

¹³¹I accumulation in oligodendroglioma: before and after surgery

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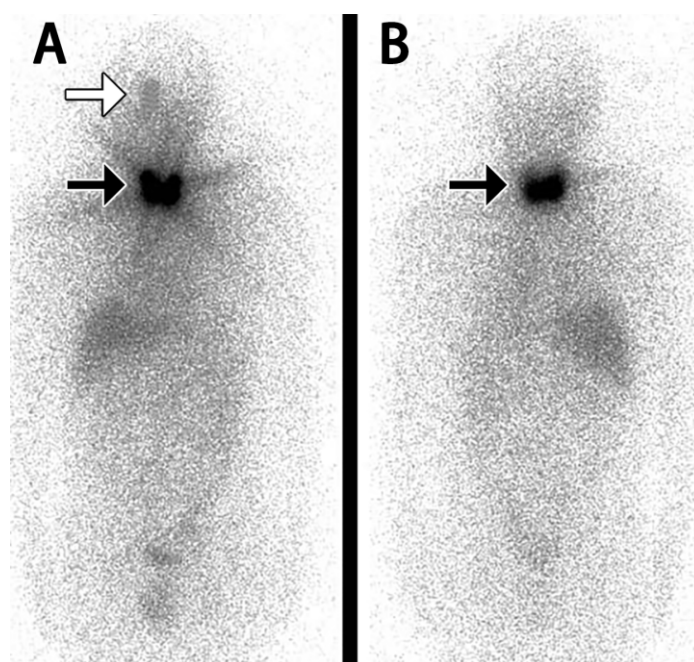


Figure 1. A 49 year old man with papillary thyroid cancer underwent iodine-131 (¹³¹I) therapy with a dose of 3.7GBq after thyroidectomy. His serum thyroglobulin level was 112.4ng/mL. Seven days later, an ¹³¹I whole-body scan showed a focal point in the central area of the neck due to residual thyroid tissue (A-B, black arrows) and an unexpected focal point in the right craniocerebral region (A, white arrow). At that time, the lesion in the right craniocerebral region could not be excluded as a metastasis from thyroid cancer.

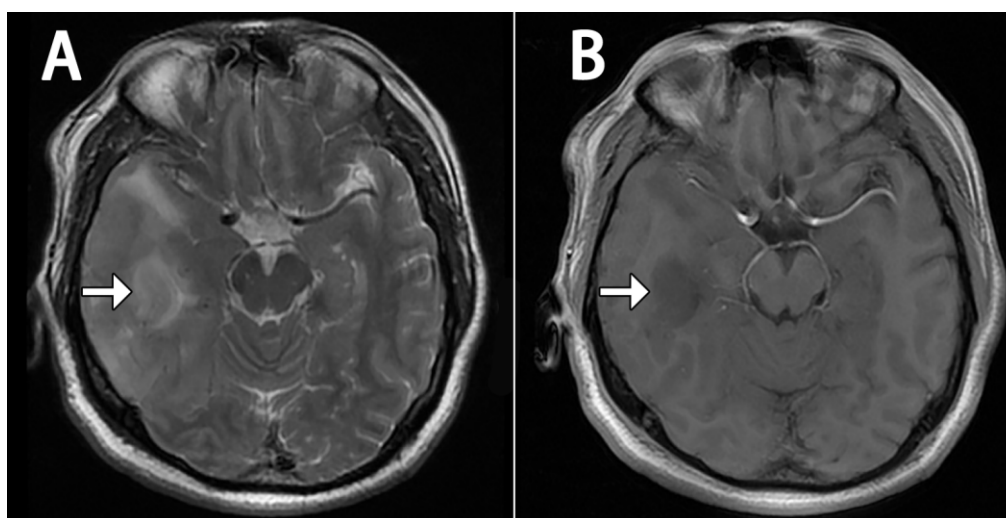


Figure 2. One month later, the patient was sent to the emergency department of our hospital because of a seizure. A magnetic resonance imaging (MRI) scan of the head showed hyperintensity in the right temporal lobe on T2 weighted imaging (T2WI) and hypointensity on T1 weighted imaging (T1WI) (A-B, arrows). The mass was subsequently surgically removed. Histological examination confirmed that the mass was oligodendroglioma with a mutation in the IDH1 gene (R132H) and a loss of 1p/19q heterozygosity. Further inquiry also revealed that the patient experienced two epileptic fits six months earlier.

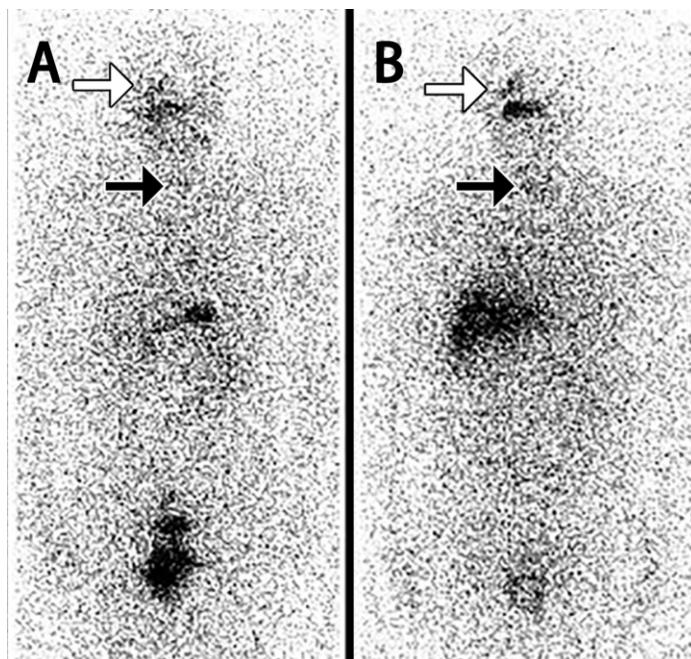


Figure 3. The patient returned to our department 11 months later. A diagnostic whole-body ^{131}I scan revealed a mildly ^{131}I -positive lesion in the thyroid area (A, black arrow) and another mildly ^{131}I -positive lesion in the right cranio-cerebral region (A, white arrows). The thyroglobulin level at that time was 31.85ng/mL. He received a second ^{131}I dose of 3.7GBq. Seven days later, a therapeutic whole-body scan showed two ^{131}I -positive lesions (B, black and white arrows). The lesion in the right cranio-cerebral region had a dramatically lower activity and smaller size than in the previous image.

Pathological ^{131}I accumulation in the cranio-cerebral region has been reported due to the distant metastasis of differentiated thyroid carcinoma, intraosseous hemangioma, and meningioma [1-5]. In this case, ^{131}I accumulated in oligodendroglioma, and after the operation, the accumulation decreased. More research is needed on the mechanism of accumulation.

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