

CT

MR

1

CT
MR
가 가
CT
51 MR 15
(antrochoanal polyp), 10 (prolapsed antral mucosa), 10
(inverted papilloma), 9 (aspergillosis), 7
CT MR
CT
T2
가 T2
T1
CT
MR T2 가
CT
(maxillary sinus ostium) (infundibulum) (metal artifact)
가
가

(Fig. 1).

1994 9 1997 8 CT

(1-6)

가 51

(1,5,6).

CT

9-70

가

CT

가

41.3

35:16

. 51

15

, 10

, 10

, 7

CT

GE-CT/T 9800

1998 6 12

1998 12 11

HI Light HiSpeed CT/T (GE Medical System, Milwaukee, WI)

: CT
MR
GE
1.5T (Signa Advantage, GE Medical System, Milwaukee, WI)
T1
T2
Gd-DTPA (gadopentetate digme-glumine, Magnevist, Schering, Germany)
T1
MR
MR

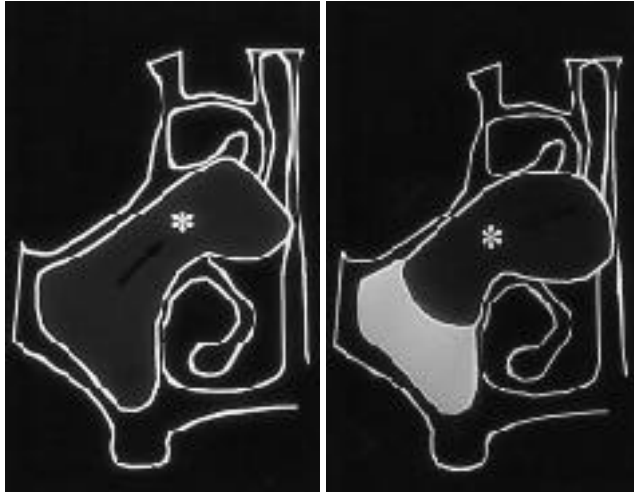


Fig. 1. Schematic drawing of nasal cavity masses.
A. Lesions are arised from the maxillary sinus and extended into the nasal cavity (arrow) through the sinus ostium and infundibulum with the erosion of the uncinate process. This kinds of lesions include prolapsed antral mucosa, antrochoanal polyps, and some of fungus balls.
B. Lesions are arised from the nasal cavity near the infundibulum and extended into the maxillary sinus (arrow) associated with inflammatory disease by obstructed sinus. This type of lesions are inverted papillomas, some of nasal polyps with sinusitis, and some of fungus balls. (* : infundibulum)

T2
CT
(Fig. 2A, 3A, 4A, 5A, 6A).
15 13
(Fig. 2A).
(Fig. 3A)
(Fig. 4A).
가
(Fig. 6A). MR T2
15
(Fig. 2B) T1
(Fig. 2C). T2
(Fig. 3B)
10 T1

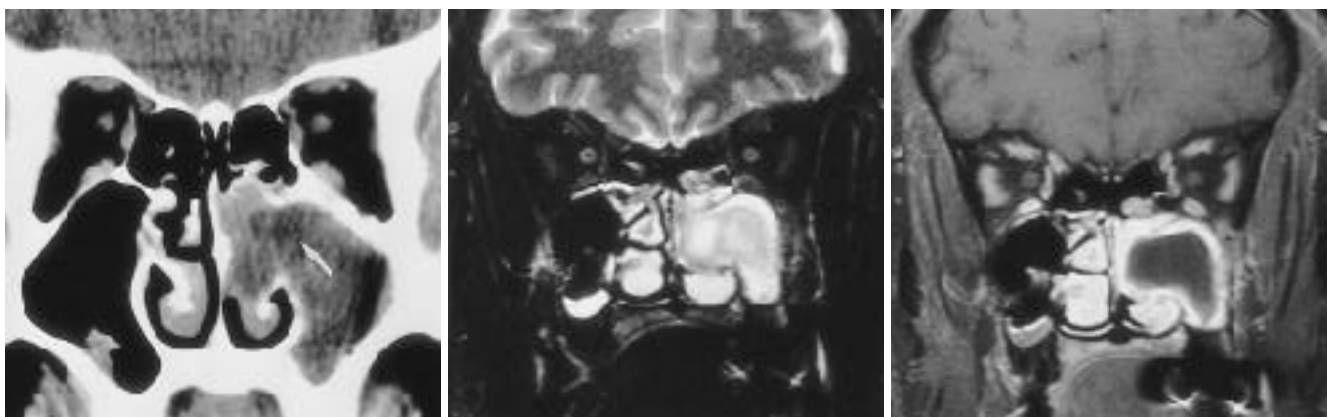


Fig. 2. Prolapsed antral mucosa.
A. On contrast enhanced coronal CT scan, low attenuation soft tissue mass filled in the entire left maxillary sinus extends into the nasal cavity through the sinus ostium. Pressure erosion on the left uncinate process and widened infundibulum are noted (arrow).
B. On T2 weighted image, the lesion shows the central mixed signal intensity with peripheral rim of hyperintensity.
C. On Gd-enhanced T1 weighted image with fat suppression, rim enhancement along the maxillary sinus wall and nasal component is nicely demonstrated. On surgery, the presence of redundant hypertrophic mucosa has been confirmed, and no polyp was found.

