Eosinophilic meningitis: Diagnostic Considerations and Options for Clinicians

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Eosinophilic Meningitis
(Etiologies)

- **Noninfectious**

  Idiopathic hypereosinophilic syndrome, V-P shunts, Leukemia/ Lymphoma, NSAIDs, Antibiotics, Myelography contrast agents

- **Infectious, nonparasitic**

  Coccidioidomycosis, Cryptococcosis, Myiasis, Viruses, Bacteria

Am J Med 1993; 95: 250

Eosinophilic Meningitis
(Etiologies)

- **Infectious, parasitic**
  - Roundworms

    Angiostrongylus cantonensis

    Gnathostoma spinigerum

    Baylisascaris procyonis

  - Tapeworms and Flukes

    T. solium (Cysticercosis)

    P. Westermani Schistosoma sp.

    Fasciolopsis sp.

Am J Med 1993; 95: 250

Eosinophilia in the Hospitalized Case-Patients (N= 9)

	Acute	Any time*
• CSF	55%	89%
• Peripheral blood	44%	100%
• Either CSF or peripheral blood	67%	100%

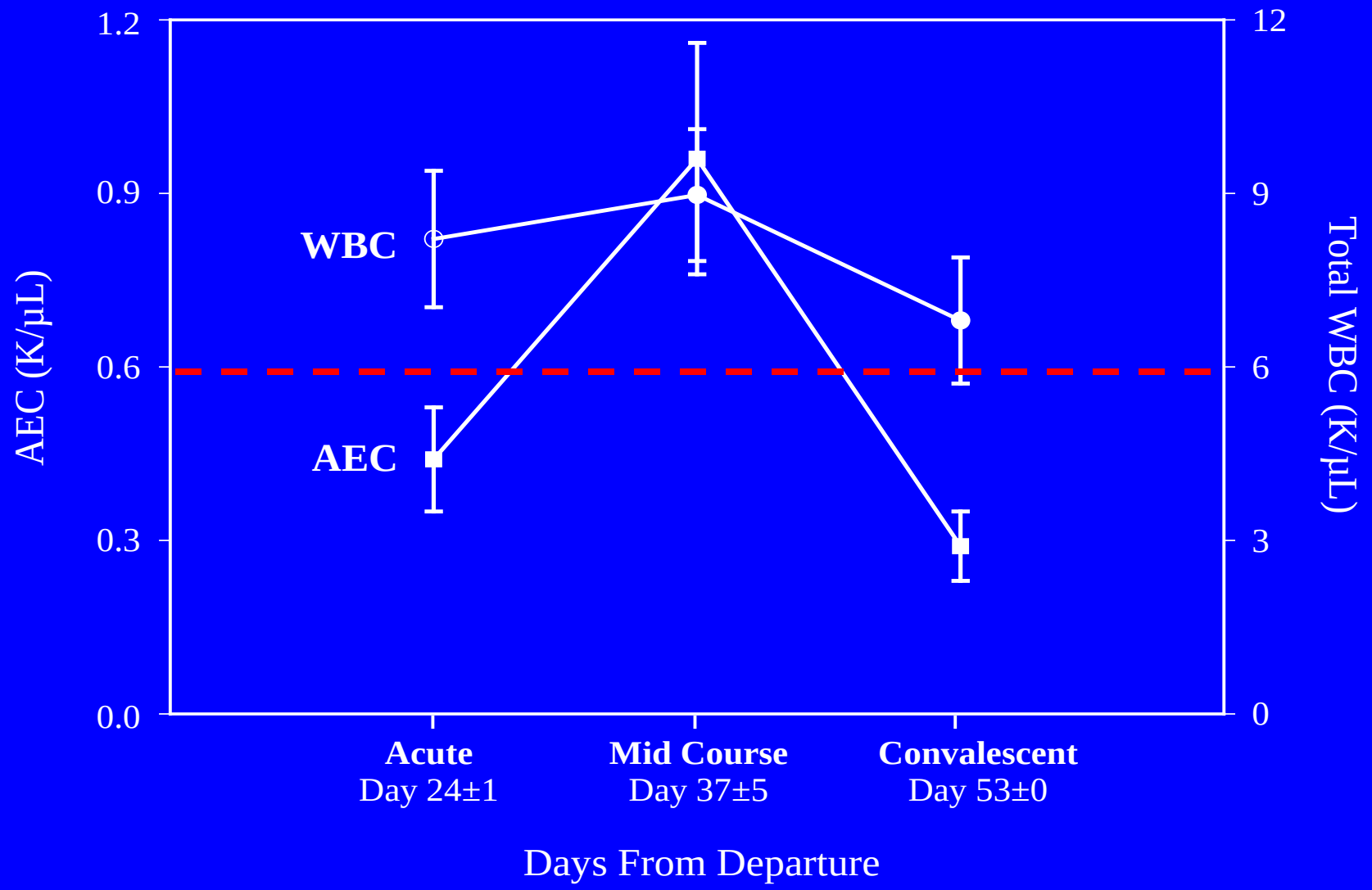
Eosinophilia: > 10% of WBC differential (CSF)
≥ 600/µL (peripheral blood)

