

## MIXED CELL TUMOR OF THE NASAL SEPTUM

The "maxilla-premaxilla" approach and lateral hemirrhinotomy of Cottle for removal of tumor in toto

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### INTRODUCTION

Mixed cell tumors are a common problem encountered today in the practice of otorhinolaryngology; yet a mixed cell tumor of the nasal septum is of a rare occurrence. When it does happen, the approach to its removal can be of such a nature that if it is not removed en masse, and under limited exposure, it may bleed freely causing inadequate removal, the destruction of anatomical parts, and consequently altering the physiology of the nose and the possibility of later recurrence.

Denker and Kahler, in 1929, were the first to describe the rarity of this condition in the nasal septum. In 1932, Stevenson reported about it in the United States for the first time. Later, Weidlein, in 1936, reported his case of mixed cell tumor of the nasal septum. In 1944, Ersner and Saltzman reported the fourth existence wherein this type of tumor occurred in a patient.

Further researching of the literature (McDonald and Havens, 1948; H. Owens, 1949 and Bois, 1959), showed that mixed tumors of salivary origin are of common occurrence in such places as the lip, palate, tongue, tonsil, pharynx, trachea, sublingual glands, and parotid glands. Rare sites, such as the middle turbinate of the nose (Orasco et al., 1932); and of the retrotonsillar space (Persky, 1935) also are recorded.

This case, therefore, constitutes the fifth instance in medical literature of mixed cell tumor of the nasal septum where a surgical technique by a rhinologist, combining the rhinotomy approach of Bordley (1949), with the newer maxilla-premaxilla approach of Cottle (1958) to the nasal septum is described to allow easy exposure in a blood-free field for complete removal of the tumor without deformity and recurrence.

### Report of case:

Case 1. D.L.B., female, negro, aged 56, a practical nurse, was first seen in the office at the request of her family physician because of the possibility of a nasal polyp. She stated that there had been a progressive growth and increasing obstruction to breathing in her nose for over 6 months. She stated this had aggravated her breathing to the point, where she needed three pillows to sleep nights. She was also concerned about fullness on the left side of her nose.

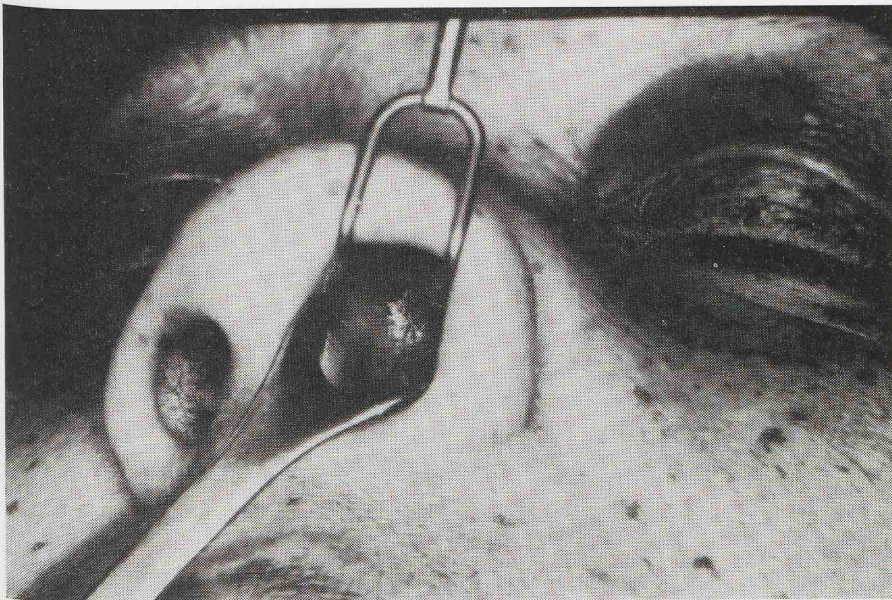


Figure 1. Pre-operative finding.

### **Past history**

Her past and family history was irrelevant and not related to this condition. There was no history of injury to her nose. There was the presence of mild diabetes regimented by diet and Orinase.

