

## A Case of Organized Hematoma of the Nasal Septum

Sang-youl Lee, MD, Deok-Su Kim, MD, Kyu-Ho Jang, MD and Seung-Heon Shin, MD

*Department of Otorhinolaryngology-Head and Neck Surgery, School of Medicine, Catholic University of Daegu, Daegu, Korea*

### — ABSTRACT —

An organized hematoma is a rare benign tumor with a chronic state of fibrotic tissue surrounding a hemorrhage. Organized hematoma of the nasal septum is very rare in sinonasal cavity. The pathogenesis of organized hematoma has not completely understood. We recently experienced a case of organized hematoma of the nasal septum without history of trauma or coagulopathy. We present a case of organized hematoma of the nasal septum with review of literature. (*J Clinical Otolaryngol* 2016;27:340-343)

**KEY WORDS** : Organized hematoma · Nasal septum.

### Introduction

An organized hematoma is a rare benign disease which can be formed by variety of reasons with angiogenesis and fibrotic organizing process in hematoma.<sup>1)</sup> Most hematomas dissolve and are reabsorbed. However, some of them persist and slowly expand over time as chronic expanding hematoma. Sinonasal hematoma is caused by many reasons such as facial trauma, sinus surgery, vessel ruptures without specific causes and submucosal bleeding in nasal cavity. Hematoma cause mucosal swelling and bony thinning in the paranasal sinus or nasal cavity. However, the exact etiology and pathogenesis of organized hematoma remain unclear. It is hard to diagnose by physical examination or radiologic examination, therefore histologic study is essential for diagnosis. In the rhinologic field, an or-

ganized hematoma is often reported to appear in maxillary sinus,<sup>2-4)</sup> and there is no other case report of organized hematoma in nasal septum except one case in Korea.<sup>5)</sup> We recently experienced a case of organized hematoma developed in nasal septum with nasal obstruction which was histologically diagnosed after endoscopic resection of well-marginated benign mass in the nasal septum.

### Case Report

A 75 year-old female patient was presented with a 2 months history of repeated nasal obstruction. She had no underlying systemic diseases or coagulopathy and no past history of trauma or surgery. Nasal endoscopy showed capillary-filled yellowish mass originating from antero-superior part of nasal septum in left nasal cavity (Fig. 1). On computed tomography, 2.0 × 1.4 cm-sized well-marginated mass with minimal bony change was present in the left nasal septum. Nasal septum was deviated to the right due to the mass effect of the tumor (Fig. 2). At the time of her initial evaluation, punch biopsy was performed to determine the histologic type of septal mass and it revealed as fibrosis with chronic inflammation. Preoperative evalu-

논문접수일 : 2016년 7월 12일  
 논문수정일 : 2016년 9월 23일  
 심사완료일 : 2016년 10월 11일  
 교신저자 : 신승헌, 42472 대구광역시 남구 두류공원로 17길 33  
 대구가톨릭대학교 의과대학 이비인후과학교실  
 전화 : (053) 650-4530 · 전송 : (053) 650-4533  
 E-mail : hsseung@cu.ac.kr

ation including complete blood count, blood chemistry, and coagulation tests were all within normal limits. Septal mass with mucosa was completely removed under nasal endoscope. Patient was discharged on same day without any complication. Specimen was 2.0 × 2.0 cm-sized with clear yellowish margin. Histopathology showed fibrous encapsulated organized he-

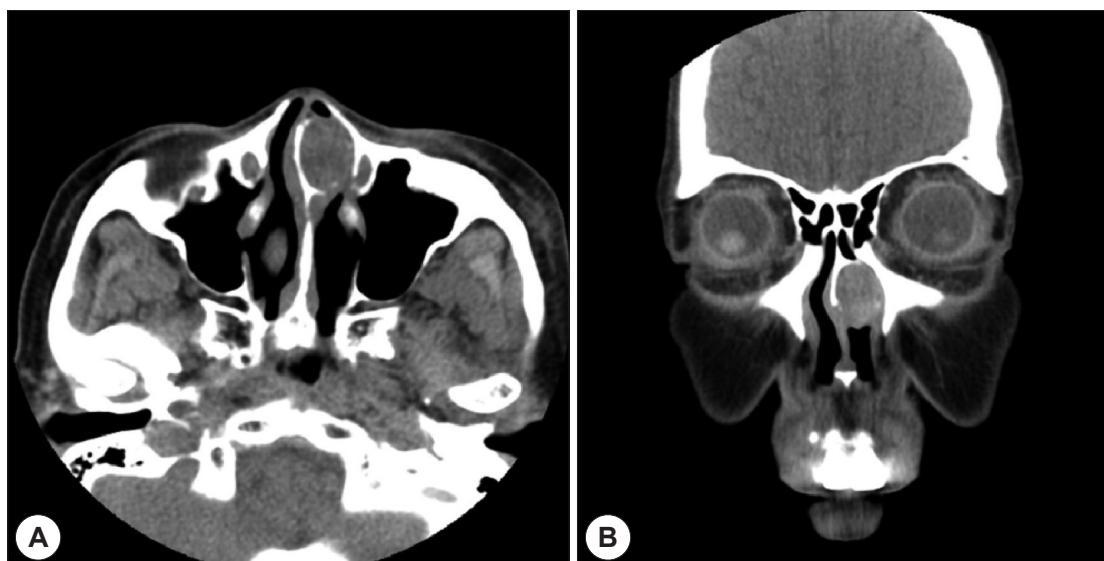
matoma with red blood cell, angiogenesis and fibrosis with surrounding inflamed mucosa (Fig. 3). The patient has remained disease-free for 2 months after the surgical remove (Fig. 4).