* F/up CSF specimens were not obtained in 6/9 patients

Peak Cerebrospinal Fluid Values (N=9)

	Median	(Range)
WBC	375/mm3	18-900
Eosinophils	33%	2-54
Protein	54 mg/dL	29-158
Glucose	59 mg/dL	39-81
Opening Pressure	24 cm H_20	11-55

Peripheral Blood Eosinophilia*

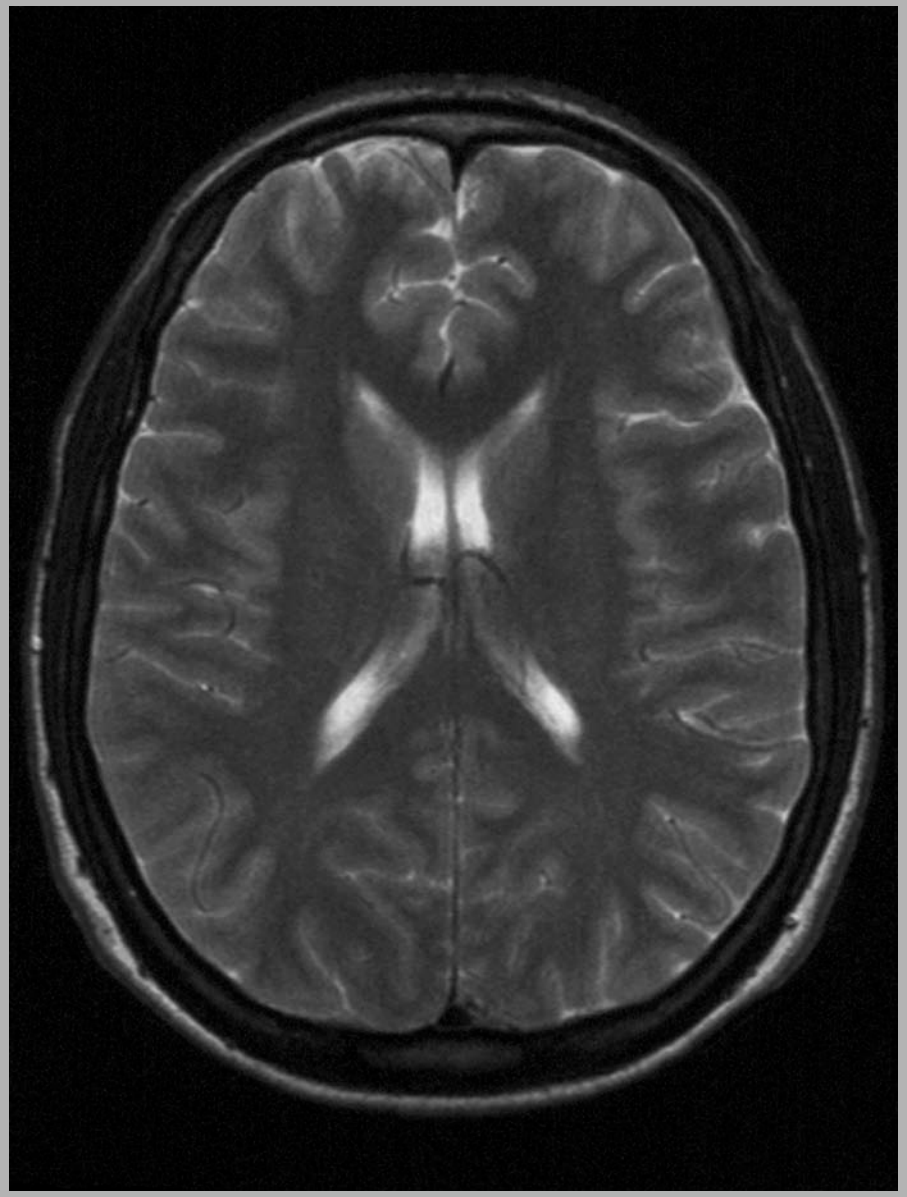


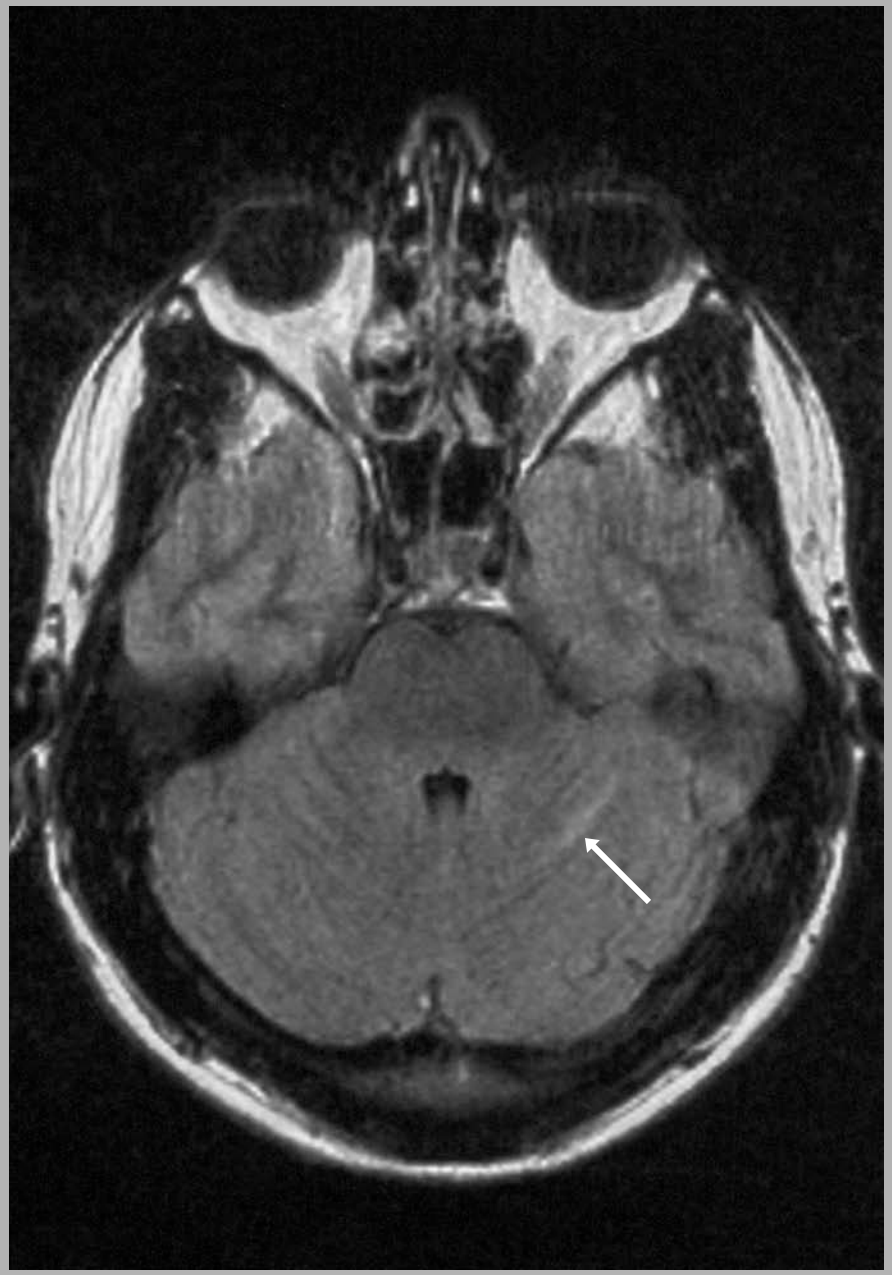
*N= 7

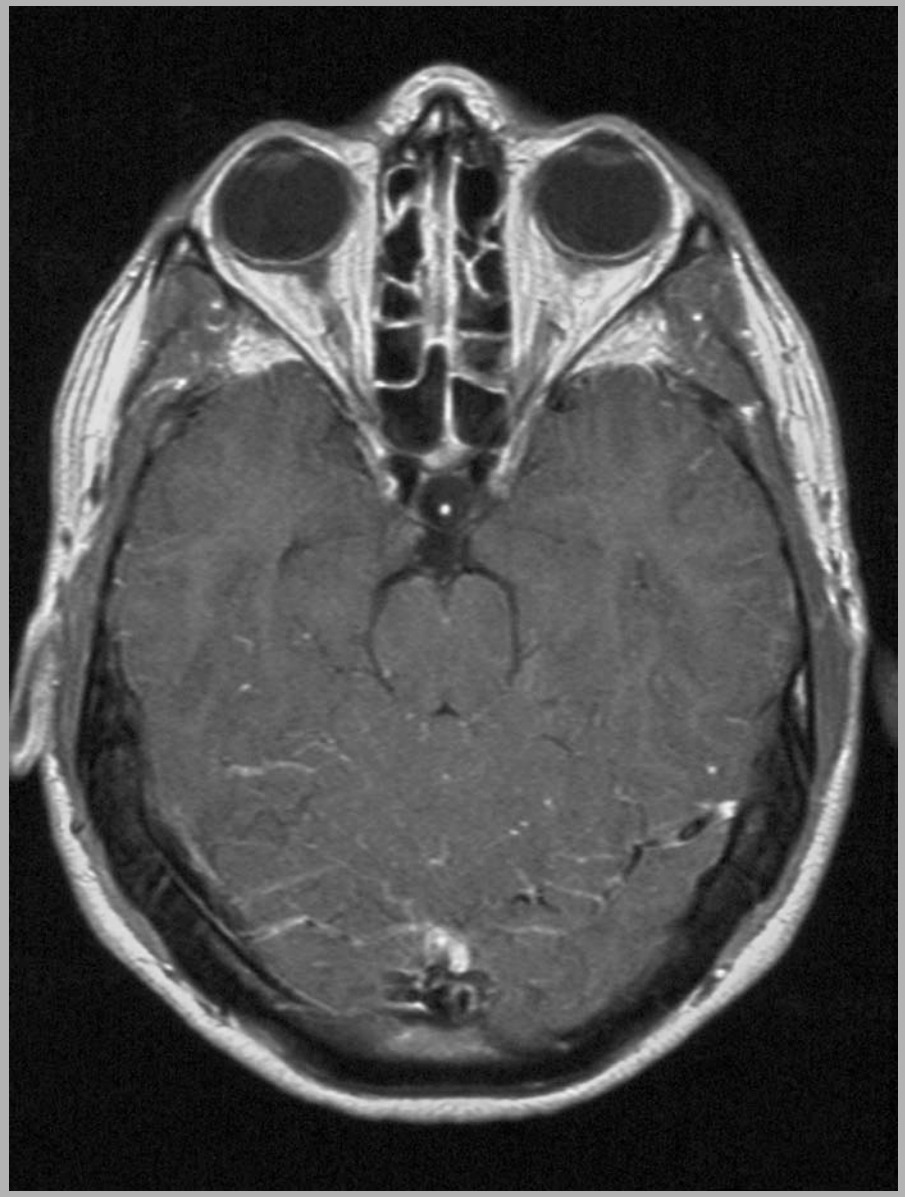
Diagnositic Evaluation

	Abnormalities
