

CASE REPORT

Unilateral Nasal Mass Mimicking Tumor in a Young Patient: The Value of Differential Diagnosis

Aikaterini D. LIANO^a, George ALEXIOU^b, Athina ZARACHI^c, Evangelos GIOTAKIS^d, Vasileios RAGOS^e

^aDepartment of Otorhinolaryngology, General Hospital of Filiates, Filiates, Greece

^bDepartment of Neurosurgery, School of Medicine Ioannina, University of Ioannina, 45500 Ioannina, Greece

^cDepartment of Otorhinolaryngology, Head and Neck Surgery, Faculty of Medicine, School of Health Sciences, University of Ioannina, Ioannina, Greece

^d1st Department of Otolaryngology, National and Kapodistrian University of Athens, Hippocrateion Hospital, 115 27 Athens, Greece

^eDepartment of Maxillofacial, Medical School, University of Ioannina, Greece

ABSTRACT

Nasal masses are a clinical entity with great diversity. They present with various symptoms such as nasal obstruction, facial pain, discomfort, epistaxis, headache, anosmia and visual disturbances. Especially unilateral nasal masses are very suspicious and must be differentiated between benign and malignant lesions. Nasal endoscopy is a weapon in the quiver of otorhinolaryngologists. It is an innovative, quick, direct and inexpensive examination that can be performed even at the otorhinolaryngologist's office. Immediate imaging of lesions within the nasal cavity allows rapid initiation of treatment. This article highlights the importance of correct differential diagnosis of a unilateral nasal mass in a 37-year-old female patient.

Keywords: unilateral nasal mass, sinusitis, nasal polyps, malignancy, differential diagnosis.

INTRODUCTION

Nasal masses represent a wide variety of pathologies (1, 2). It can be benign diseases such as inflammatory polyps, inverted papilloma, juvenile angiofibroma, mucocele or malignant neoplasms. Fortunately, usually it is an inflammatory disease, while neoplasms are

rare and constitute 0.2% to 0.8% of all malignancies and about 3.6% of aerodigestive tract neoplasms (3). It is therefore important to differentiate between these lesions. Because many times symptoms and signs are non-specific (such as nasal obstruction, congestion or rhinorrhea), medical history, detailed clinical examination, nasal endoscopy and thorough imaging examination – computed tomography (CT) scan and mag-

Address for correspondence:

Aikaterini D. Lianou, MD, MSc, PhD

Ioannina, 45221, Greece

Tel.: +30 6932932765; email: lianoynikoleta@yahoo.gr

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netic resonance imaging (MRI) – should always be performed (4).

It is also no coincidence that most patients with sinonasal malignancies are diagnosed at an advanced stage, due to the overlap of symptoms with inflammatory diseases. Thus, symptoms such as pain, headache, eye proptosis, trismus, facial hypesthesia and epistaxis are suspicious for invasive malignant disease (5).

In addition, advances in the use of fiberoptic nasal endoscopy even by inexperienced doctors was a revolution in the diagnosis of nasal masses, thus enabling rapid initiation of treatment (6).

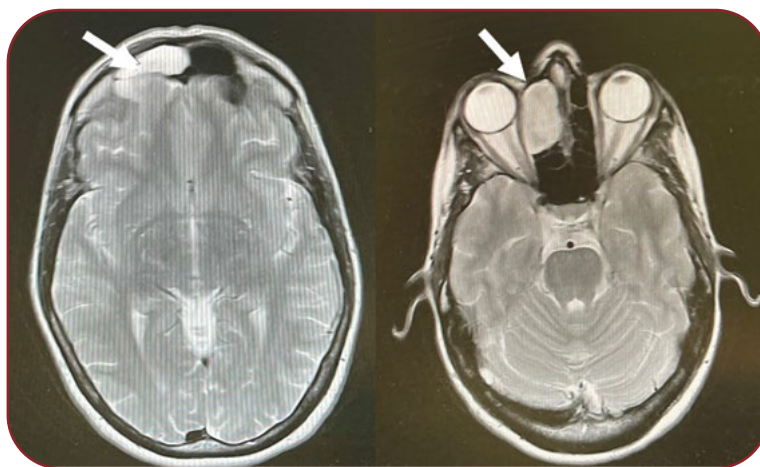
The imaging examination is of great importance to assess the extent of the lesion and to plan the surgical procedure. Computed tomography scan is necessary for the detailed visualization of the anatomical structures of the visceral skull in combination with MRI, which gives information about tumor extension to the orbital, the skull base, the masticator and the parapharyngeal space (7).

Especially, unilateral nasal masses are highly suspected for malignancy and almost always are treated with surgical removal. If possible, preoperative biopsy under local anesthesia is recommended so that the extent of the disease can be determined and the surgical plan can be better defined (8). □

CASE PRESENTATION

A 37-year-old woman presented with rapid onset severe headache after an upper respiratory infection in the emergency department of our hospital, where she was examined by a neurologist and received treatment for migraine. Due to non-improvement of her symptoms, she underwent a MRI scan which showed a homogeneous soft tissue mass that completely occupied the right frontal sinus and extended to the anterior and posterior ethmoidal sinuses, mimicking tumor (Figures 1, 2, 3).