(Fig. 3C). 10 T2 가 .

(Fig. 4B). 가 CT 가

T2 (Fig. 5B). CT (1,7-9).

가 CT 가

(Fig. 6B). T1 가

(Fig. 6C) (Table 1).

가 CT 가

가 가 가 (10).

Table 1. MR Findings of Nasal Cavity Lesions Showing Infundibular Widening

Pathology	PAM (n= 15)	ACP (n= 10)	IP (n= 10)	Aspergillosis (n= 9)	Polyp (n= 7)
Pulse sequence					
T1WI	low to intermediate (15)	low to intermediate (10)	low to intermediate (10)	low to intermediate (9)	low to intermediate (7)
T2WI	central mixed signal with peripheral rim of hyperintensity (15)	homogeneous bright (10)	intermediate signal with high signal (10)	dark signal foci (9)	striation of intermediate & high signal (7)
Contrast enhancement	rim (15)	rim (10)	inhomogeneous (10)	rim (9)	linear (7)

PAM= prolapsed antral mucosa, ACP= antrochoanal polyp, IP= inverted papilloma,
T1WI= T1 weighted image, T2WI= T2 weighted image

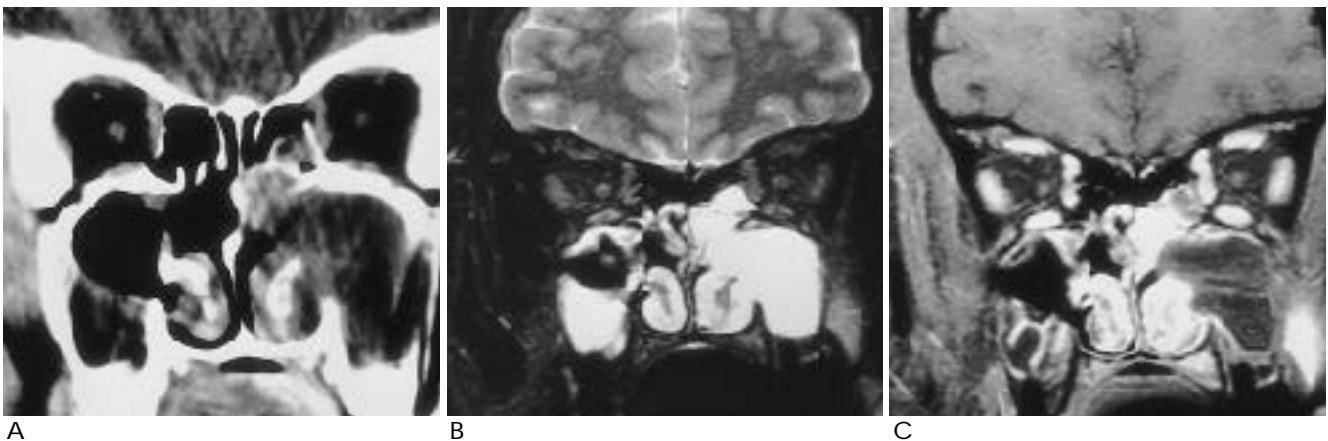
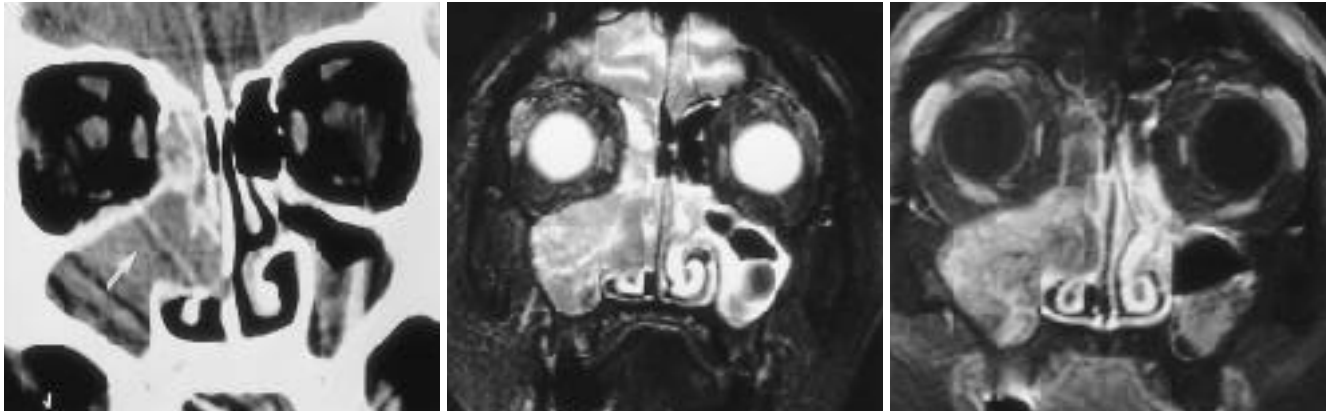


