

Pineal germinoma

[Pineal germinoma](#) is a [intracranial germinoma](#) in the [pineal region](#).

Epidemiology

There is a marked male predominance with a M:F of ~13:1. Most patients are 20 years or younger at the time of diagnosis.

It is the most common tumour of the pineal region but accounts for less than 1% of all [intracranial tumors](#) ^{1) 2)}.

Pineal germinomas are the most common tumour of the pineal region accounting for ~50% of all tumours, and the majority (~80%) of intracranial germ cell tumours.

Clinical features

They can result in mass effect and compression of the [tectal plate](#) leading to [obstructive hydrocephalus](#) and [Parinaud syndrome](#).

Patients with pineal germinoma present with clinical features of hypothalamic-pituitary axis dysfunction.

Diagnosis

see [Pineal germinoma diagnosis](#).

Differential diagnosis

pineal parenchymal tumours

pineocytoma

pineal parenchymal tumour with intermediate differentiation

papillary tumour of the pineal region

pineoblastoma

germ cell tumours

pineal germinoma: most common (~ 50% of all tumours)

pineal embryonal carcinoma

pineal choriocarcinoma

pineal yolk sac carcinoma: endodermal sinus tumour

[pineal teratoma](#)

astrocytoma of pineal gland

pineal metastasis

[pineal cyst.](#)

meningioma near pineal region

other rare entities

cavernoma in pineal region

aneurysm in pineal region

If invasive, a tectal plate mass may be difficult to distinguish from a pineal mass.

Treatment

In general, pineal germinomas associated with hydrocephalus are commonly managed by endoscopic biopsy and ETV, followed by chemotherapy and/or radiotherapy ^{3) 4) 5) 6)}.

The non-surgical standard of care is cisplatin-based chemotherapy followed by focal radiotherapy ^{7) 8) 9) 10)}.

Radiation therapy

The optimal radiotherapeutic management still remains controversial.

For localised intracranial lesions, no differences would be evident in relapse rates or patterns of relapse when treating with localised radiotherapy alone compared with craniospinal irradiation ¹¹⁾.

It has been reported that the response to radiation therapy would be slower in granulomatous than in non-granulomatous germinomas, but the prognoses of these subtypes remain unclear owing to their rare occurrence ^{12) 13)}.

Prognosis

Primary germinoma of the central nervous system carries a good prognosis because of their radiosensitivity. Recurrence is rare and extraneural metastases are even more unusual.

The prognosis following pineal germinoma is very good with a reported 5-year survival rate above 90% ¹⁴⁾.

The most common tumors to metastasize via ventriculoperitoneal shunt are germinoma of the pineal gland and medulloblastoma.

Case reports

Pineal Germinoma Case Reports.

1) 12)

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