Radium needles irradiation was given in the left tonsillar fossa, totally 8280 r..

On July 12th, 1963, he was discharged without any signs of reccurence.

Case 11: A 61 year-old male was referred by an otolaryngologist and admitted on Jan. 13th, 1964 with a tentative diagnosis of epipharyngeal tumor. The patient noticed a sense of fullness in the left ear for recent three weeks and therefore consulted to the otolaryngologist who suspected a tumor in the epipharynx and sent him to our clinic for further examination. His complaint did not include nasal obstruction, headache, trigeminal neuralgia and any signs of the eye trouble.

On examination, the left eardrum was blue-grey in color and a point of puncture was seen. Rhinoscopia posterior revealed a massive growth at the left sided epipharyngeal region and a lot of white secretions over the septum and posterior tip of the inferior turbinate. The soft palate was not paralytic. Vocal cords were also not paralytic. No signs of paralysis of V and VI nerves.

An audiogram showed a conductive hearing loss of 20-40 db on both sides and presbycusis.

On Jan. 14th, 1964 removal of the epipharyngeal tumor and radical neck dissection on the left side were performed. Several small lymph nodes were detected on the submaxillary region and lateral neck, in which signs of metastasis were not seen, histologically.

Histological examination of the epipharyngeal tumor revealed reticulum cell sarcoma. Irradiation therapy was given over the epipharynx and lateral neck, totally 5000 r..

He was discharged on March 3rd, 1964, in good condition.

Case 12: A 57 year-old female was admitted to our clinic on Aug. 6th, 1964, because of suspicion of an epipharyngeal tumor by an otolaryngologist. For about two weeks the patient had a pain on the right retroauricular region, which irradiated to the submaxillary region, and one week later the onset of this pain these complaint was associated with a disturbance of the taste, frontalgia, nasal discharge and nasal obstruction. There was a history of radical mastoidectomy on the left side 10 years ago.

The right sided soft palate was markedly swollen. A rhinoscopia posterior re-

vealed a mass on the right sided epipharynx. There were no swelled lymph nodes on palpation of the neck. When the tongue pushed forward, it deviated to the right side. No sign of paralysis of the VI cranial nerve.

The epipharyngeal mass was removed. The mass presented near the orifice of the right eustachian tube, extending upper and behind.

Histological examination of the mass showed reticulum cell sarcoma.

Postoperatively, radium needle therapy was done in the epipharynx, totally 400 r.

On Sept. 5th, 1964, she went to her home in well general condition but complained of some difficulty in opening her mouth.

Case 13 : A 46 year-old female was admitted to our clinic on Aug. 8th, 1966, complaining of a mass on the left upper lateral neck. During Oct. to Nov. of 1965, the patient was treated by an otolaryngologist with tubal inflation on the left side daily because of impaired hearing on the left side. However, the complaint did not only recover but also was getting ill. In some day of Feb. in 1966, she noticed a painless mass on the left lateral neck, so she consulted to an other specialist who recommended to have examination at the university hospital, but she was never seen until her first visiting to our clinic on Aug. of that year.

On examination, no paralysis nor notable abnormality was detected on the face and eyeballs. The left eardrum was markedly retracted. The surface of the posterior edge of the septum had a some soft granulated red mass seen through the left nostril.

On rhinoscopia posterior, granulated masses were observed on the back surface of the soft palate and roof of the epipharynx. There was a mass, 6 x 3.5 cm. in size, on the left upper lateral neck, which was elastic firm.

An audiogram revealed a conductive hearing loss of 40-70 db on the left side.

The biopsy specimen from the epipharyngeal mass showed reticulum cell sarcoma histologically.

On Aug. 23th, 1966, removal of the epipharyngeal mass and radical neck dissection were performed. Materials of each epipharyngeal mass and swelled cervical lymph node showed reticulum cell sarcoma and the finding of metastasis.

Postoperatively, endoxan was given, totally 2100 mg and irradiation therapy of betatron was done, totally 4698 r. Generally and locally her condition became better remaining occasional distress and pain in the deep zygomatic region lower cheek.

He was discharged on Oct. 18th, 1966, in good condition.

