

CHANGE IN TAENIASIS TESTING

The Public Health Impact

Roshan Reporter, MD MPH
Acute Communicable Disease Control
Los Angeles County
Department of Public Health



CASE REPORT

- 16 month-old traveled to Taiwan
 - generalized seizure upon return
- Evaluation revealed
 - multiple bilateral ring-enhancing lesions with surrounding edema
- Case reported to Public Health



CASE REPORT - 2

- PHN conducted home visit
 - Obtained history of risk factors
 - Requested stool specimens of household
 - Baby, sib & parents negative for pathogens



CASE REPORT - 3

- Live-in Baby-sitter
 - native of Guatemala
 - positive for *Taenia solium*
 - treatment rendered her non-infectious
- Supported neurocysticercosis diagnosis



CYSTICERCOSIS

SIGNS AND SYMPTOMS

- Muscles-may feel lumps
- Eyes-blurry vision, swelling, detached retina
- Brain-headaches, seizures



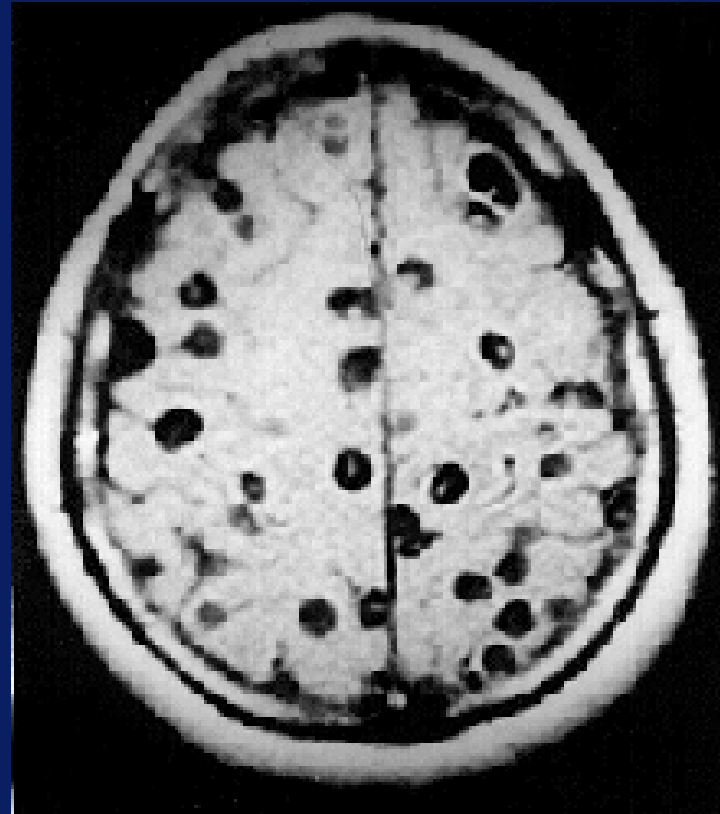
Calcified cysticerci



Cysticercosis in the eye

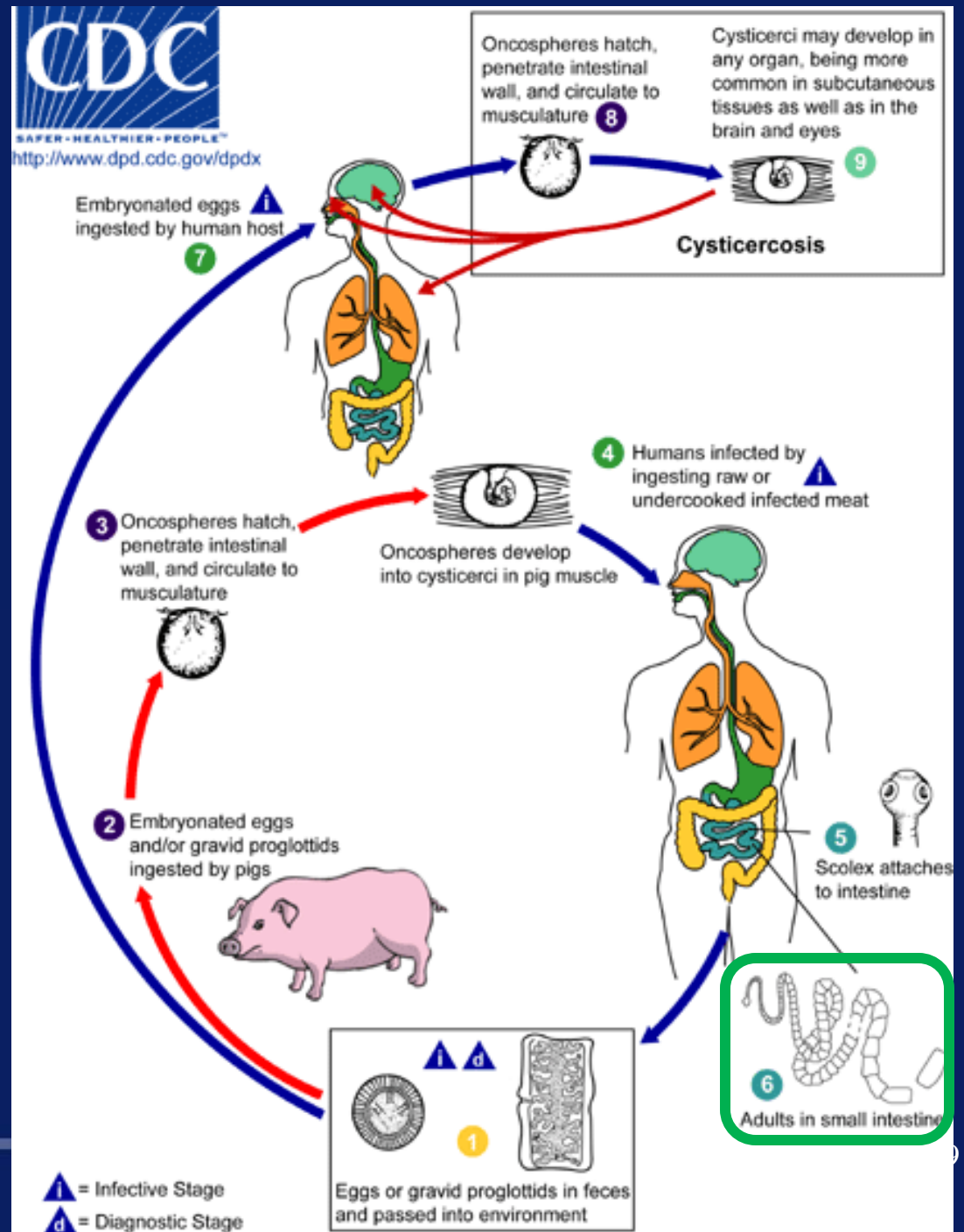


Neurocysticercosis



LIFE CYCLE

When eggs from person with *T. solium* are ingested by another person, cysticercosis may occur.



T. Solium Egg



SCREENING FOR TAENIA

- Sorvillo, 1988-1990: N=138
 - 63 **index cases** (46%) tested
 - only one positive (1.6%)

 - 347 **contacts** to 72 index cases tested
 - 6 contacts of 5 cases positive for Taenia
 - Carriers more likely among contacts of US-born cases (22%) than immigrants (4.8%)



SCREENING FOR TAENIA - 2

Dassey case study: 1994-1998*

- only 42 / 120 cases screened (35%)
 - 10 / 21 USA natives (48%)
 - 32 / 99 immigrants (32%)
