

# A case report of Malignant Catatonia associated with Reversible MRI changes in the splenium of the corpus callosum

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## Introduction

- Reversible splenial lesion syndrome (RESLES) is attributable to a wide range of psychiatric and medical disorders. It is characterised by MRI evidence of an isolated lesion that has transiently reduced diffusion in the splenium of the corpus callosum, coupled clinically with neurological deficits.
- Malignant catatonia is a rare life-threatening neuropsychiatric condition.
- According to the DSM-5, catatonia includes three or more of the following symptoms: stupor, waxy flexibility, catalepsy, mutism, mannerisms, stereotypes, grimacing, posturing, negativism, agitation, echolalia or echopraxia.
- Malignant catatonia additionally involves abnormal autonomic regulation such as pyrexia and altered heart rate, respiratory rate and blood pressure, along with raised creatine kinase (CK) levels.
- Malignant catatonia often shows symptom overlap with neuroleptic malignant syndrome (NMS).
- The mainstays of treatment for these conditions are benzodiazepines and electroconvulsive therapy.
- Previous literature has suggested a link between catatonia and RESLES, however there is limited evidence.
- This is a case report of malignant catatonia associated with reversible MRI changes in the splenium of the corpus callosum.

## Case Summary

- 22-year-old man treated with olanzapine for schizoaffective disorder, first episode of psychosis at age 20.
- He presented to a general hospital being initially elated, disinhibited with marked increased psychomotor activity transitioning to clouded consciousness and prominent catatonic symptoms over a week.
- He deteriorated to an akinetic state with waxy flexibility and mutism, associated with fever and rise in creatinine kinase (CK) peaking >8000.
- A diagnosis of malignant catatonia was made.
- He required nutritional support via a nasogastric tube for two weeks.
- He was initially treated with intravenous lorazepam, and later switched to oral lorazepam.
- An MRI brain showed high signal lesions within the splenium of the corpus callosum, with no other abnormalities identified.
- Improvement in symptoms was achieved with gradual increase of daily dose of lorazepam, with the most significant clinical change at the dose of 16mg/day oral lorazepam.
- At this dose, the patient became more responsive to external stimuli, verbally engaging and not displaying rigidity.
- Repetition of the MRI brain after 4 weeks showed resolution of the lesion of the corpus callosum, consistent with findings of RESLES.

## Imaging Findings:

MRI changes restricted to the splenium were seen (Figures 1a and 1b), which have disappeared on repeat scanning 4 weeks later (Figures 1c and 1d). This was consistent with findings of reversible splenial lesion syndrome (RESLES).

Figure 1a – Sagittal T2 view of first MRI brain, with red arrow showing high signal lesion on the splenium of the corpus callosum.

