Early relapses in Cerebral Amyloid Angiopathy-Related Inflammation: a case report.

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BACKGROUND AND AIM

Cerebral Amyloid Angiopathy-Related Inflammation (CAA-ri) is a rare cause of subacute leukoencephalopathy responsive to immunosuppressive treatment. The clinical presentation includes rapidly progressive cognitive decline, seizures, and headaches. Although CAA-ri typically presents with a monophasic pattern, recurrences have been occasionally reported (1). The most typical brain MRI findings are asymmetric white matter lesions that extend to the immediately subcortical white matter (2).

CASE REPORT

A 55-year old man presented with left partial seizures, headache, and behavioral changes. His past history included hypertension and a colorectal cancer diagnosed one year before, for which he had undergone also chemotherapy with fluorouracil and oxaliplatin, with complete remission. A rapidly cognitive impairment with onset before the cancer diagnosis was reported; in addition, an acute confusional episode and left partial seizures had occurred 10 and 4 months earlier, respectively. Neuroimaging findings at those times showed extensive white matter abnormalities (**Fig. 1 and 2**); in the absence of infectious diseases or recurrence of neoplastic illness, intravenous steroid treatment was practiced, with partial clinical and radiological recovery.

- The neurological examination showed a mild flaccid left hemiparesis
- Brain MRI revealed cortical-subcortical, and white matter FLAIR hyperintensities involving the temporal, parietal and occipital lobes mainly of the left hemisphere, with leptomeningeal contrast enhancement. T2-GRE/SWI sequences revealed sulcal superficial siderosis and multiple areas of subcortical microhemorrhages (**Fig. 3**)
- Cerebrospinal fluid (CSF) analysis showed 8 cells and mildly elevated protein concentration. Tau and p-Tau levels were increased (1357 and 61 pg/mL, respectively) and amyloid-β 42 decreased (444 pg/mL) (**Tab. 1**). One oligoclonal IgG band was detected in CSF only. Anti-CNS antibodies were absent

The diagnosis of probable CAA-ri was then made (**Tab. 2**). After intravenous steroid treatment with methylprednisolone 500 mg for 12 days with subsequent prolonged oral tapering, the clinical and radiological picture progressively improved.

Figure 1. White matter abnormalities during 1^ episode in the temporal/parietal lobes on CT scan (A), with improvement after immunosuppressive treatment on FLAIR MRI images (B, C)

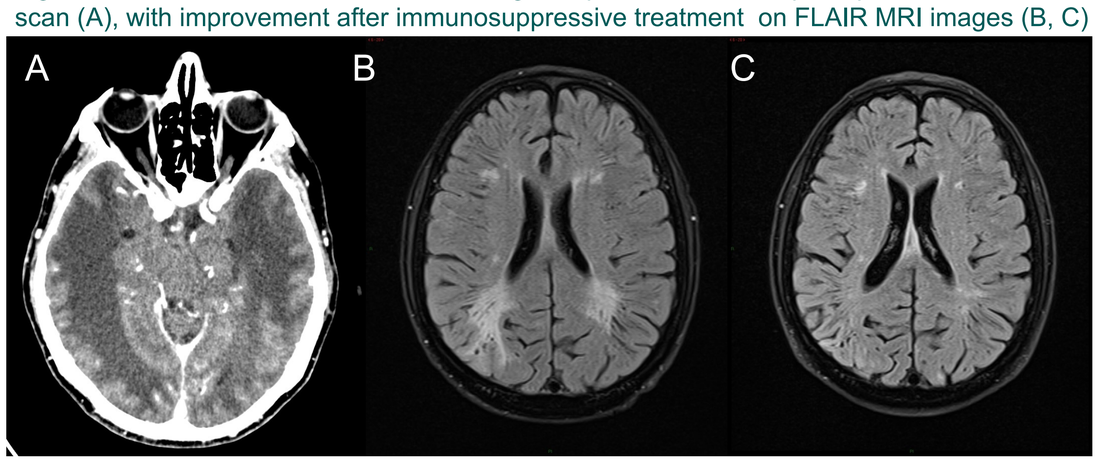

Figure 2. Recurrence of white matter abnormalities on FLAIR sequence (A) and punctate right white matter ischemic injury on DWI (B) during 2^ episode

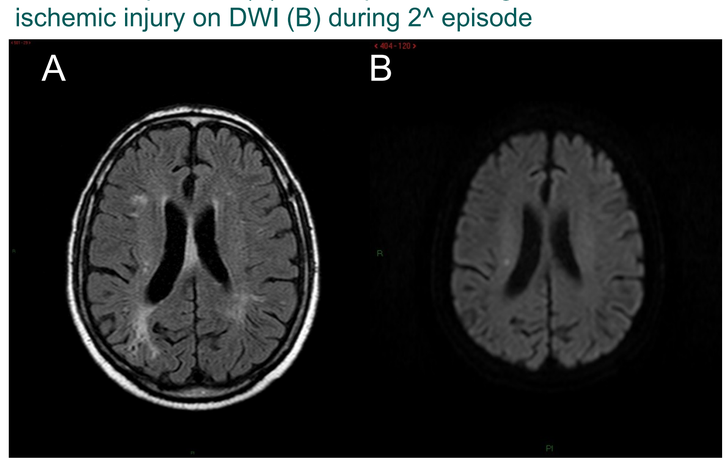

Figure 3. MRI features during 3^ relapse. Prevalent posterior cortico-subcortical FLAIR hyperintensities (A, B) with improvement on follow-up MRI (C, D). Posterior leptomeningeal enhancement post Gadolinium T1 image (E). Multiple cortical predominant microbleeds and superficial siderosis on GRE (F, H) and SWI (G) sequences