• CSF microscopy	0/7
• Ophthalmology screen	0/2
• Chest radiographs	1*/2
• Brain imaging	
– CT	1/3
– MRI	1/3

* Small pleural effusion



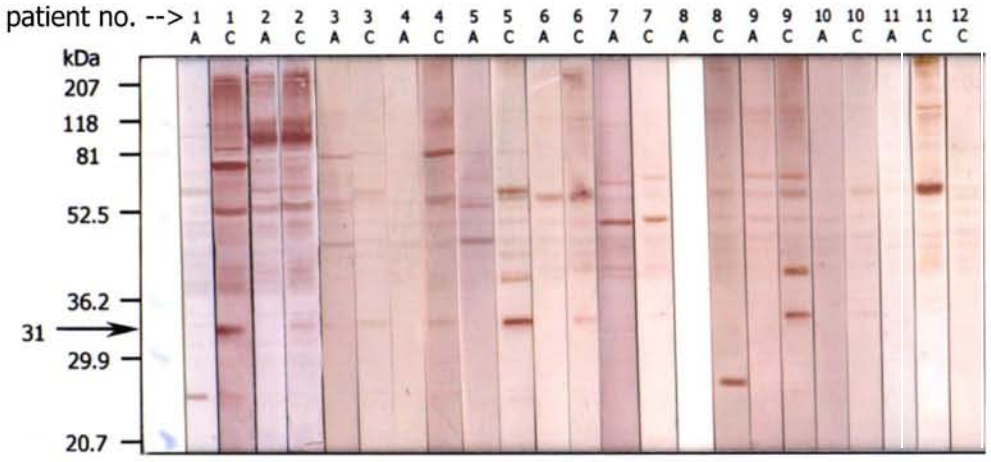


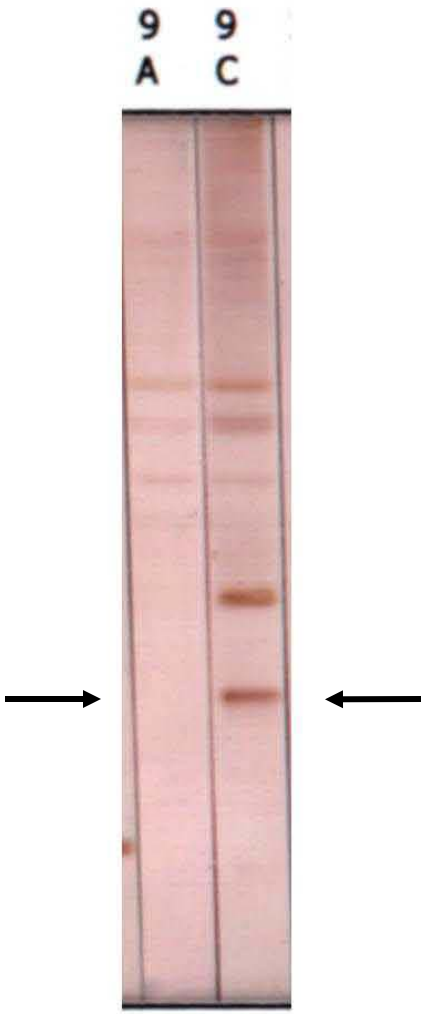


Serology

- Serologic tests negative for *Strongyloides, Toxocara,* and *Trichinella*
- Antibodies to a 31kDa *A. cantonensis* band in 11 of 12 convalescence phase serum samples from case-patients

