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**&**  
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**JAPAN**

# Case. M/60 Right side weakness

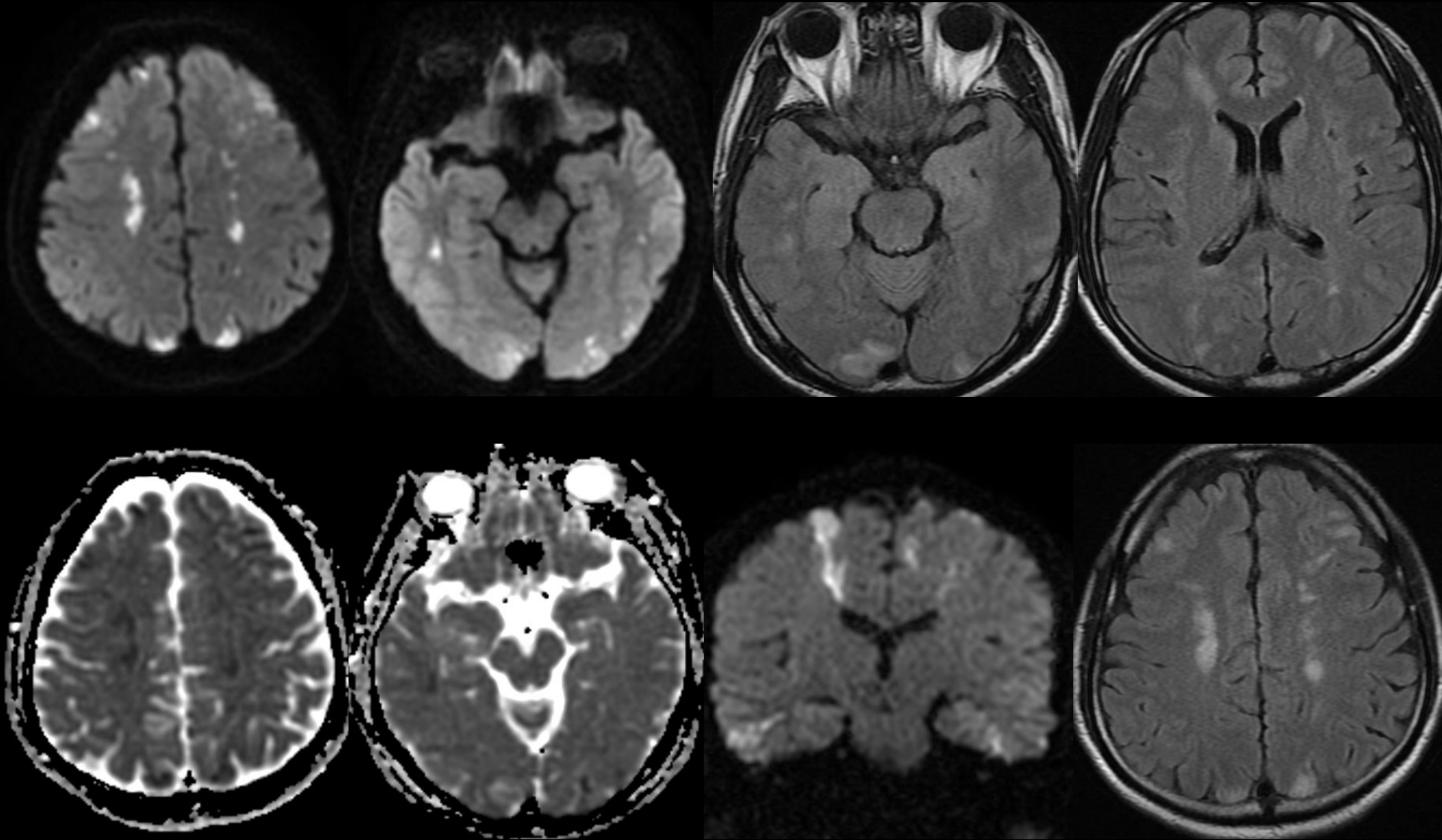
- Chief Complaint: Right side weakness
  - Headache, myalgia
- Past medical history
  - HTN/DM/Hypercholesterolemia (-/-/+)
  - Smoking (+), Alcohol (+)

