



Clinical features of non-functioning sellar and parasellar lesions in the transition age: a retrospective Italian multi-centre study



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INTRODUCTION

The most common sellar-parasellar lesions reported in paediatric and adolescence cohorts are functioning pituitary neuroendocrine tumours, whereas non-functioning pituitary tumours and non-endocrine lesions are less frequent and have been poorly investigated.

MATERIAL AND METHODS

In a retrospective Italian multicentre cohort study, hospital records (from 2011 to 2021) of patients aged 15-25 yrs at the time of diagnosis were reviewed in terms of prevalence, clinical and hormonal features at diagnosis. Patients were divided according to the diagnosis in 2 groups: non-functioning pituitary tumours (Group A) and non-endocrine sellar-parasellar lesions (Group B). Data are presented as median (interquartile range, IQR: 25th; 75th percentile).

RESULTS

Forty-one patients (20 F/21 M) were included, with a median age of 17 yrs (15.5-21.5), 12 in Group A (including 5 macroadenomas) and 28 in Group B (11 germinomas, 7 Rathke cells cysts, 4 craniopharyngiomas, 3 astrocytomas, 1 teratocarcinoma, 1 Langerhans cell histiocytosis, 1 granular cell tumour). In Group B, patients were younger [16.5 yrs (15.5-21.7) vs 18 yrs (18-21), $p=0.019$] and leaner [BMI kg/m^2 , 22.7 (18.8-25.3) vs 28.0 (22.8-29.6), $p=0.016$] than in Group A, without sex differences. They also had larger lesions than in Group A [2 cm (1.1-3.5) vs 0.6 cm (0.5-1.0), $p=0.007$]. Pre-surgical diabetes insipidus was only seen in Group B (6 patients), in which anterior hormone deficiencies were also more frequent and numerous. At diagnosis, galactorrhea was seen only in Group A (2 patients), with no differences in the prevalence of oligo-amenorrhea, delayed puberty, headache, and visual disturbances.

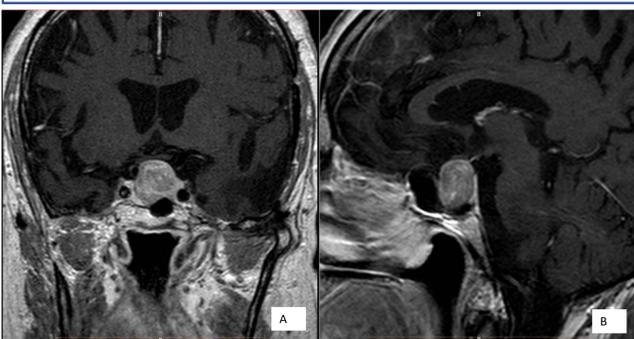


FIGURE 1 A non-functional pituitary adenomas in a 20 year old patient
A, Coronal T1- enhanced magnetic resonance image showing an inhomogeneous solid lesion with the involvement of the optic chiasm. B, Sagittal T1- enhanced magnetic resonance image showing the suprasellar extension of the lesion

Pituitary tumours



Non-endocrine lesions

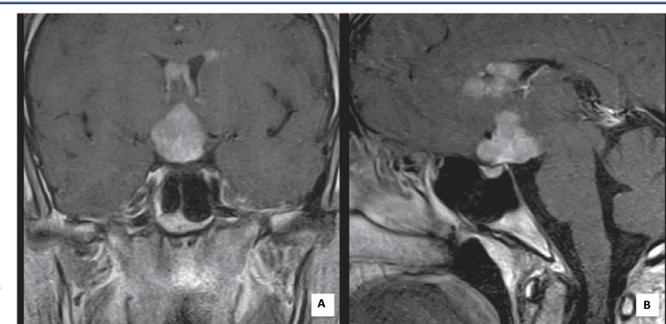


FIGURE 2 A germinoma in a 17 year old patient
A, Coronal T1- enhanced magnetic resonance image showing an inhomogeneous solid lesion with the involvement of the third ventricle. B, Sagittal T1- enhanced magnetic resonance image showing the suprasellar extension of the lesion, clearly separated from the normal pituitary gland