### **Physical examination**

The physical examination disclosed no abnormalities with the exception of the swelling over the left lobular and cartilaginous roof area. The rhinoscopic examination revealed the left vestibule to be filled with a smooth, cystic type growth involving areas of the posterior part of the vestibule, the "valve" or upper lateral area and part of the "attic" or open space of the nose. There was almost complete blocking of the turbinate due to the mass which had its origin high on the left side of the nasal septum. An applicator could be readily passed into the interior meatal area but complete impaction with the turbinate was present.

The mass was covered with normal appearing mucosa and felt soft and fluctuant and did not pit on pressure nor respond to cocaineization and shrinkage. Posterior rhinoscopy did not reveal extension of the tumor into the left posterior choanal areas. Transillumination of the sinuses did not reveal cloudiness of the frontal or maxillary sinuses. There was no evidence of a purulent exudate or posterior nasal discharge. No X-rays were taken of the paranasal sinuses.

### **Biopsy taken in office May 1, 1967**

Microscopic: Sections are of multiple portions of tissue most similar in appearance, generally cellular with a variable amount of vascular stroma. Two

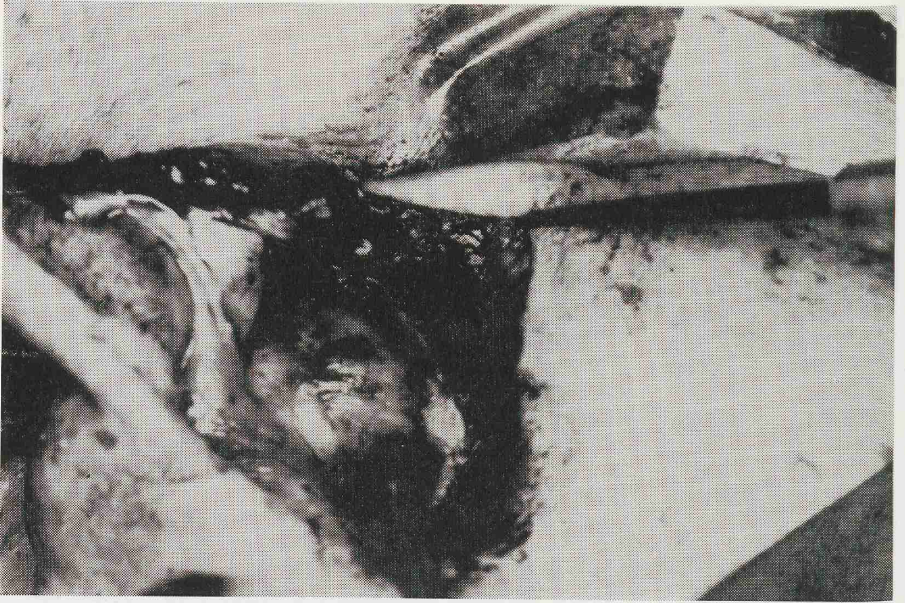


Figure 2. Left hemirhinotomy.

portions of tissue are found with fairly regular covering of squamous epithelium but with some basal cell hyperplasia. No invasion into the underlying tissue is seen. One strip of tissue has covering of respiratory type epithelium. The remaining tissues are the cellular ones, with rather uniform nuclei throughout, generally ovoid, moderately hyperchromatic, with a scanty amount of surrounding acidophilic cytoplasm. Some of the cells are vacuolated, and in a number of instances gland or gland-like structures are formed. In a very few areas small papillary structures are present. Scattered areas of dense eosinophilic stroma are noted, and in a few areas these suggest cartilaginous matrix. In still other areas the stroma is loose, slightly basophilic and with spindle stromal cells. While slight cellular and nuclear variations are noted, no definite features of malignancy are found. The lesion is interpreted as being a mixed type tumor of salivary (mucous) gland origin. Diagnosis: "Mixed tumor of salivary-type gland origin".