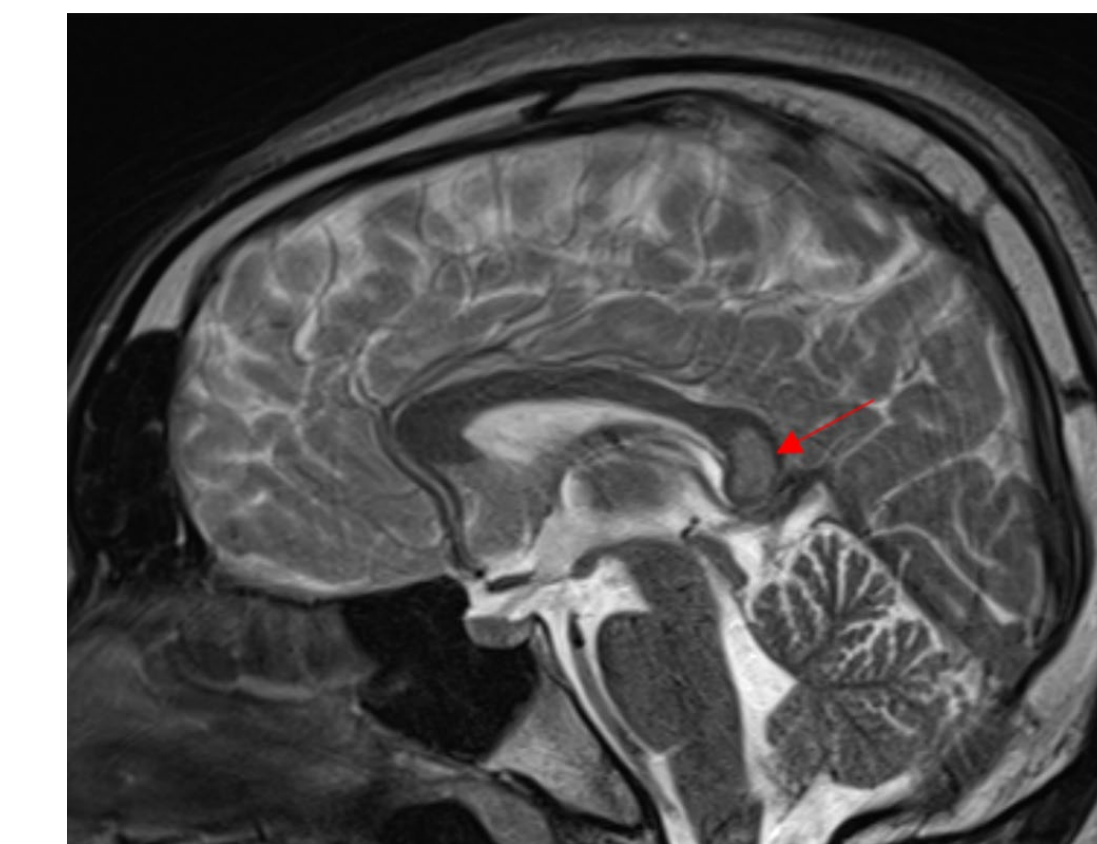


Figure 1b – Axial flare sequence with red arrow showing high signal lesion on the splenium of the corpus callosum.

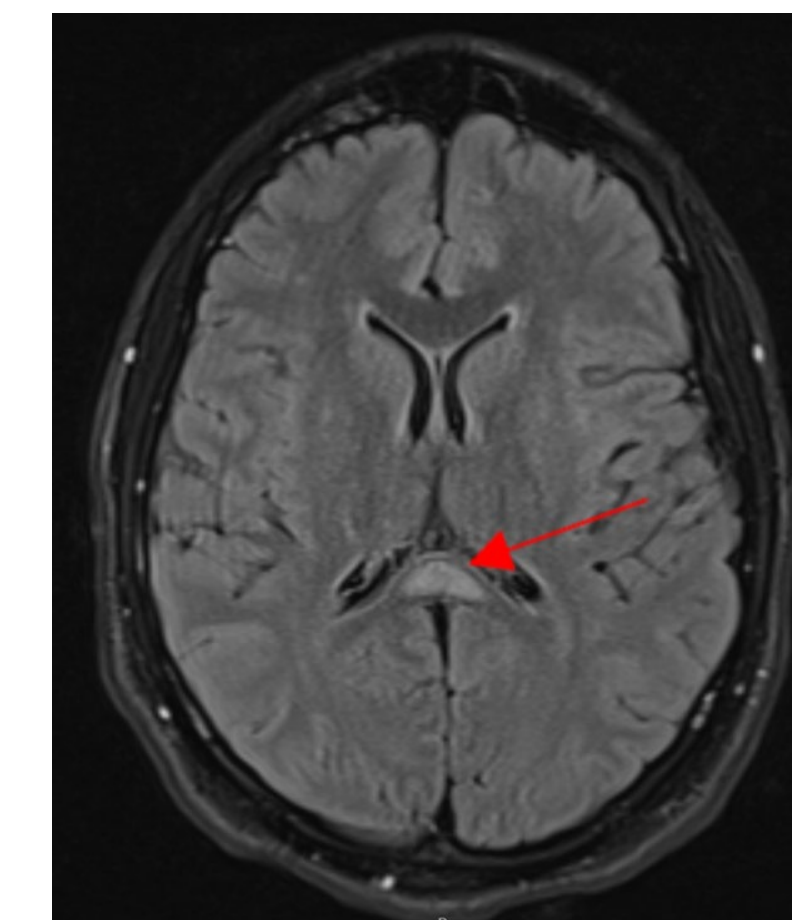


Figure 1c – Sagittal T2 view of repeat MRI brain 4 weeks later, showing complete resolution and reversibility of the splenial lesion.