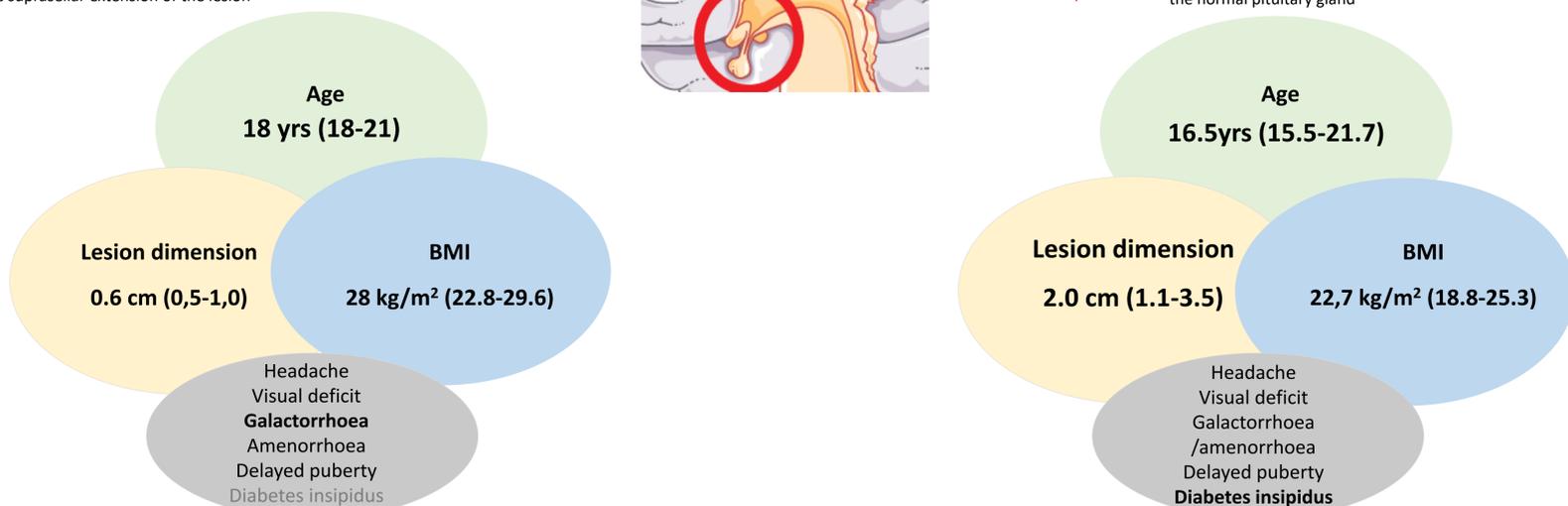


Figure 3. Significant differences between pituitary tumours (Group A) and non-endocrine lesions (Group B)

DISCUSSION

These data point out the peculiar clinical features of sellar-parasellar lesions in the transition age and in young adulthood. In fact, they differ from paediatric lesions by the low prevalence of craniopharyngiomas, and from adult patients above 25 yrs old by a lower prevalence of non-functioning pituitary tumours, which are more frequent in adults. Remarkably, among non-endocrine lesions, germinomas were the most frequent, and other malignancies could be observed. Diabetes insipidus is typical of non-endocrine lesions. These aspects should be taken in mind for an appropriate diagnosis and management of non-functioning lesions in this age group.

References: 1. Sbardella E, Puliani G, Feola T, et al. A clinical approach to parasellar lesions in the transition age. *J Neuroendocrinol.* Jun 2021;33(6):e12995. doi:10.1111/jne.12995 2. Colao A, Pirchio R. Pituitary Tumors in Childhood. In: Feingold KR, Anawalt B, Boyce A, et al, eds. *Endotext.* 2000

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