Fig. 3. Antrochoanal polyp.

A. On contrast enhanced coronal CT, low attenuation soft tissue mass is noted in the left maxillary sinus and nasal cavity. This finding is very similar with Fig. 2A.

B. On T2 weighted image, homogeneous bright signal intensity of the nasal and antral component is noted.

C. On Gd-enhanced image, thin rim of enhancement is seen.

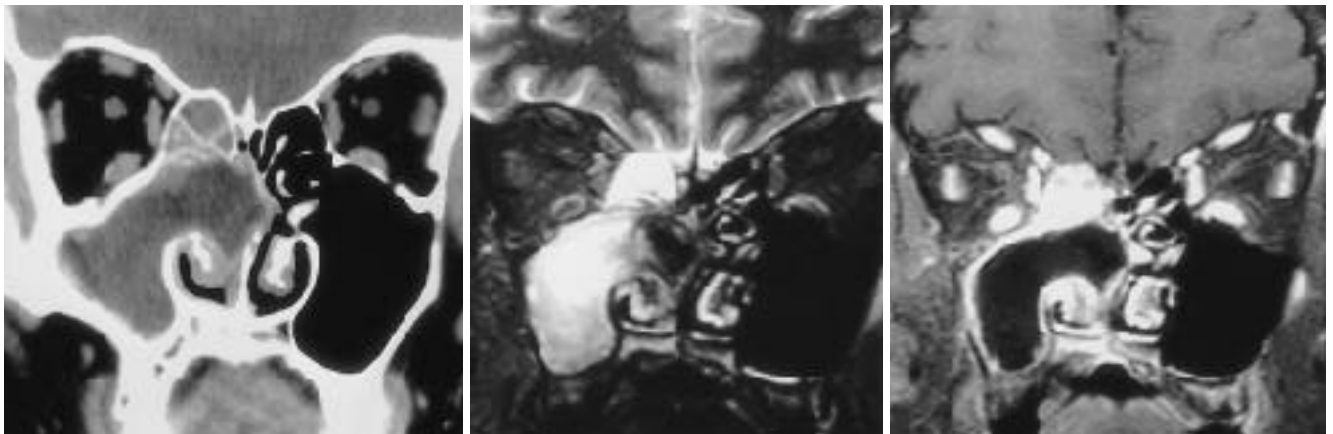


A
Fig. 4. Inverted papilloma.

A. On contrast enhanced CT, enhancing mass occupies in the right maxillary sinus and nasal cavity associated with pressure erosion of the uncinate process and widened sinus ostium and infundibulum (arrow).

B. On T2 weighted image, most of the mass lesion shows intermediate signal intensity mixed with high signal intensities.

C. On Gd- enhanced T1 weighted image, inhomogeneous enhancement is noted.



A
Fig. 5. Aspergillosis of right nasal cavity.

A. On contrast enhanced CT, total opacification of right maxillary sinus and nasal cavity is noted. Pressure erosion on the right uncinat e process and infundibular widening are associated.

B. On T2 weighted image, dark signal foci is noted in the region of right middle meatus.

C. On Gd-enhanced T1 weighted image, peripheral rim enhancement along the right maxillary sinus wall and nasal component, suggesting long standing sinusitis, is noted as well as in prolapsed antral mucosa.

가

가

MR

CT

MR

T2

(1,11).

가

(adenoid cystic carcinoma)

T2

(1).

(cellularity)

T2

(hypertrophy)

(sinus ostium)

(redundant)