Case 14 : A 49 year-old male was referred to me by an otolaryngologist and admitted on Aug. 29th, 1966, because of sore throat irradiating to the left auricle, so he consulted to the otolaryngologist who referred him to our clinic

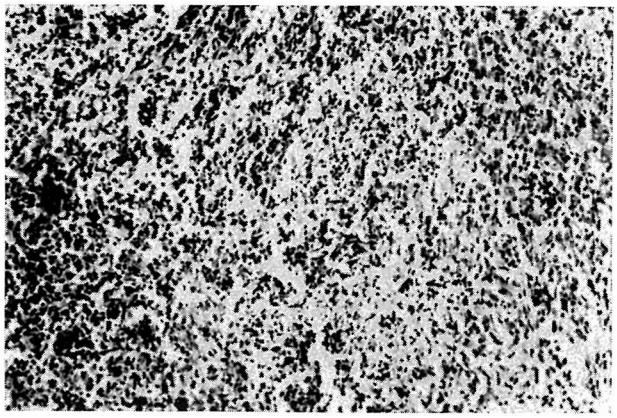

Fig. 9. Reticulum cell sarcoma of the nasopharynx, low power. (case 13)

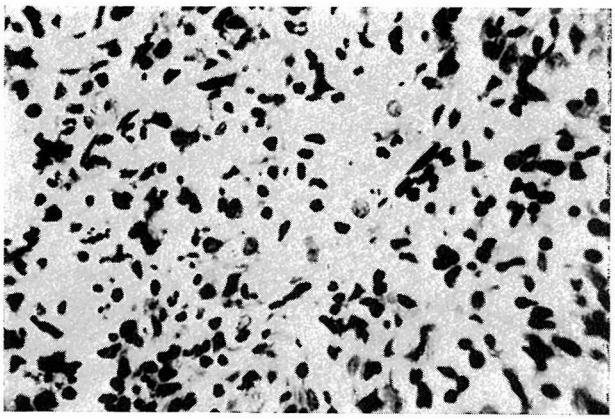

Fig. 10. Reticulum cell sarcoma of the nasopharynx, high power. (case 13)

for further examination, suspecting a malignant tumor of the left tonsil.

On local examination, the left palatine tonsil was enlarged and lower part of its was massive and ulcerative. The anterior pillar on the left side was prominent with redness. There was a massive tumor on the base of the tongue on the left side, which was considered to be invasion by the tonsillar tumor. On the neck no notable lymph node was palpable, but the left submaxillary salivary gland was rather swollen.

He was performed on a removal of the tonsillar tumor associating with radical neck dissection on the left side on Sept. 6th, 1966. The surgery exposed a few swelled lymph nodes around the internal jugular vein, in which metastasis was found by histological examination.

Either biopsy specimen or tumor material obtained at the surgery revealed

reticulum cell sarcoma in microscopic examination.

Irradiation therapy by betatron was done over the throat and neck on the left side, totally 9000 r..

When he was discharged on Oct. 23th, 1966, no signs of recurrence of the tumor was observed.

Case 15 : On June 20th, 1966, a 44 year-old male was admitted because of sore throat and a mass in the throat for about two weeks.

On examination there was found to be a large and ulcerative mass partly coated with dusty furs on the right tonsil.

A swelled lymph node was demonstrated on palpation on the right lateral neck.

He was done a removal of the right tonsillar mass associating with radical neck dissection on June 30th, 1966. Histological examination of the mass showed reticulum cell sarcoma. X-rays were irradiated over the throat and neck, totally 5000 r.

He was discharged in good condition on Aug. 5th, 1966.

Case 16 : A 57 year-old male was admitted to our hospital on Jan. 4th, 1967. Three years before the admission, the patient had sore throat and swelling of the left upper neck which was treated with radiation therapy at some hospital for two months (unknown period and dosis of irradiation). The troubles subsided well for following two years until the middle of Nov. 1966, when he began to have sore throat and dental pain of the left lower 2nd molor tooth. The trouble of the painful tooth remained and aggravated. Finally, he visited to an otolaryngologist and sent to our clinic.