**Brain CT scan**  
**2014-01-25**



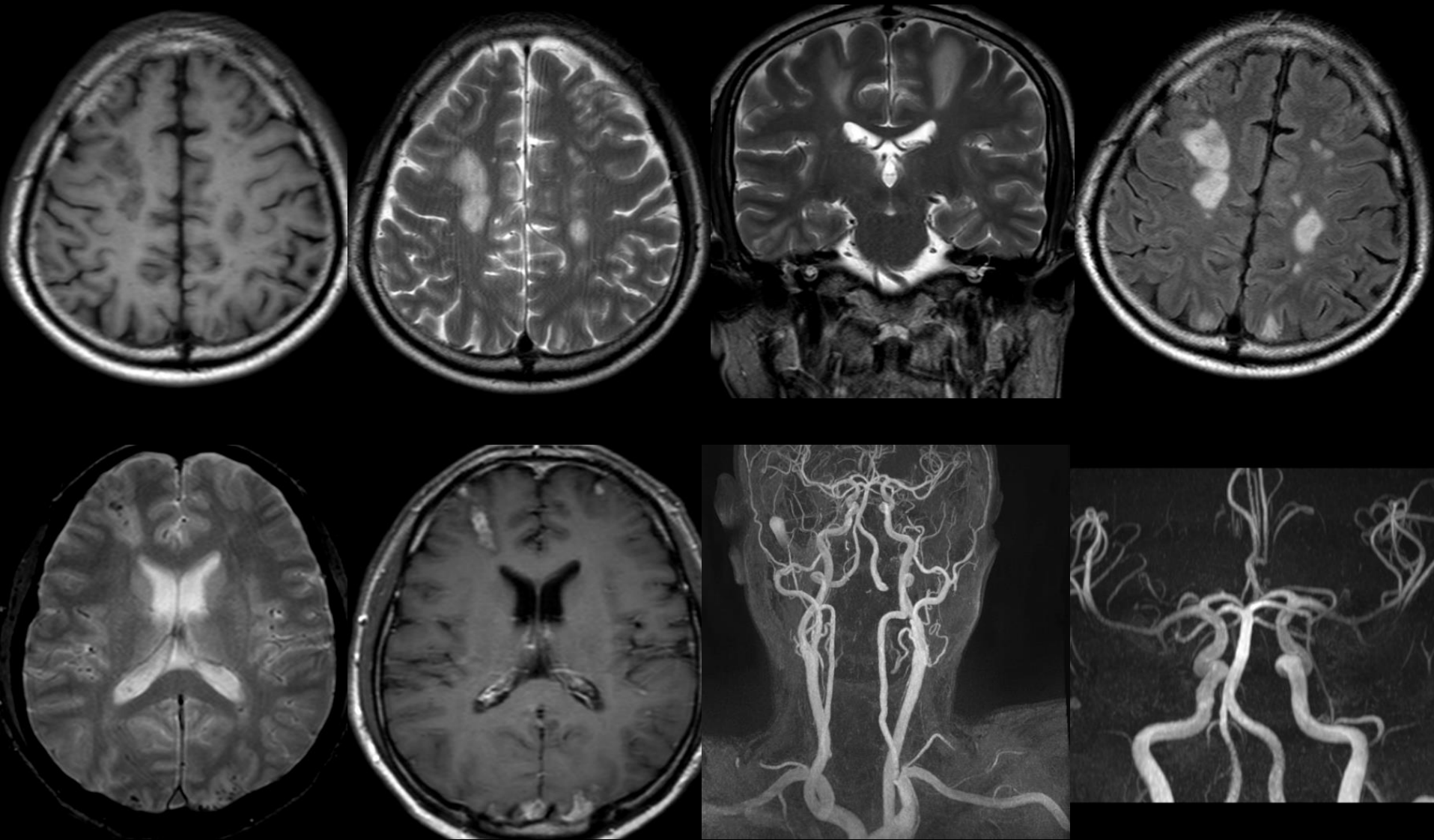
# Brain MRI

2014-01-27



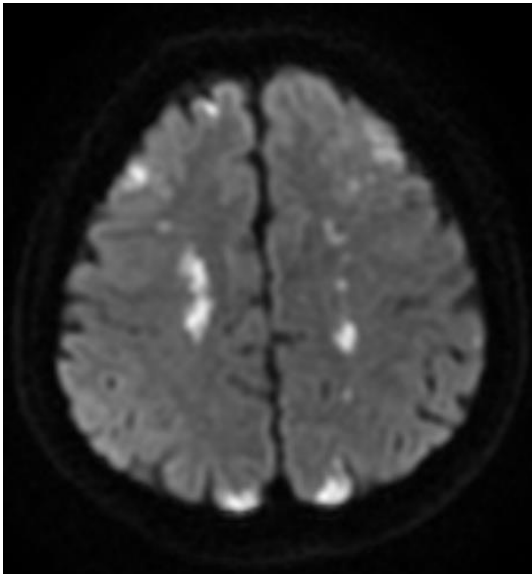
# f/u Brain MRI & MRA

2014-02-06



# Findings

- Bilateral multiple lacunar acute infarct.
- These lesions distribute in the watershed area.
- There is no vascular lesions (arterial stenosis, aneurysm and so on).