#### **Surgery performed May 11, 1967**

##### **Surgical steps:**

1. Following the preparation of the patient under general anesthesia, with oral intubation fluothane and oxygen, the patient's face and nose was prepared with soap and water, alcohol and ether solution.
2. Cocainization of the vestibule of the nose and nasal mucosa, to include the sphenopalatine ganglion and naso-ciliary nerves, was carried forth.
3. Approximately 10 cc of 1% xylocaine and 1-30.000 solution adrenalin mixture was instilled into the infraorbital, supraorbital, infratrochlear, external ethmoidal and anterior palatine nerves.

4. The maxilla-premaxilla approach of Cottle, using a right hemitransfixion incision was done uncovering the entire right nasal mucosa sub-perichondrium.
5. With blunt incisors, further uncovering of the nasal spine area and lip was done.
6. A right and left inferior tunnel, submucosally, was also performed along the floor of the nose and then a partial left anterior tunnel and the left inferior tunnel was made into one posteriorly, behind the tumor.
7. Bilateral intercartilaginous incisions and uncovering of "the roof" or dorsum of the nose, preserving the periosteum, was done.
8. A unilateral intraseptal left midline osteotomy was done preserving the mucous membrane of the septum.
9. A left alar facial incision was made followed by elevation of the periosteum and, at the base line, by a lateral osteotomy using saw and straight and curved chisels.
10. An incision was then made through the skin on the left at the osteotomy site and the entire half of the left side of the nose was elevated to expose the tumor mass present in the septum and in the areas of the "valve" or upper lateral cartilage and within the area of the "attic" of the nose.
11. The tumor measured 2.6 x 1.8 cm and was completely excised with a border of good tissue around it to include the nasal septal cartilage on the right side and the mucous membrane on the left. The right septal mucosa was left intact.
12. Following this, further posterior septum resection was performed to allow the septal mucosa to drape and to allow it to rotate forward.
13. Further elevation of the left mucosa of the floor of the nose, in the area of the turbinates was done so that this could be rotated by a lengthening incision toward the nasal septum leaving, therefore, a large denuded area without mucosa along the floor of the nose.
14. A split-thickness skin graft measuring twenty-thousandths (.0020) of an inch (.0020 x 1½ x 2 inches) was taken from the inside of the right thigh and was laid as a Thiersch graft over teflon splints and TELFA dressing along the floor of the nose and along the area which had been void of its mucous membrane.
15. The patient's own removed septal cartilage and bone was crushed and replaced in-between the right septal mucosa and the newly rotated mucous membraneous flaps that were tacked with chromic gut sutures.
16. Four intranasal packs, ½" wide and 12" long, soaked in cod-liver oil and polysporin ointment were applied gently as an internal dressing and light pack.
17. Subcutaneous gut sutures (4-0) and external dermalon sutures (5-0) were used for complete closure of the left hemirrhinotomy incision.
18. Partial incomplete alar facial incision was made on the right side and through this two base chromic (3-0) figures of 8 gut sutures were used to bunch the nasal spine area.
19. Through the intercartilaginous incision, half vestibular incision of each lower lobular cartilage and mucous membrane was made to thin and support the tip of the nose.
20. Four septal-columella sutures of plain gut (4-0) were used to close the hemitransfixion incision.