There was a bizzere necrotic coat in a large pit of the left tonsillar fossa. Wide necrotic massive lesions were leveled from the epipharynx to the hypopharynx. Swelled lymph nodes were demonstrated at the left upper cervical region.

Biopsy specimens taken from the three lesions of the pharynx showed reticulum cell sarcoma.

Surgical treatment was performed of a removal of the pharyngeal tumor associating with radical neck dissection on Jan. 10th, 1967, and postoperatively radiation therapy of betatron was given totally 3830 r..

Histological examination of the pharyngeal tumor revealed reticulum cell sarcoma as well as the biopsy. The swelled cervical lymph node was negative for metastasis.

He was discharged on Feb. 7th, 1967, not yet completed the radiation therapy because of domestic reason.

Case 17 : An 82 year-old male was admitted on July 19th, 1967, because of sore throat, difficulty in swallowing of one month's duration. A few days before his first coming to our clinic on July 14th, 1967, the patient noticed a painless

mass on the right lateral neck.

A large nodular mass was seen on the right tonsil, which invaded to the base of the tongue on local examination. There was a large mass, soft, smooth and non-tender, on the middle portion of the right lateral neck.

The biopsy specimen from the mass of the tonsil showed reticulum cell sarcoma.

He was transfered to the Department of Radiology for radiation therapy 6 days later his admission because his condition was too poor to have surgical treatment.

COMMENT

Malignant tumors are frequently seen in the nose and pharynx. It is well known that carcinoma is more common than sarcoma. Ohngren (1) found 22 sarcomas (or 15%) among 129 cases of malignancies arising in the maxilloethmoidal region. Ringertz (2) reported that 5 per sent of all nasal and paranasal sinus tumors were sarcoma.

High (3) mentioned that the so-called "cancer age" is not an important factor in sarcoma of the nose and throat and many of the reported cases have been in children. Johnson (4) stated that during the period 1944-1958, 14 years, there were two cases of lymphosarcoma of the tonsil and one case of reticulum cell sarcoma of the tonsil, whereas during same period there were 131 cases of carcinoma of the tonsil. Leonardelli et al (5) had 104 cases of sarcoma out of a total 376 cases of tonsillar malignancy. Rao (6) reported that 5 were sarcoma, out of 48 patients with malignant tumors of the nasopharynx.

The author had 6 cases of sarcoma arising in the nose and paranasal sinus and 11 cases of that arising in the throat during 8 and half years, (1959-July of 1967), whereas in the same duration 64 cases of nasal and paranasal carcinoma and 21 cases of pharyngeal carcinoma (Tables 1-5).

In Table 1, sex and age incidence of malignant tumors of the nose and paranasal sinuses is shown; male is twice as frequent as female in both sarcomas and carcinomas, an average age of sarcomas is much more than that of carcinomas, and sarcoma is 6 (8.6%), out of 70 malignant cases. Table 2 shows sites of malignant tumors in these areas: the great number of those is from the maxilloethmoidal sinus and only 2 cases, each 1 sarcoma and 1 carcinoma, are from the nasal septum. In Table 3, sex and age incidence of malignant tumors of the pharynx is indicated; in sarcoma, there is nearly no difference between male and female in sex incidence, however, male is predominant in that in carcinoma, average ages of both sarcomas and carcinomas are almost equal, and out of 75 malignant cases, 11 are sarcomas (14.6%). Table 4 shows sites of malignant tumors of the pharynx; the nasopharynx is less frequent than the

tonsil in incidence of malignant tumors.

Table 1. Sex and Age Incidence of Malignant Tumors of the Nose and Paranasal Sinuses.

Sex:	Sarcoma	Carcinoma
	male.....4 cases	male.....45 cases
	female...2 cases	female...19 cases
	total 6 cases	total 64 cases
Age;	Sarcoma	Carcinoma
	45.....80	19.....75
	(63)	(56)

( ): average

Table 2. Sites of Malignant Tumors of the Nose and Paranasal Sinuses.