가

(2). CT

3

Nino-Murica

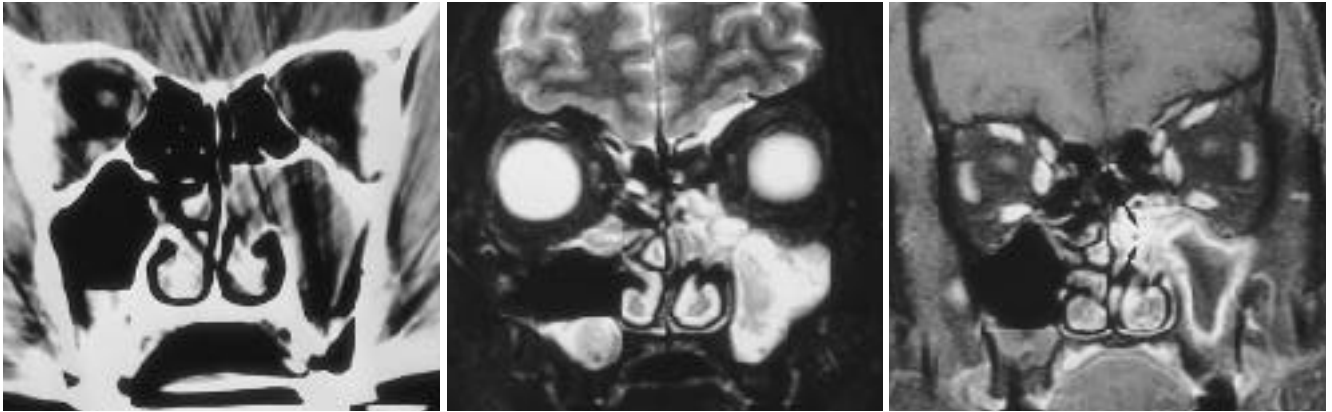


Fig. 6. A. Nasal polyp. On contrast enhanced CT, beam hardening artifact from tooth amalgam hinders demonstration of enhancement pattern.
 B. On T2 weighted image, the nasal cavity lesion shows the striation of intermediate and high signal intensity confined to the left nasal cavity. High signal intensity may represent either mucoid secretion within the background matrix or inflamed mucosa of the polyp.
 C. Peripheral rim enhancement of the maxillary antrum, denoting inflammatory disease. The polypoid lesion can be clearly separate from the sinus inflammatory disease(arrows).

(2).
 T2
 (pyomucocele)
 CT MR
 (posterior fontanelle)
 (1,3,4,7,12)
 CT T2
 cystic degeneration)
 fluid) (3,4,12)
 CT MR
 MR
 (110,13)
 (1,10,13).
 가
 가
 (1,13).
 CT
 MR
 CT
 (mucous cyst inclusion)
 (9).
 MR
 가
 가
 가
 (5,13,14)
 MR
 가
 T2
 (fungal concretion)
 (15,16,17).
 가
 가
 가
 (glycogen)
 가
 가
 가
 (1,5,13).
 CT
 가
 9 4
 T2
 가
 (ferromagnetic element)
 (18).
 가
 MR
 T2
 가
 (7,9).
 T2

1. Som PM. *Sinonasal cavities*. in Som PM, Bergeron RT, eds. *Head and neck imaging*. 3rd ed. St. Louis: Mosby, 1996 : 126-192

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MR Findings of Nasal Cavity Lesions Showing the Infundibular Widening on CT¹

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Purpose : Several kinds of nasal cavity lesions located in the region of the infundibulum on CT. At such time, the visualization of these lesions is very similar. The purpose of this study was to differentially diagnose these nasal cavity lesions through evaluation of the MR findings.

Materials and Methods : In 51 cases of pathologically proven nasal cavity masses which on CT showed infundibular widening, we retrospectively evaluated the MR findings. The cases involved prolapsed antral mucosa from sinusitis(n= 15), inverted papilloma(n= 10), antrochoanal polyp(n= 10), aspergillosis(n= 9), and nasal polyp(n= 7). All patients underwent both CT and MR. imaging.

Results : In all cases, CT findings were similar ; soft tissue masses filling the maxillary sinus and nasal cavity were associated with infundibular widening caused by pressure on the uncinate process, leading to erosion. Differential diagnosis by CT was very difficult ; MR T2 weighted imaging was most effective for differential diagnosis of these nasal cavity masses. Prolapsed antral mucosa showed central inhomogeneous mixed signal intensity, with a peripheral rim of hyperintensity along the sinus wall and nasal component. Antrochoanal polyps showed homogeneous bright signal intensity of the antral and nasal component. Aspergillosis showed central dark signal foci. Inverted papillomas showed mixed intermediate and high intensity mixed with high signal intensity. Nasal polyps showed striation mixed of intermediate and high signal intensity, while nasal polyp showed striation of intermediate and high intensity. On Gd-enhanced T1 weighted images, prolapsed antral mucosa and antrochoanal polyp showed peripheral rim enhancement of the antral and nasal component. In contrast, inverted papilloma and nasal polyp showed intense enhancement of the mass and can be separate from the sinus inflammatory disease.

Conclusion : Various nasal cavity masses showing infundibular widening on CT can be differentiated on MR images, especially of these are T2 weighted or contrast enhanced T1 weighted.

Index words : Nose, neoplasms
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Paranasal sinuses, MR
Paranasal sinuses, abnormalities
Paranasal sinuses, neoplasms

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