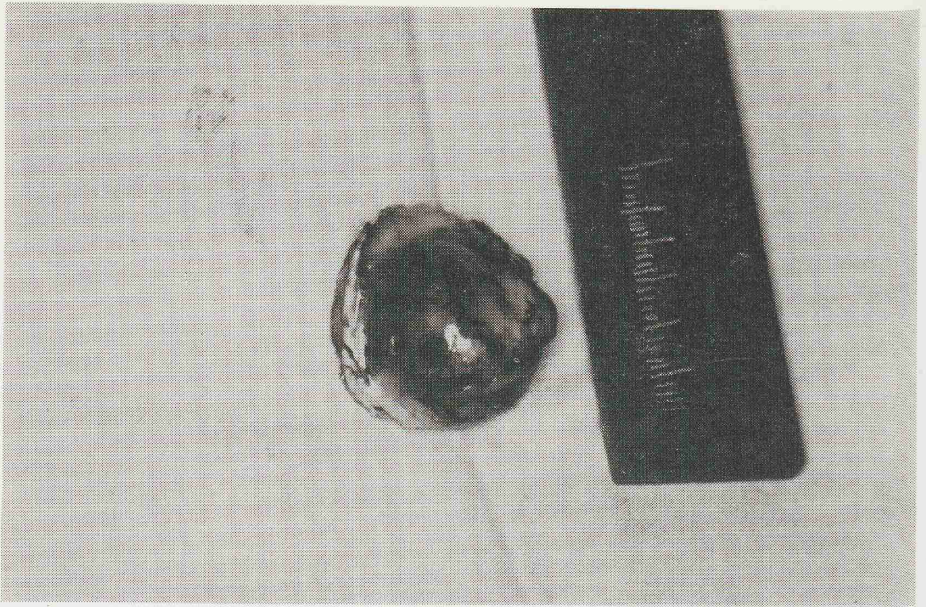


Figure 3. Specimen - mixed cell tumor of septum.

21. Four dermalon sutures each were used to close the two alar facial incisions.
22. One half inch adhesive tape was applied externally to narrow and drape the entire nose over the internal dressing.
23. This was followed by a wax stent molded over the entire external nasal pyramid.
24. Compression dressing of waste gauze was applied over the entire face for pressure and to reduce swelling.
25. Throughout the whole procedure the patient bled minimally, receiving 20 mgs of premarin, 1 ampule of adrenoem and 500 cc of 5% glucose in saline I.V.

#### **Histological description**

Gross description: An ovoid somewhat flattened piece of cartilaginous tissue measures up to 2.6 cms in greatest diameter and usually has a few millimeters in thickness but on one side is covered by flesh colored mucosa which remains intact for the most part though it is elevated by a soft flesh purplish discolored tumor of about 18 mms diameter. This lesion is elevated about 10 mms above the mucosal surface and cut surface reveals a soft fluctuant focally hemorrhagic and possibly superficially ulcerated or interrupted from previous biopsy along one margin. The tissue is gray-tan in color as a rule but portions are somewhat translucent. Frozen section shows a pattern consistent with mixed tumor of salivary gland origin. Multiple sections of the lesion show a fairly uniform pattern of small cells with limited amounts of eosinophilic stain cytoplasm and small uniform rounded nuclei, usually aligned

in a serpiginous interconnecting pattern with intervening fibrinoid material usually acellular, sometimes forming small cystic or pseudo-cystic spaces that often appear to be lined by these small cuboidal to slightly elliptical cells that sometimes are arranged at right angles to the edge of the cystic space and possibly become low columnar in general character. The cells remain uniform without significant atypia. Focal areas of necrosis and hemorrhage are frequently encountered, particularly near one edge at the base and occasionally some of these areas show fibroblastic cell proliferation and accumulation of pigmented macrophages. The tumor varies considerably in cellularity and in some areas appears moderately vascular although it may be simply collections of red cells in the pseudo-cystic spaces crowned by the reticular pattern of the proliferating tumor cells. The lesion seems to be covered by a somewhat narrowed possibly compressed mucosal lining with partly desquamated low columnar epithelial cells characteristic of a respiratory mucosa. This area is interrupted along one side near the base where there is focal hemorrhage possibly the site of previous biopsy. The main tumor lies along the perichondrium, the latter uninterrupted and relatively normal in appearance. At one end, portions of this cartilage are partly calcified. Other smaller fragments of mucosa include considerable fibrous tissue and small seromucinous glands that are normal in appearance and in one section these are seen at the base of the lesion suggesting origin from the particular mucosal pattern.

Diagnosis: Benign mixed tumor of respiratory mucosa, apparently nasal septum. The lesion does not appear to invade the septum per se, except in a very superficial manner and apparently has been completely excised.