The patient was subsequently referred to the outpatient clinic of our hospital with a delay of two weeks. Nasal endoscopy revealed a non-hemorrhagic mass beneath the middle turbinate, in the area of agger nasi that occupied the right nostril and morphologically did not resemble a polyp (Figure 4). During clinical examination, the patient was asymptomatic. No further lesions and no lymphadenopathy were found, and the larynx



FIGURES 1, 2. Cerebral and sinuses MRI demonstrating opacified right frontal sinus (white arrow) and ethmoidal sinuses



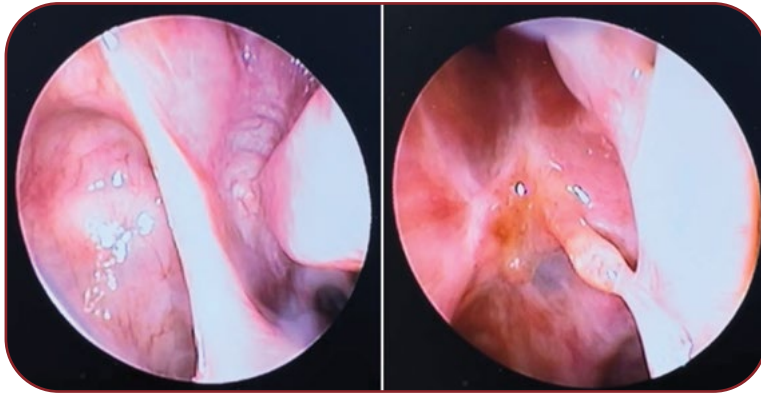
FIGURE 3. Cerebral and sinuses coronal MRI showing a mass occupying the right frontal sinus with extension to ethmoidal sinuses (white arrow)



FIGURE 4. Nasal endoscopy showing a mass (white arrow), beneath the middle turbinate, in the area of agger nasi

was normal. From her medical history, she did not report any sinonasal symptoms, otalgia, odynophagia or dysphagia and was not receiving any treatment. She was a non-smoker and rarely drank alcohol.

Treatment was given with nasal washes, topical corticosteroids and systemic oral predniso-



FIGURES 5, 6. Six-month postoperative nasal endoscopy revealed septoplasty, maxillary antrostomy, anterior, posterior ethmoidectomy and Draf IIA

lone 5 mg, with a gradually reduced dose in the context of differential diagnosis of inflammatory disease, but without improvement of clinical picture after three weeks. She also underwent a sinuses CT scan, which showed a soft tissue mass that completely occupied the right frontal sinus with extension to the anterior and posterior ethmoidal sinuses, images compatible with an inflammatory polyp or a malignant tumor and with no evidence of other sinonasal disease.

After a pre-operative evaluation, included hematological and cardiological tests, we proceeded to an urgent biopsy of the lesion which showed an inflammatory polyp. Then a septoplasty, maxillary antrostomy, anterior and posterior ethmoidectomy and opening of the right frontal sinus (Draf IIA) was performed under general anesthesia. Biopsy was fixed in formalin and sent to a referral laboratory for histological preparation and examination. She was prescribed saline nasal washes and topical steroids. Nasal endoscopy one week and three weeks after surgery showed well-healed nasal mucosa (Figures 5, 6). Six months later, the patient is free of symptoms and without any signs of recurrence. She awaits outpatient review and repeat endoscopic nasal examination. □

DISCUSSION

Every otolaryngologist should be alert when diagnosing unilateral nasal lesions. Malignant disease should always be suspected. For this reason, a thorough pre-operative investigation must be done as the nature of the lesion will determine the extent of surgery (9). The combination of fiberoptic nasal endoscopy with CT scan and

MRI are the gold standard for the pre-operative diagnosis of sinonasal diseases. In particular, CT scan depicts the bony structures in detail, while MRI provides information for the extent of the tumor in the surrounding soft tissues (10). However, do not provide information about mucosal surface and secretions. The use of fiberoptic nasal endoscopy fill this gap (11).

Great caution is required as many times malignant tumors, in early stages, do not show radiological signs of malignancy (such as bone destruction, orbital invasion, skull base invasion, perineural tumor spread, lymph node spread, intracranial extension) and, on the other hand, benign diseases (e.g., allergic fungal rhinosinuitis) are particularly aggressive and mistakenly perceived as neoplasms (12). Thus, pre-operative biopsy under local anesthesia if there is no contraindication (e.g. meningocele, juvenile angiofibroma) is necessary (13).

Many studies have been published evaluating the sensitivity and specificity of preoperative biopsy of nasal lesions. Han et al reported that, in 521 nasal biopsy specimens, the sensitivity was 43.7% and specificity 98.9% for malignant tumors, and 78.2 and 96.2%, respectively, for benign tumors (14). Of course, the combination of endoscopic biopsy and pre-operative imaging showed better results. Tabaei et al report a sensitivity of 71% and a specificity of 93% in a sample of 25 patients (15).

In our case, the initial appearance of the lesion on nasal endoscopy did not resemble an inflammatory polyp. We had to exclude other lesions such as inverted papilloma and nasal carcinoma, that's why we performed a biopsy under local anesthesia. Of course, very good local anesthesia and cooperation of the patient was required. □

CONCLUSIONS

In conclusion, nasal masses concern a large percentage of patients. Every unilateral nasal lesion should be considered very carefully and the differential diagnosis should include benign and malignant diseases. A complete clinical and imaging examination must be carried out in order to plan the surgical procedure. □

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