# Differential Diagnosis

## Bilateral Watershed Infarction

- Bilateral neck internal carotid arterial stenosis
- Trousseau syndrome (Infarction associated with malignant tumor)
- Heparin-induced thrombocytopenia
- Infectious embolization
- Fat embolization (due to bone fracture)
- Embolization from cardiac myxoma
- Intravascular lymphomatosis (IVL)
- Hypereosinophilia-induced encephalopathy



# Differential Diagnosis

## Bilateral Watershed Infarction

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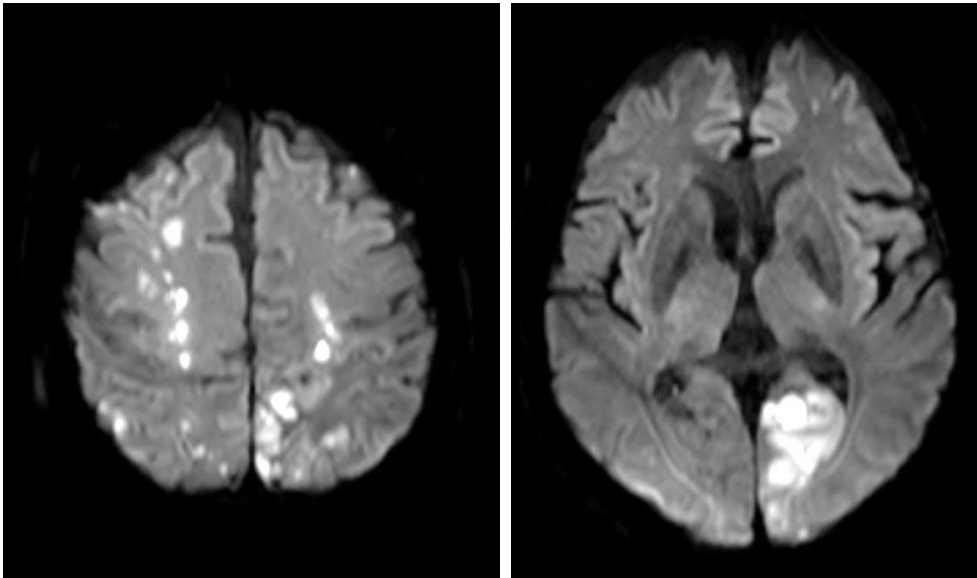


# Differential Diagnosis

## Bilateral Watershed Infarction

- Trousseau syndrome (Infarction associated with malignant tumor)

73 y.o. Male (Our case)  
Terminal stage of lung cancer



Trousseau syndrome is characteristic of both the segmental and lacunar infarction.

*Aneesh BS et al. Stroke.  
2002;33:1267-1273.*

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# Differential Diagnosis

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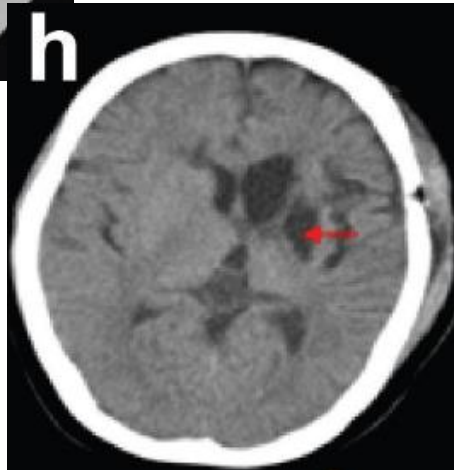
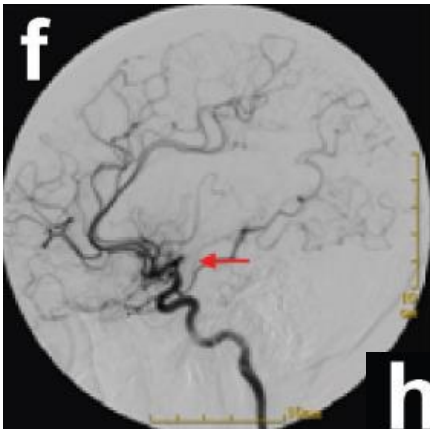
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# Differential Diagnosis

## Bilateral Watershed Infarction

- Embolization from cardiac myxoma



Cardiac myxoma is supposed to cause main branch occlusion and broad infarction.