Reactivity of Acute and Convalescence Phase Sera from Case-patients to *A. cantonenis* Proteins

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Discussion

- Eosinophilia (CSF & peripheral blood) was not present initially in nearly ½ of the cases

- Headache, altered cutaneous sensations, with raised ICP and a non-PMN pleocytosis on CSF analysis (with or without eosinophilia) should alert to the possibility of *A. cantonensis* infection

Discussion

- Eosinophilia panel available at the CDC- *Strongyloides, Toxocara,Trichinella*
- *A. cantonensis* Serology available at labs in Brazil & Thailand:

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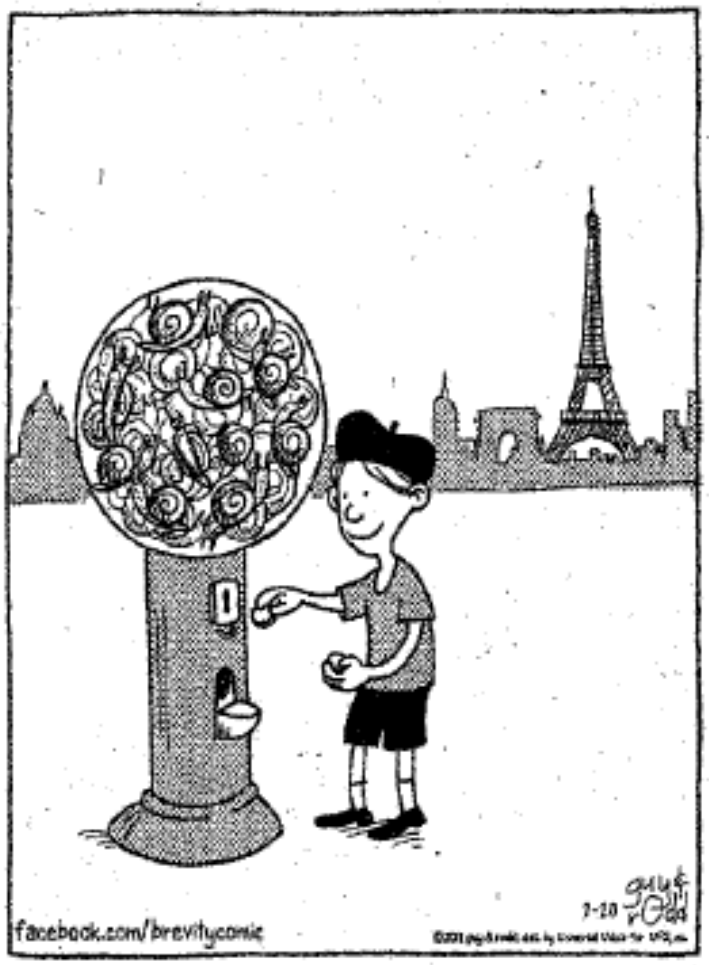
Discussion

- Diagnosis of *A. cantonensis* infection can be made on a clinical basis (headache, eosinophils in CSF, consistent travel & dietary history within the past several weeks)
- Not all cases meet above criteria on initial presentation; repeating the lumbar puncture and blood work 1-2 weeks later may be helpful to confirm
- A rapid, reliable test at a reference center (e.g., CDC) would be beneficial: ?PCR on CSF

Brevity

By Guy am:fRodd



Acknowledgements

Northwestern University Medical School

Trevor Slom

Robert Sufit

Carlos Zambrano

Chicago Department of Public Health

Susan Gerber

Margaret Cortese

Roderick Jones

Centers for Disease Control and Prevention

Barbara Herwaldt

Timothy Holtz

Adriana Lopez

Mahidol University

Wanpen Chaicumpa

Yuwaporn Sakolvaree