Case Report

Fibromas are rare tumors of the nasal cavity, possibly resulting from nasal mucosal progressive inflammation. The tumors are usually too small to cause symptoms. We present a 47-year-old woman suffering through right nasal obstruction, purulent rhinorrhea and severe headaches for 6 months. A gray-white, smooth-surfaced, gigantic firm mass occupying the right nostril was found in physical examination. Sinus computed tomography revealed 4 × 3 × 3 cm soft-tissue-density mass in the right nasal cavity and right maxillary sinusitis. The huge sinonasal fibroma measuring 4.5 × 3 × 3 cm in the right posterior ethmoid sinus, which was successfully endoscopically resected. The final diagnosis of fibroma was made histologically, according to light microscopy and immunohistochemical stain examinations, which were important for determining the patient's treatment. After endoscopic resection, her initial signs and symptoms were relieved and no recurrence was noted after 2 years of follow up. *(Chang Gung Med J 2004;27:233-7)*

**Key words:** fibroma, paranasal sinus, endoscopic surgery.

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Endoscopic Sinus Surgery Treatment for a Huge Sinonasal Fibroma

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Fibromas are rare tumors of the nasal cavity, which may result from progressive inflammation or fibroblastic proliferation of the nasal mucosa. The tumors are usually too small to cause symptoms. We present a 47-year-old woman suffering through right nasal obstruction, purulent rhinorrhea and severe headaches for 6 months. A gray-white, smooth-surfaced, gigantic firm mass occupying the right nostril was found in physical examination. Sinus computed tomography revealed 4 × 3 × 3 cm soft-tissue-density mass in the right nasal cavity and right maxillary sinusitis. The huge sinonasal fibroma measuring 4.5 × 3 × 3 cm in the right posterior ethmoid sinus, which was successfully endoscopically resected. The final diagnosis of fibroma was made histologically, according to light microscopy and immunohistochemical stain examinations, which were important for determining the patient's treatment. After endoscopic resection, her initial signs and symptoms were relieved and no recurrence was noted after 2 years of follow up. *(Chang Gung Med J 2004;27:233-7)*

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A 47-year-old woman had suffered from progressively severe headaches, insomnia, and right purulent rhinorrhea for 6 months. She was referred to our hospital by a local clinic, under the suggestion of a right nasal tumor. The patient had a history of chronic allergic rhinitis, but no chronic paranasal sinusitis or other associated signs and symptoms such as epistaxis. She also denied a history of head injury and other major systemic diseases. Our physical examinations revealed that the right nostril was occupied by a gray-white, smooth-surfaced, gigantic firm mass (Fig. 1). Under the impression of a right nasal tumor, she underwent sinus computed tomography (CT), which revealed that the right nasal cavity was occupied by a huge, soft-tissue-density mass (Fig. 2). The margin of the mass was well defined and no bony erosion was noted. Additionally, right maxillary sinusitis was also noted. Biopsy in the outpatient department was not available because the surface of the tumor was too hard for biopsy punch forceps and poor patient's tolerance. Therefore, we
performed endoscopic sinus surgery (ESS) to obtain a biopsy specimen. However, a small piece of specimen by biopsy punch forceps for frozen section was not obtained due to the nature of the tumor.

The 4.5 × 3 × 3 cm encapsulated tumor was found occupying the whole ethmoid sinus and one third of the right maxillary sinus with a wide-based stalk attached to the right posterior ethmoid sinus. The tumor was dissected from the stalk and was freed. Before removal, we made an incision in the limen vestibulum nasi for dilatation of the anterior

Fig. 1 Sinoscopic examination revealed a capsulated gigantic tumor occupying the right nasal cavity.

Fig. 2 Sinus CT, (A) coronal and (B) axial section without contrast, showed that the tumor in the right nasal cavity which caused lateral bulging of the medial wall of the right maxillary sinus. An air-fluid level in the right maxillary sinus was noted and sinusitis was suggested.

Fig. 3 The 4.5 × 3 × 3 cm gray-white, smooth-surfaced tumor was removed as a whole via the anterior nare.

Fig. 4 Histological examination showed that the tumor was composed of interlacing bundles of spindle cells with entrapped mucous glands. No nuclear pleomorphism, mitotic activity, or necrosis was seen. (Haematoxylin and Eosin (H & E) stain, ×100)
nare for passage of the large tumor specimen. Because the tumor was gigantic and very adamant, it could only be removed as a whole and not divided into pieces (Fig. 3). After removal, the specimen was sent for frozen section and the initial diagnosis identified the tumor as a benign solitary fibrous tumor (Fig. 4).

After immunohistochemical staining with S-100 (negative), desmin (negative), vimentin (positive), CD 34 (negative), MIB-1 (0%) and smooth muscle actin (negative), the final pathologic diagnosis was fibroma. The patient was discharged after 5 days of hospitalization and had follow-up examinations at 1 month, 6 months and 2 years after the operation. No recurrence was observed in local findings or sinus CT scan (Fig. 5). The patient’s complaints of headache and purulent rhinorrhea resolved and her allergic rhinitis was under medical control.