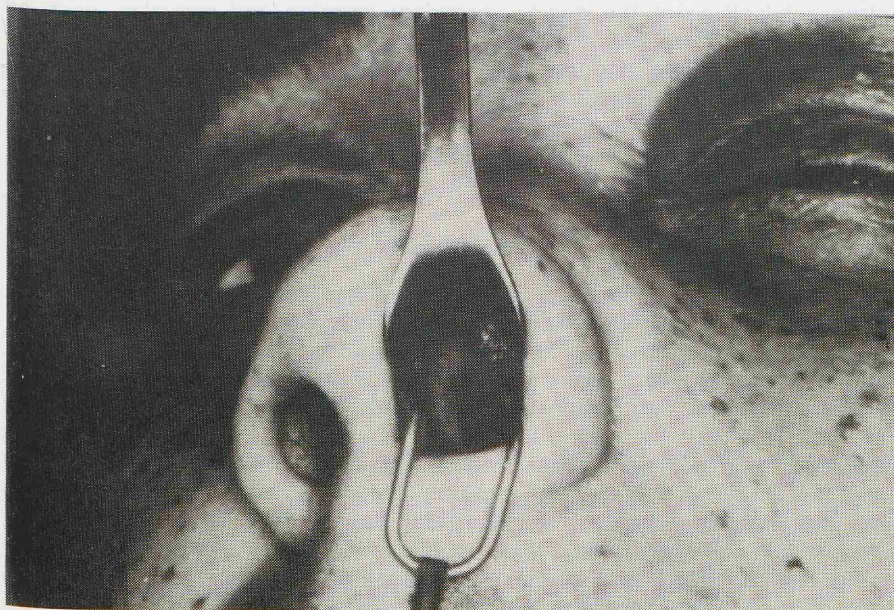


Figure 4. Post-operative result.

**Convalescence:** After 1½ hours of operative time, the patient was returned to the recovery room and then to the ward. On the following day, the compression dressing was removed. There was not a marked amount of blood on the dressing, nor was there much swelling. The external sutures were removed on the 3rd and 4th days and the patient was dismissed to home on the 5th post-operative day. The intranasal packs were left in 10 days and were removed in the office without post-operative bleeding. The teflon splints and TELFA dressing over the skin grafts was teased away from the graft after two weeks and debridement of the area showed the graft "to take".

**Comment:** When seen two years after removal of the lesion, there was no evidence of tumor nor evidence of perforation. The mucous membrane of the nasal septum appeared healthy with little crust formation and no evidence of atrophy of the mucosa. The patient was able to breathe. She no longer sleeps with three pillows and stated that the external nose appeared nicer than before surgery.

### SUMMARY

A mixed cell tumor of nasal mucosal origin is presented in a patient with disturbing symptoms of nasal obstruction and dyspnea. As a method of choice for surgery, Dr. Cottle's maxilla-premaxilla approach to the nasal septum area combining a left hemirhinotomy is used for the total removal of the tumor without removal or destruction of the nasal septum. Reconstruction of the nasal septum by rotation of the nasal lining and by using, as implants, the patient's own septal cartilage and bone; by application of skin grafts to the denuded areas; and by further modification of the lobular cartilages by intranasal incision at the dome; secondary scarring and sequelae, such as atrophy and perforation of the nasal septum, is prevented. The anatomical alterations are not allowed to occur. This case, the 5th in medical literature, has been observed two years post-operatively and illustrates that a surgical approach is possible to remove the lesion in toto, without sequelae and with the preservation of the nasal function and physiology of the nose.

### SUMARIO

Se presenta un paciente con trastornos obstructivos y respiratorios de la nariz provocados por un tumor mixto de la mucosa nasal.

Como metodo quirurgico de eleccion se adopta la tecnica del doctor Cottle, maxilla-premaxilla para llegar a septum nasal, se vale de la hemirrinotomia izquierda para la extirpacion total del tumor sin daño o destruccion del septum nasal.

Reconstruccion del septum por rotacion de la cubierta nasal usando como injerto el cartilago y hueso de su propio septum y aplicacion de injertos en las partes descubiertas, con futura modificacion de los cartilagos lobulares, con incision intra nasal del dome, preveniendo consecuencias secundarias como ciatriz, atrofia o perforacion del septum, las partes anatomicas del septum y la nariz son remplazadas, impidiendo la aparicion de cambios fisiologicos.

Al paciente se la ha observado por dos años luego de la operacion, con esto se demuestra que es posible remover la lesion en su totalidad sin ocasionar trastornos posteriores y con la preservacion funcional y fisiologica de la nariz.

Este caso es el quinto en la liberatura medica.

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