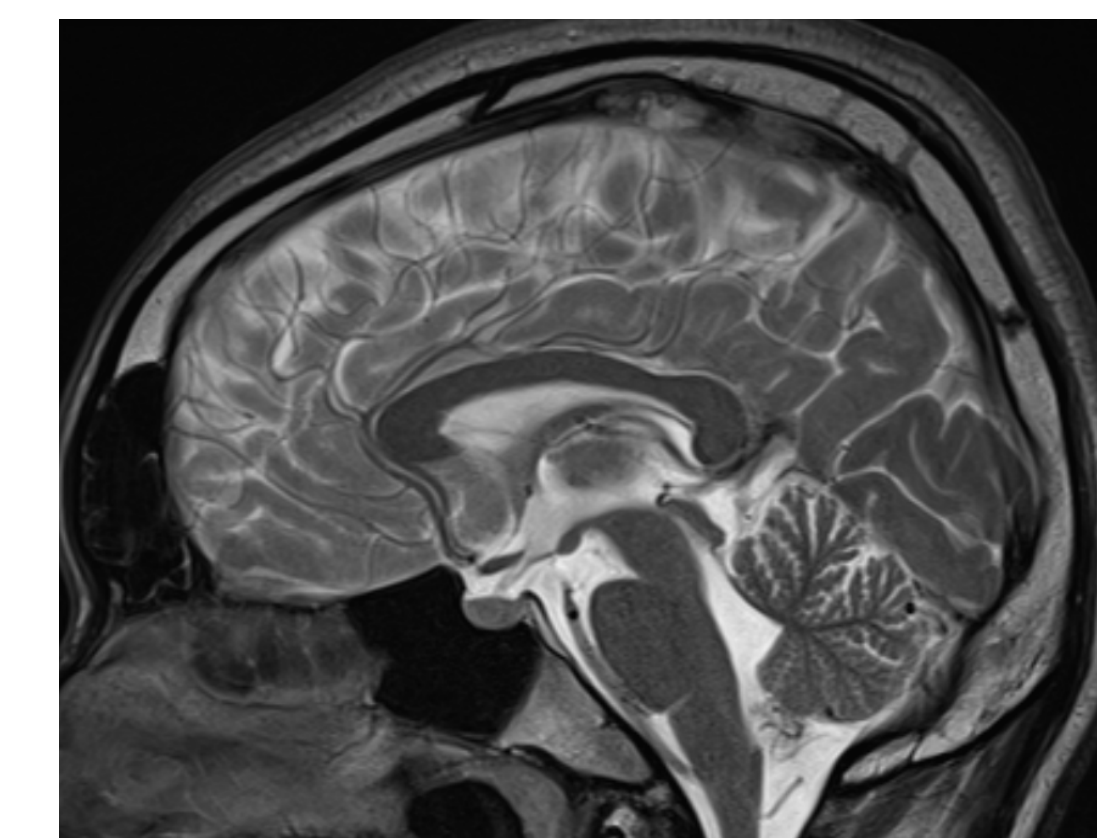
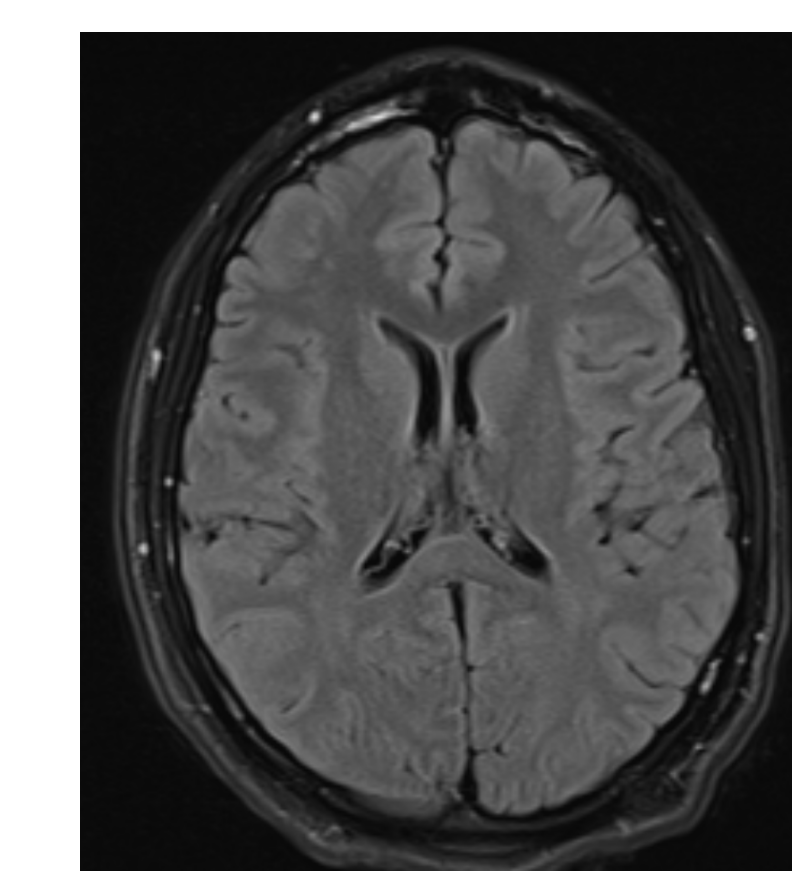


Figure 1d – Axial flare sequence of repeat MRI brain 4 weeks later showing complete resolution of the splenial lesion.



## Conclusion

- Previous literature has suggested a link between the corpus callosum and psychiatric disturbances, however it is poorly understood.
- Mild encephalopathy with reversible splenial lesions (MERS) has most frequently been described in children in East Asia and Japan (1). There are a wide range of other reported associations and neuropsychiatric diseases are increasingly being described (2).
- This case shows a link between malignant catatonia and RESLES for which there is currently limited evidence. These MRI changes may be an under-reported but are non-specific.
- The nature of this link remains unclear, and it may not be causal.
- A larger cases series would be useful to determine MRI changes in malignant catatonia.

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