### DISCUSSION

Fibromas of the upper respiratory tract, like fibromas in other parts of the body, may originate from previous inflammatory reactions or fibroblast proliferations such as in aggressive fibromatosis, which may result in tumors composed of collagen fiber and mature spindle cells. In the nasal cavity, it might also originate from previous polypoid changes or tumors, such as inflammatory polyp or lobular capillary hemangioma. Neither cell infiltration nor peripheral invasion was noted. Fibromas in the upper respiratory tract are found mostly in the pharynx and larynx, but rarely in the nasal cavity. In addition, they are classified as fibrous polyps.(1)

The most common symptoms of fibromas are nasal obstruction, purulent rhinorrhea and headache, which are induced by compression due to the large, sinonasal space-occupying tumor. However, usually, they are smaller then 1 cm and are without clinical signs and symptoms.(3)

Imaging studies can distinguish between solitary and multiple tumors. Furthermore, these examinations show the extent of tumor distribution, invasion, or infiltration of peripheral tissue, and the shape and image density of tumors.(4) Sinus CT scans show the surrounding bony structure and the margin of the tumor. Magnetic resonance imaging (MRI) provides information on the infiltrated margin and invasive depth of the surrounding soft tissue. In our patient, we realized that the tumor was probably benign because of its well-defined margin, intact bony structure, and soft tissue density on sinus CT. Sinus MRI was not necessary for the management of our patient.

The differential diagnosis of sinonasal fibroma includes nasal polyp, solitary fibrous tumor,(2) inverted papilloma, neurofibroma, aggressive fibromatosis,(5) angioma, lobular capillary hemangioma, osteoma, ossifying fibroma,(6) and other malignant tumors. Immunohistochemical staining and light microscopic features provide evidence for the differential diagnosis and prevent the oversight of other systemic diseases such as aggressive fibromatosis, which we would have had to monitor more closely and arrange for further examinations because of its high recurrence rate and the possibility of abdominal involvement.(5,7)

The appearance of a fibroma is a smooth-surfaced, clear margined, polypoid tumor usually small-

![Fig. 5](image-url)
er than 1 cm in diameter. In our patient, the tumor was composed of interlacing bundles of spindle cells, collagen fibers, and few entrapped mucus glands on microscopy. No smooth muscle, large vessel component, nuclear pleomorphism, necrosis, or mitotic activity was noted.

For distinguishing between fibroma and the other nasal non-epithelial tumors, immunohistochemical staining might be a more accurate tool than light microscopy. If smooth muscle actin positively indicates the presence of smooth muscle components, the S-100 positivity would indicate the presence of neurogenic tumor components. Desmin and vimentin are found in muscle cell intermediate filaments. In our patient, the tumor marker CD 34 was negative; but for a solitary fibrous tumor, it should have been positive. Because aggressive fibromatosis usually presents with an infiltrative growth pattern and displays localized smooth muscle actin, we ruled out the possibility of that disease. These special staining results not only support the diagnosis of fibroma, but also are beneficial for treatment planning.

Before endoscopic surgery, it was suggested that the non-epithelial tumor was an osteoid fibroma, according to the patient's history, local physical findings and the location and characteristics of the tumor. However, no calcification or bone density was found in the tumor in sinus CT scan, and the pathology confirmed that the tumor was a fibroma without the evidence of an osteoid component or infiltration of the peripheral tissue.

Like other non-epithelial tumors, fibromas have well-defined margins in the nasal cavity. Only when they are symptomatic or exhibit rapid growth, is tumor excision indicated. Traditionally, patients have undergone a variety of external approaches for resection of larger tumors, but with the advent of sinonasal endoscopic surgery in the middle 1980s, subsequent advances in technology and surgical techniques, endoscopic surgery is now feasible for treatment of these large tumors.

In our patient, sinus CT scan and endoscopic examination findings showed a clear tumor margin and the broad tumor stalk. Because no local invasion of bone and tissue were found, we dissected the tumor from its stalk with endoscopic surgical instruments. However, the tumor was huge and firm, thus, we needed to make a 1-cm longitudinal incision along the limen vestibulum nasi to dilate the vestibule for removal of the whole tumor via the anterior nare. Local recurrences of sinonasal fibromas after surgical treatment have not been documented.

For sinonasal tumors with well-defined margins, excision using endoscopic sinus surgery could be an alternative to traditional sinus surgery. Using the endoscopic sinus surgery enables the patients to have shortened hospitalization, shorter recovery time, reduced wound size, and increased cosmetic benefits.

References

巨大鼻腔繭維瘤

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鼻腔繭維瘤 (nasal fibroma) 是相當罕見的疾病，可能為鼻腔黏膜發炎所產生的後續病變，但往往因為體積小而沒有症狀容易被忽略。在1976年由Fu及Perzin報告的256個上呼吸道非上皮腫瘤的病例中，鼻腔繭維瘤僅佔四例，並且直徑皆小於或等於1公分。一名47歲女性病患其主訴在到本院門診求診前6個月以來，持續發現鼻孔塞及流鼻涕，並有脹重頭痛及失眠的困擾。門診發現右側整個鼻道被表面灰白色光滑、質地非常堅硬的巨大腫塊佔據。鼻竇電腦斷層檢查顯示右側鼻腔有一個巨大軟組織腫瘤及右側上頜竇鼻竇炎。於是安排了右側鼻竇內視鏡手術，以鼻竇內視鏡檢視，將附著於右側篩竇的連接部分切除，但腫瘤分出後，因腫地極度堅硬無法在鼻竇中先行分解至較小體積，所以將右側鼻竇內緣部分切開擴大鼻前庭部後，將腫瘤完整由前鼻孔拖出。術中發現腫瘤由後篩竇長出，並佔據了整個右側篩竇和三分之一上頜竇，大小約4.5×3×3公分，質地堅硬如石，在經過免疫組織化學染色法處理後，病理診斷為繭維瘤。術後一個月及半年門診追蹤，並沒有復發的情形發生，病患主訴頭痛、流膿鼻涕的症狀也獲得解除。

關鍵字：繭維瘤，鼻竇，內視鏡手術。