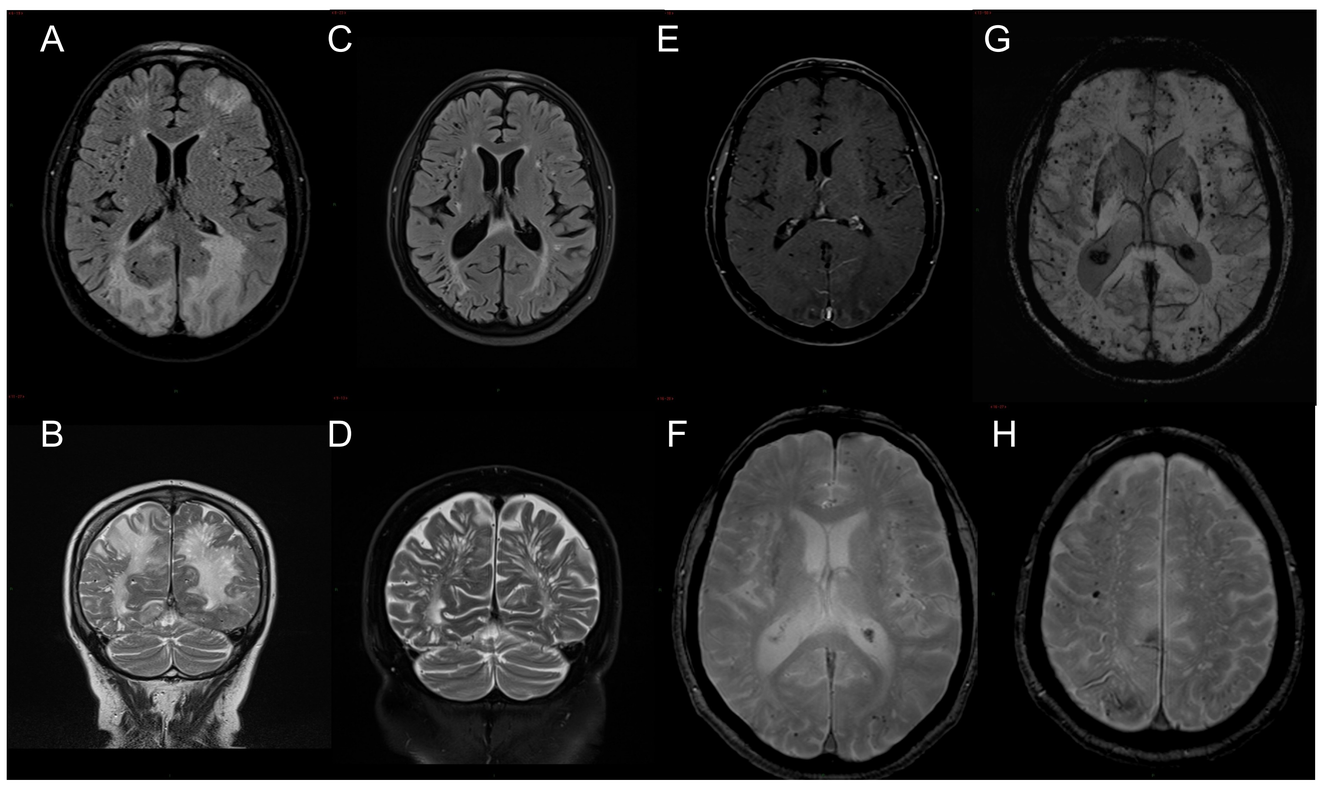

Table 1. CSF findigs on and after steroid treatment during 3^ relapse

	on therapy	post therapy	v.n.
Tau	1357	742	<375 pg/mL
p-Tau	61	78	<52 pg/mL
amyloid-β 42	444	510	>550 pg/mL

Table 2. Clinicoradiological criteria for the diagnosis of probable CAA-ri

Criteria
1. Age ≥40 y 2. Presence of ≥1 of the following clinical features: headache, decrease in consciousness, behavioral change, or focal neurological signs and seizures 3. MRI shows unifocal or multifocal WMH lesions (corticosubcortical or deep) that are asymmetric and extend to the immediately subcortical white matter 4. Presence of ≥1 of the following corticosubcortical hemorrhagic lesions: cerebral macrobleed, cerebral microbleed, or cortical superficial siderosis 5. Absence of neoplastic, infectious, or other cause

DISCUSSION AND CONCLUSION

CAA-ri should always be considered in presence of rapidly progressive cognitive decline and occasionally focal neurological deficits in adults and older adults. Brain MRI can confirm the diagnosis, because the radiological abnormalities are typical (2). Recently, the hypothesis of an autoimmune pathogenetic mechanism against cerebrovascular amyloid-β has drawn attention on novel, potential CSF biomarkers (3). In our case, abnormal CSF Tau, p-Tau and amyloid-β levels were observed in the acute phase, with a decrease of Tau and a slightly increase of amyloid-β 42 in the post therapy phase, although their pathogenetic role must be still assessed. Interestingly, CAA-ri relapses are reported to be rare and often delayed; by contrast, our case shows that aggressive forms of disease do exist, and are characterized by several relapses in a short time, despite steroid therapy.

REFERENCES

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