*Youming L et al. ScientificWorldJournal. 2014; 9;2014:718246.*

# Differential Diagnosis

## Bilateral Watershed Infarction

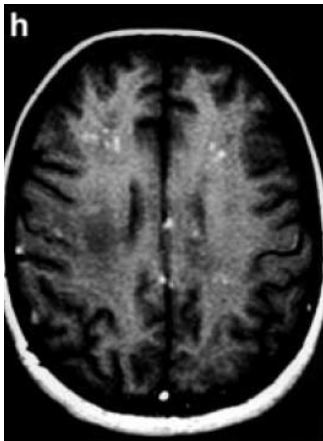
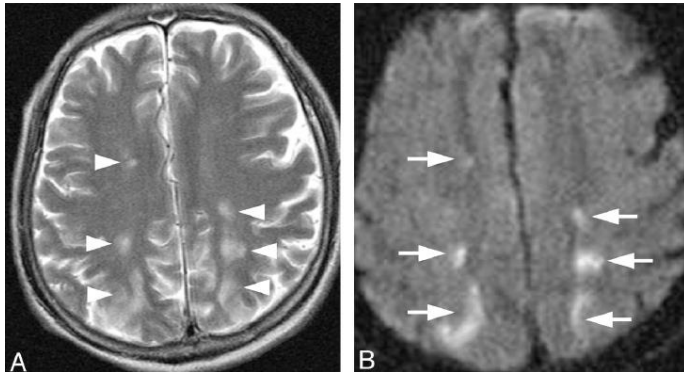
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# Differential Diagnosis

## Bilateral Watershed Infarction

- Intravascular lymphomatosis (IVL)



- Intravascular lymphomatosis (IVL) is a rare type of extranodal lymphoma with an aggressive clinical course characterized by the proliferation of lymphoma cells within the lumen of small vessels.
- Multiple bilateral infarctlike lesions with/without various contrast enhancement.
- Typical clinical symptoms are frequently **fever** and **neurological manifestations**.

*Martin-Duverneuil N et al. Neuroradiology. 2002;44(9):749-754.*

*Matsue K et al. Eur. J. of haematol. 2007;80:236-244.*

*Yamamoto A et al. AJNR Am J Neuroradiol. 2012;33:292-296.*

# Differential Diagnosis

## Bilateral Watershed Infarction

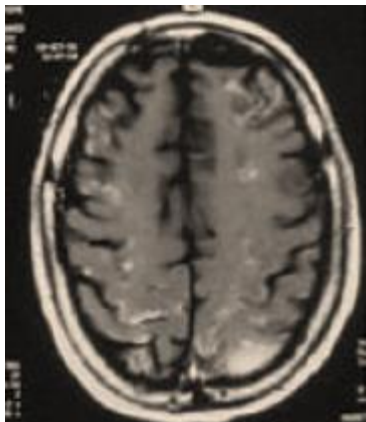
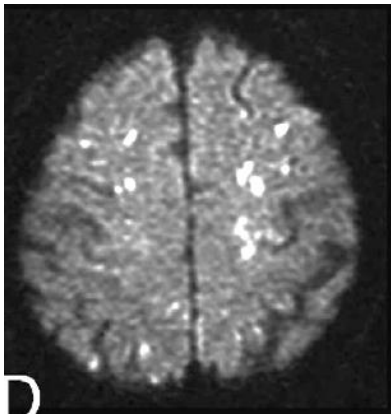
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# Differential Diagnosis

## Bilateral Watershed Infarction

- Hypereosinophilia-induced encephalopathy (HIE)



- Local thrombo-vasculitic mechanisms are a consequence of direct damage from eosinophil infiltration; the release of eosinophil-derived neurotoxin or eosinophil cationic protein may therefore account for the mechanisms involved in encephalopathy.
- Image findings in this disease are characteristic of **bilateral watershed infarction** with occasionally contrast enhancement.

*Kono Y et al. Clin Neurol Neurosurg. 2009;111(6):551-553.  
Lian W et al. J Clin Neurosci. 2012;19(12):1746-1748.  
Sarazin Z et al. J Neurol Neurosurg Psychiatry 2004;75:305-307.*

# Differential Diagnosis

Bilateral Watershed Infarction

*Which is a true diagnosis?*

— *IVL vs HIE*

- In IVL, typical clinical symptoms are frequently **fever** and **neurological manifestations**.