Sarcoma;	
maxillo-ethmoidal sinus	5 cases
nasal septum	1 case
total	6 cases
Carcinoma;	
maxillo-ethmoidal sinus	62 cases
nasal septum	1 case
ala of the nose	1 case
total	64 cases

Table 3. Sex and Age Incidence of Malignant Tumors of the Pharynx.

Sex;	Sarcoma	Carcinoma
	male.....6 cases	male.....45 cases
	female...5 cases	female...19 cases
	total 11 cases	total 64 cases
Age;	Sarcoma	Carcinoma
	35.....82	38.....77
	(55)	(57)

( ) : average

Table 4. Sites of Malignant Tumors of the Pharynx.

Sarcoma;	
nasopharynx	3 cases
palatine tonsil	8 cases
total	11 cases
Carcinoma;	
nasopharynx	3 cases
Palatine tonsil	6 cases
soft palate	4 casse
hypopharynx	8 cases
total	21 cases

Table 5. Histological Classification of Sarcomas of the Nose, Paranasal Sinuses and Pharynx.

Nose and paranasal sinuses;	
reticulum cell sarcoma	3 cases
polymorphous cell sarcoma	1 case
melanosarcoma	1 case
spindle cell sarcoma	1 case
total	6 cases
Pharynx;	
reticulum cell sarcoma	11 cases

Table 5 expresses the histological classification of sarcomas of the nose, paranasal sinuses and pharynx; all of sarcomas of the pharynx is reticulum cell sarcoma, and of the nose and paranasal sinus, a half is reticulum cell sarcoma and others are polymorphous cell, spindle cell and melano-sarcomas.

Pancoast (7) believes sarcoma in young people more than the middle age. However, in the cases reported here there was no case of sarcoma arising in the children and an average age of the patients with sarcoma was a little higher rather than that of the patients with carcinoma.

There are no special symptoms of sarcoma in the nose and paranasal sinuses, but nasal obstruction and nasal bleeding are the two most frequent complaints. Clinical signs seen in our six cases are as follows; unilateral nasal obstruction and bleeding from the nose were most frequent, exophthalmus and swelling of the cheek more frequent, and nasal discharge, hyposmia and diplopia were less frequent. Some authors stated that sarcoma tumors are slower growing with less tendency to ulceration than the carcinomas, and they present more distinct expansive growth with extension by contiguity, and symptom due to pressure, rather than invasion and destruction as the carcinomas (3). However, in our six cases noticeable destruction of the bony wall was found in two cases. Moreover by the fact that the bleeding from the nose occured in most frequency in our cases, the author supposes that sarcoma has fairly tendency to destruction or invasion.

22 sarcomas of the maxilloethmoidal region reported by Ohngren (1) were of the following histological types;

osteoblastic	5	plasmocytoma	3
round cell	3	spindle cell	2
polymorphous	3	myxosarcoma	2
melanosarcoma	3	fibrosarcoma	1

Poulsen (8) reported 5 sarcomas in the nose and paranasal sinus; 2 round cell sarcoma, 2 reticulosarcoma, and 1 fibrosarcoma. Out of 6 our cases, 3 were reticulum cell sarcoma and another 3 were spindle cell-, polymorphous cell-, and melanosarcomas.

Melanosarcoma is rare tumor in the nose, nasopharynx or mouth. Our cases (case 2) was a primary tumor of the throat and had invaded the maxilla.

In reviewing the literature from 1926, New (9) discovered that treatment of malignancies of the antrum by surgical excision had been generally unsuccessful and that irradiation alone had likewise produced poor results. In the present time, more effective treatment of sarcoma in the nose and throat, as well as carcinoma, is combined therapy of surgery and irradiations which are endocavity curietherapy and transcutaneous radiotherapy. Richard (10) stated that transcutaneous radiotherapy is applicable to tumors of the maxilla but is difficult to apply to growth of the ethmoidal area, to which endocavity curietherapy is more effective. Out of 6 cases reported here, 4 were treated by the combined therapy of surgical excision and irradiation of x-ray, betatron or radium needles. One was only surgically treated because pneumothorax was complicated postoperatively. Out of 6 patients, 3 were well cured, 2 died in the hospital.