## Discussion

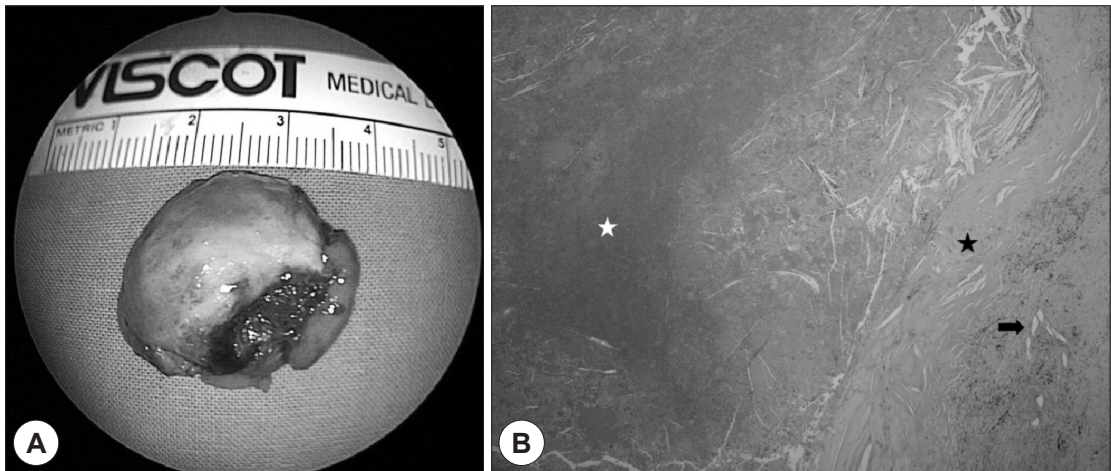
An organized hematoma is a rare benign tumor as a form of mass resulting from many reasons, organization causing angiogenesis and fibrosis in hematoma.<sup>1)</sup> The tumor can occur anywhere in theory.<sup>12)</sup> Many case was reported in intracranial, intraspinal, musculoskeletal system, adrenal gland and lung.<sup>1-4,6)</sup> Although organized hematoma is not a true neoplastic lesion, it has the potential for progressive bony erosion with compression of adjacent structures. Maxillary sinus is the most frequent site of organized hematoma in sinonasal space, followed by sphenoid or frontal sinuses.<sup>7,8)</sup> However, nasal septal organized hematoma is very rare and to our knowledge, only one case was reported.<sup>5)</sup> Mechanism of organized hematoma is not completely understood. Lee et al.<sup>9)</sup> suggested that repeated hemorrhage in the semiclosed lumen forms a hematoma encapsulated by fibrosis, which prevents



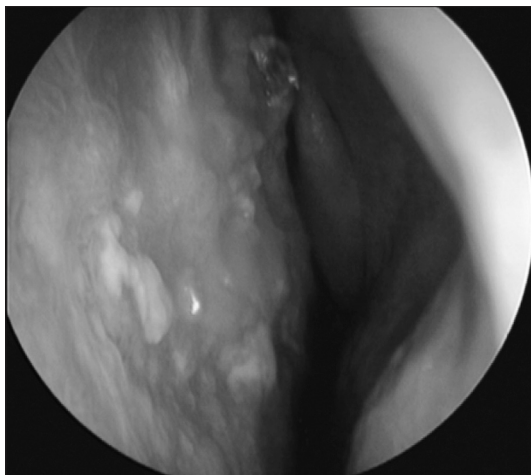
**Fig. 1.** Preoperative endoscopic finding. The tumor has smooth mucosal surface with numerous small vessels.



**Fig. 2.** Axial (A) and coronal (B) computed tomographic view. The 2.0 × 1.4 cm-sized mass was peripheral enhancement. The mass was originated in the left nasal septum.



**Fig. 3.** Gross and histopathologic finding of septal mass. The tumor was removed with the surrounding mucosa (A). Organizing hematoma showing fibrosis (black asterisk), angiogenesis (arrow) and old hematoma (white asterisk) (H&E stain,  $\times 40$ ) (B).



