Clinical Case

- A 31-year old Kuwaiti male, otherwise healthy, presented at Amiri Hospital with sudden onset of fits, convulsions in the last 10 days.

- He gave no H/O of head injury or drug intake.

- He travels abroad frequently to different countries on business tours.
Diagnostic queries:

What additional information you may need in the history?

What would be your diagnostic workup & why?

What are 3 major differential diagnosis

How would you confirm your diagnosis?

How would you manage this patient?
Cysticercosis Epidemiology

- **Worldwide:** ~50 million have cysticercosis infection.

- **Endemic Regions:** Central & South America, Sub-Saharan Africa, India, Nepal, China, Thailand.²

- **India** (Bihar, UP): ~19% of the population; NCC: 3%

- **Europe:** 17 countries; 53% imported; 11% autochthonous.

- **USA:** 85% cases in migrants (60% Mexican); 15% US-born persons.
Countries and areas at risk of cysticercosis, 2009

- **Endemic (full life-cycle)**
- **Suspected endemic**
- **Imported cases (possible human cysticercosis transmission)**
- **No data available**
1. Oncospheres develop into cysticerci in muscle

2. Cattle (T. saginata) and pigs (T. solium) become infected by ingesting vegetation contaminated by eggs or gravid proglottids

3. Oncospheres hatch, penetrate intestinal wall, and circulate to musculature

4. Humans infected by ingesting raw or undercooked infected meat

5. Scolex attaches to intestine

6. Adults in small intestine

Eggs or gravid proglottids in feces and passed into environment

= Infective Stage
= Diagnostic Stage
Mode of Transmission:
I, Fecal-oral route ...... contaminated with *T. solium* ova

II, Autoinfection

Sites:
Brain, subcutaneous tissues, eye and striated muscle
Pathogenesis

1. Initially, the live larva is within a thin-walled cyst and is minimally antigenic.

2. Drug therapy/host immune response: Gradual death of the cyst .......... inflammation and edema ...... increased intracranial pressure ..... symptoms!!

3. Cyst may degenerate to disappear or be calcified in 5-7 years.

4. Protoscolicies seen attached to inner cyst wall.
Situation in Kuwait

**Taeniasis:**
No Local transmission: No pork eating

**Cysticercosis:**
Clusters of cases: Imported cases
Locally infected: House maids with taeniasis
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<th>No. of sample</th>
<th>No. of +ve (%)</th>
<th>No. of +ve Q8s (%)</th>
<th>No. of +ve non-Q8s (%)</th>
<th>No. of +ve Indians (%)</th>
<th>No. of +ve Nepalis (%)</th>
<th>No. of +ve Srilankan (%)</th>
<th>No. of +ve Philippino (%)</th>
<th>No. of +ve Syrians (%)</th>
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<td>3 (5)</td>
<td>1 (2)</td>
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</table>
Cysticercosis

Diagnostic Protocol

1. Residence/Travel to endemic area
2. History of epileptic seizures
3. CT, MRI
4. Serology: Immunoblotting
5. Biopsy
Diagnosis

Serology:

- *T. solium* recombinant antigen (rES33):
  97% sensitivity & 100% specificity [Peru, 2007]

- Copro PCR:
  mtDNA encoding Cytochrome ‘C’ oxidase subunit 1
  chromosomal DNA encoding oncosphere protein Tso31.

Treatment: Praziquantel
Thank You!