Eggston and Wolf (11), in a ten-year ieview, noted 37 cases of sarcoma of the tonsils and nasopharynx, and 70 cases of carcinoma of the tonsils and nasopharynx. This showed approximately 2 : 1 preponderance of the carcinoma. In the report of Fits-Hugh et al (12), there are 3 cases (7 per cent) of sarcoma out of 42 cases of malignant neoplasma in the nasopharynx, As mentioned above, sarcoma of the nasopharynx is rare. In this paper author reported 3 cases of the nasopharyngeal sarcoma. This number is equal to that of the carcinoma of the nasopharynx.

Malignant tumors of the nasopharynx produce a variety of signs and symptoms. Those most often seen in the order of their frequency were ; 1. enlarged cervical nodes, 2. blockage of ears, 3. bloody nasal discharge, 4. weight loss, 5. head and neck pains, 6. nasal obstruction, 7. secretory otitis media, 8. sore throat, 9. diplopia, and 10. voice of change. Neuro-ophthalmological symptoms are very important in nasopharyngeal tumors because the nasopharynx is intimately related to the bıain stem. The abducens nerve (VIth) is the one most commonly involved in intracranial spread of nasopharyngeal tumors. The other cranial nerves, Vth, IIIth, and IVth, are next affected. In our patients (case 11, 12 and 13), the most common symptoms were hearing loss, enlarged cervical nodes, head and neck pains and paralysis of the tongue. However ophthalmological signs were not seen in any cases.

Godtfredsen (13) reported that as high as 50 per cent of the nasopharyngeal malignancies originate in the lateral wall of the nasopharynx, especially in the fossa of Rosenmuller. Most observers agree that the fossa of Rosenmuller is commonest primary site for malignancies of the nasopharynx.

Malignant growths of the tonsil originate from both epithelial structures (squamous cell carcinoma) and connective tissue structures (lymphosarcoma). The reticulo-endothelial tissues may give rise the reticulosarcoma.

There is no discomfort noted during the earlist stage of sarcoma of the tonsil. Obstruction because of size may be the first complaint. In the late stages the findings are those of a generalized cancer with anemia, cachexia, weight loss and shortness of breath, etc. Sarcoma of the tonsil cause diffuse enlargement of the tonsil similar to ordinary tonsillar hypertrophy. The hypertrophy of tonsil is the signigicant finding of this condition, which may be three or five times the size of normal tonsil. In 8 our patient with sarcoma of the tonsil, most common complaints were noticing a mass in the throat, sore throat and noticeable cervical mass when they were first seen at our clinic. In these patients, 6 out of 8 tonsils were ulcerative. This is not according to the common local findings of sarcoma of the tonsil described in usual text books or journals as mentioned above.

The treatment of sarcoma in the throat is the combined therapy of surgery and irradiation as well as in the nose. We treated 9 patients by the com-

bined therapy of surgery (excision of the tumor associating with radical neck dissection) and irradiation (x-ray, betatron or radium), out of 11 patients. Histological examination of the cervical nodes revealed metastasis in 4 cases. 6 patients were discharged in well condition.

SUMMARY

1) 6 cases of sarcoma in the nose and paranasal sinus were reported; 5 were in the maxilloethmoidal sinus and 1 from the nasal septum.

2) 11 cases of sarcoma in the throat were reported; 8 were of palatine tonsils and 3 in the nasopharynx.

3) Among these cases male was more than female in frequency.

4) Average ages of the cases were 63 in the nose and paranasal sinus and 55 in the throat.

5) Histologically, out of 6 cases of sarcoma in the nose and paranasal sinus, 3 were reticulum cell sarcoma, 1 polymorphous sarcoma, 1 melanosarcoma and 1 spindle cell sarcome and all 11 cases of sarcoma in the throat was reticulum cell sarcoma.

6) Metastasis to the cervical nodes was found in 3 out of 6 cases of sarcoma in the nose and paranasal sinus.

Metastasis to the cervical nodes was found in 4 out of 11 cases of sarcoma in the throat.

The distant metastasis to the other organs was not found in all cases.

7) Out of all 17 cases, 14 were treated with combined therapy of surgery (11 involving radical neck dissection) and irradiation of x-ray, betatron or radium.

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