Clinical history

An otherwise healthy 13-year-old male was suffering from sinusitis and nose obstructive symptoms, before he presented two months later with fever and diplopia in the emergency room at the local hospital. The diagnosis of maxillary sinusitis was made after performing plain radiographs of the paranasal sinuses (Fig. 1a and b).

Because of persistent nose obstructive symptoms, he was referred to the ear-nose-throat out-patients department, where a big mass was identified in the patient’s right nasal cavity. This was confirmed on CT scan (Fig. 2). Subsequently, he was referred to our university medical centre, where an MRI (Fig. 3a and b) was made, followed by digital subtraction angiography (Fig. 4).

Imaging findings

Figure 1: Plain radiography of the paranasal sinuses.
Fig. 1a: AP-view. Asymmetrical nasal cavity with partial opacification of the ethmoid sinus at the right side, opacification of the right sphenoid sinus and mucosal thickening of the right maxillary sinus.
Fig. 1b: Lateral view: posterior wall of the maxillary antrum is slightly bowed in anterior direction.

Figure 2: CT scan, axial view.
There is a big lobulated soft tissue mass centered in the sphenopalatine foramen. The tumor invades the posterior right nasal cavity, right pterygopalatine fossa, bowing the posterior wall of the maxillary antrum in anterior direction.

Figure 3: MRI of the paranasal sinuses.
Fig. 3a: Axial T2-weighted image: The mass has a heterogeneous signal, with flow voids, on this sequence. On T1-weighted images (not shown) the lesion presents with intermediate signal intensity.
Fig. 3b: Axial T1-weighted image after gadolinium administration. The mass shows prominent homogeneous enhancement.

Figure 4: Digital subtraction angiography of the right external carotid artery.
The angiogram shows the feeding artery (pterygopalatine portion of the internal maxillary artery) and the hypervascular lesion as early persistent prominent enhancement. Notice there is no enlargement of the feeding arteries.

Mazuri A., Eshghi O.
Department of Radiology,
University Medical Centre Groningen, Postbus 30001, 9700 RB Groningen, The Netherlands

e-mail address for correspondence: a.mazuri@umcg.nl
The diagnosis of juvenile angiofibroma was made on the basis of CT and MRI findings in combination with the clinical presentation. This diagnosis was confirmed by angiography during preoperative embolization, and by histology after surgical resection.

Comment

Juvenile angiofibromas (JAs) are highly vascular tumors. JAs account for 0.5% of all head and neck tumors and appear almost exclusively in males between the ages of 8 to 23 years, with a peak at 14-17 years. Symptoms are determined by tumor location and size; initially, unilateral nasal obstruction with or without epistaxis occur most frequently. Although they are histologically benign neoplasms they often grow aggressively, spreading by local invasion throughout the nasal fossa, with possible extension into the nasopharynx, pterygopalatine fossa, and later into the orbit, infratemporal fossa, paranasal sinus and intracranial cavity. The diagnosis of JA is made by CT and MRI imaging. JAs may be life-threatening due to the potential risk of bleeding and intracranial invasion. The treatment of choice is complete surgical removal. JA-resection is often associated with significant intraoperative bleeding due to its hypervascular nature. That is why preoperative embolization is recommended.

Key words

Juvenile angiofibroma – Nasopharyngeal tumor

References


Mazuri A., Eshghi O.
Department of Radiology, University Medical Centre Groningen, Postbus 30001, 9700 RB Groningen, The Netherlands

e-mail address for correspondence: a.mazuri@umcg.nl