**Fig. 4.** Postoperative endoscopic finding. The operated site covered with mucosa without evidence of residual disease on 2 months after surgery.

the absorption of the hematoma and induces vascularization, which causes rebleeding and increases the pressure within the hematoma. Then expansile lesion influence adjacent structures. In this case, only small amount of subepithelial hematoma was found with angiogenesis and fibrosis since it was developed in the nasal septum. The subepithelial space of nasal septum may be very tight compared with sinus mucosa. And nasal septum is easily exposed to external

stimuli or trauma, often developing lobular capillary hemangioma due to fine stimuli in anterior nasal septum. However, organized hematoma is not commonly developed in the nasal septum.<sup>10)</sup>

In patients with nasal cavity mass effect, history taking, physical examination using nasal endoscope, and radiologic examination such as CT scan should be performed to determine the characteristics of the nasal mass. The patients have various symptoms that depend on the size and location of the mass. Organized hematoma is at first asymptomatic. As the mass enlarges, patients suffer symptoms. The most frequent symptom of sinonasal organized hematoma is nasal congestion and rhinorrhea due to the obstruction by mass and secondary inflammatory reaction by mass itself. Repeated epistaxis is also commonly developed.<sup>11)</sup> The mass gradually enlarges and causes pressure remodeling of the adjacent structures. CT images show non-enhancing heterogeneous soft tissue mass with bony erosion and local expansion. If organized hematoma is developed within the sinuses, it needs to be differentiated with malignant sinus disease however in this case only bony erosion of nasal septum with expansile mass was observed in CT. Although clinical and radiographic findings gave the information to define the sinonasal mass, histologic diagnosis is often

necessary. Histologic type could not be confirmed with punch biopsy at outpatient clinic since tumor capsule was thick, preventing from acquiring enough tissue for diagnosis.

Complete removal of organized hematoma is the treatment of choice and the choice of surgical approach is not a matter of concern.<sup>3)</sup> To make final diagnosis, septal mass was removed endoscopically. Histologically, an organized hematoma appears as a mixture of red blood cells, angiogenesis, and amorphous fiber by fibrosis in hematoma surrounded by fibrotic membranes. In this case, neither cholesterol cleft with reactive foreignbody giant cells which is found in cholesterol granuloma nor spread lobular capillary vessel inside stroma which is commonly found in lobular capillary hemangioma, were present.

In case of patients visiting due to mass in nasal septum, an organized hematoma should also be considered with lobular capillary hemangioma, hemangioma, angiofibroma, papilloma and nasal polyp as differential diagnosis.

#### REFERENCES

- 1) Ito M, Tajima A, Sato K, Ishii S. *Calcified cerebellopontine angle hematoma mimicking recurrent acoustic neuroma. Clin Neurol Neurosurg* 1988;90:65-70.
- 2) Lee BJ, Park HJ, Heo SC. *Organized hematoma of the maxillary sinus. Acta oto-laryngol* 2003;123:869-72.
- 3) Song HM, Jang YJ, Chung YS, Lee BJ. *Organizing hematoma of the maxillary sinus. Otolaryngol Head Neck Surg* 2007;136:616-20.
- 4) Yoon TM, Lee DH, Kim SB, Lim SC. *Organized Hematoma of the Maxillary Sinus: rapid Progression and Complications. Korean J Otolaryngol Head Neck Surg* 2016;59:150-4.
- 5) Ha MS, Song YJ, Han KY, Yeo NK. *A Case of Organizing Hematoma of the Nasal Septum. Korean J Otolaryngol Head Neck Surg* 2010;53:324-6.
- 6) Lee YY, Moser R, Bruner JM, Tassel P. *Organized intracerebral hematoma with acute hemorrhage: CT patterns and pathologic correlations. Am J Neuroradiol* 1986;147:111-8.
- 7) Wu AW, Ting JY, Borgie RC, Busaba NY, Sadow PM, Juliano AF, et al. *Diagnostic characteristics of sinonasal organizing hematomas: avoiding misdiagnosis. Int Forum Allergy Rhinol* 2013;3:598-602.
- 8) Choi SJ, Seo ST, Rha KS, Kim YM. *Sinonasal organized hematoma: clinical features of seventeen cases and a systemic review. Laryngoscope* 2015;125:2027-33.
- 9) Lee PK, Wu JK, Ludemann JP. *Hemorrhagic pseudotumor of the maxillary sinus. J Otolaryngol* 2004;33:206-08.
- 10) Park SK, Cho HW, Jang SH, Park CK. *Clinical study of lobular capillary hemangioma in nasal cavity. Korean J of Otolaryngol Head Neck Surg* 2000;43:402-5.
- 11) Ishiguchi T, Nakamura A, Mochizuki K, Tokuhara Y, Yamane H, Inoue Y. *Expansile organized maxillary sinus hematoma: MR and CT findings and review of literature. Am J Neuroradiol* 2007;28:1375-77.
- 12) Kim GO, Bae CH, Kim YD, Song SY. *A case of slow growing organizing hematoma of the neck. J Clinical Otolaryngol* 2011;22(2):271-4.