

Occurrence of a germinoma 22 years after resection of a mature cerebral teratoma

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Abstract We present the rare case of a 31-year-old man who developed a germinoma 22 years after resection of a mature teratoma of the pineal region. The initial stereotactic biopsy showed a granulomatous inflammation, but no malignant cells. The correct diagnosis could only be confirmed in a second cerebral biopsy, allowing for proper treatment with radiation therapy. The need to consider metachronous germinoma in this setting is discussed.

Keywords Germinoma · Stereotactic cerebral biopsy · Teratoma

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Introduction

Germ cell tumors are derived from cells, which, in the developing embryo, become sperm or egg cells. They are often found in the testes or ovaries, and extragonadal in sites along the midline of the body, such as the pineal region of the brain [1]. The most common cerebral germ cell tumor is the germinoma, a malignant dysontogenetic tumor that consists of undifferentiated cells. Cerebral nongerminomatous germ cell tumors are mostly teratoma, which contain differentiated cells from more than one germ layer. Mixed tumors composed of germinoma and teratoma as well as metachronous occurrence of both tumor entities, teratoma and germinoma, rarely have been reported [2–5].

Case report

In 1983, a 9-year-old boy of Turkish origin had been admitted to the hospital with clinical signs of a hydrocephalus. Cerebral computed tomography revealed a tumor in the pineal region. The neoplasm was resected in 1984 and histologically classified as mature teratoma (Fig. 1a).

More than 22 years later, December 2005, the patient progressively developed fatigue and a lack of motivation. In the following, he additionally suffered from arthralgia, weight loss of approximately 10 kg, and polyuria/polydipsia. The initial cerebral magnetic resonance imaging (MRI) in January 2006 showed no pathological findings (Suppl. Fig. 1a). Under the assumption of a granulomatous inflammation, the patient was treated with prednisolone (initially 30 mg/day) and soon recovered. However, when prednisolone was withdrawn, the complaints reappeared in