***Key Word:***  
***“Myalgia”***

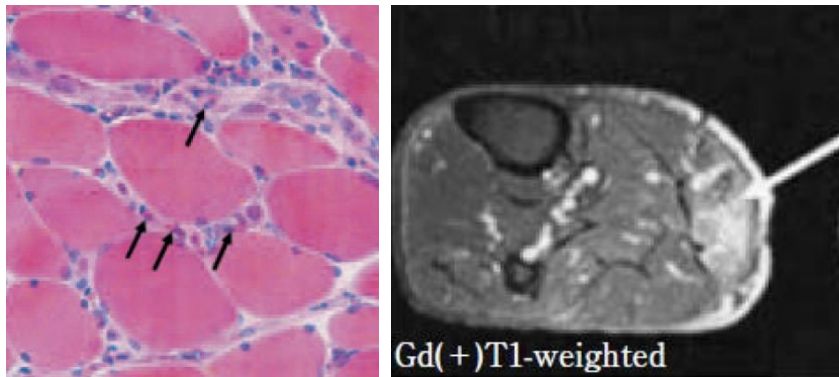
# Differential Diagnosis

Bilateral Watershed Infarction

*Which is a true diagnosis?*

— *IVL vs HIE*

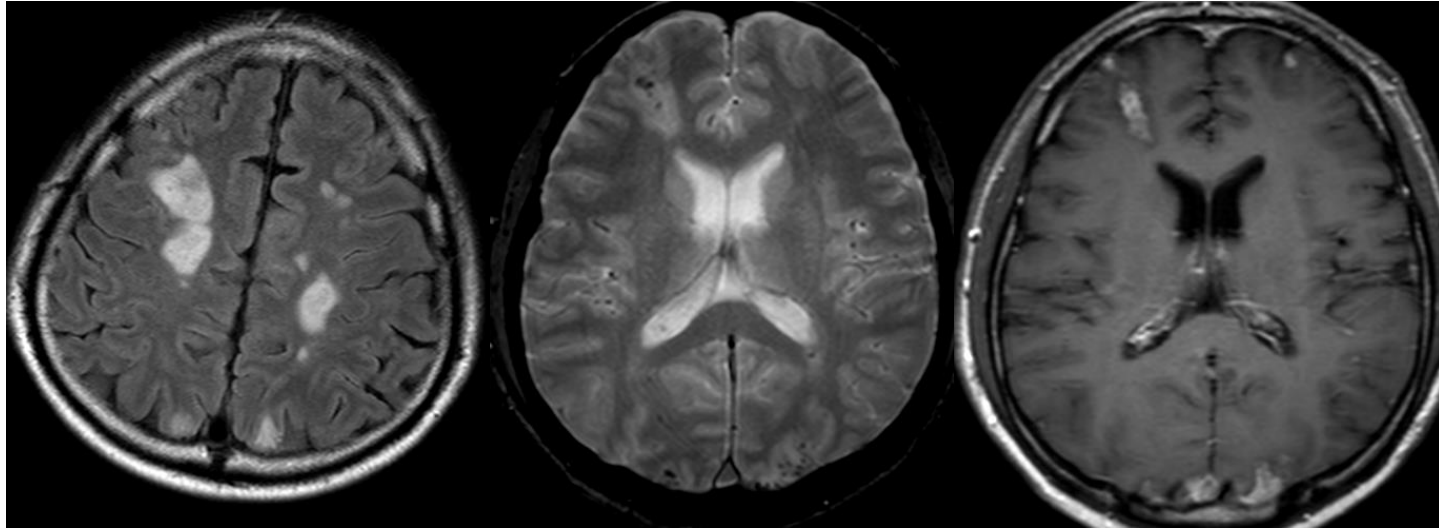
- **Eosinophilic myositis** is caused by the invasion of eosinophils for the muscle tissue.
- This disease is very rare, however it typically causes **myalgia**.



*Matsuse D et al. Rinsho Shinkei. 2008;48:36-42.*  
*Selva-O'Callaghan A et al. Autoimmun Rev. 2014;13:375-378.*

**But !**

## 2<sup>nd</sup> MRI



- Second MRI shows rapid swelling lesions, hemorrhage and enhancement compared with first MRI.
- It's **peculiar findings in hypereosinophilia-induced encephalopathy.**
- Thus, this case may be tumor lesion?

*Which is a true diagnosis?*

- **I am embarrassed in this case.**
- **But, I think second MRI may play a important role and lymphoma cells may cause myalgia as well.**
- **I'd like to look on image findings as important.**



# **Final Diagnosis**

**Intravascular Lymphomatosis**

*Thank you for your attention.*