- no positives found

- unknown number of contacts screened
 - one positive contact

*Unpublished study



CYSTICERCOSIS REPORTING

- Cysticercosis remains a persistent threat in Los Angeles County (and presumably other border states).
- Cases are predominantly immigrant Hispanics under 40 years of age.



CYTICERCOSIS REPORTING- 2

- Reporting to public health by physicians and hospitals must improve.
- Once reported, PH can screen index cases and their close contacts for tapeworms.



CYSTICERCOSIS REPORTING-3

- Some tapeworm carriers work in critical settings.
 - food handling
 - child care
 - medical care



Adult Tapeworm



Taenia solium scolex



PUBLIC HEALTH MESSAGE

- Identification of tapeworm carriers
 - allows for them to be treated, thus
 - eliminating further risk of cysticercosis transmission to themselves and others.
- Public Health staff can identify and screen close contacts at no charge and refer for treatment.



TESTING FOR TAENIASIS- WHY CHANGE?

- To improve diagnosis of taeniasis using a test with improved sensitivity.
- To identify possible sources of infection (tapeworm carriers) among household contacts and other close personal contacts of cysticercosis cases.



PHN ROLE

- PHN interviews using standardized case investigation form for cysticercosis
- Information is also collected on household members and other close personal contacts.



CURRENT SCREENING TEST

- Contacts are offered testing for taeniasis by O&P
 - Lower sensitivity
 - Three stool specimens required
 - Low compliance by contacts
 - Cannot speciate *Taenia* by O&P

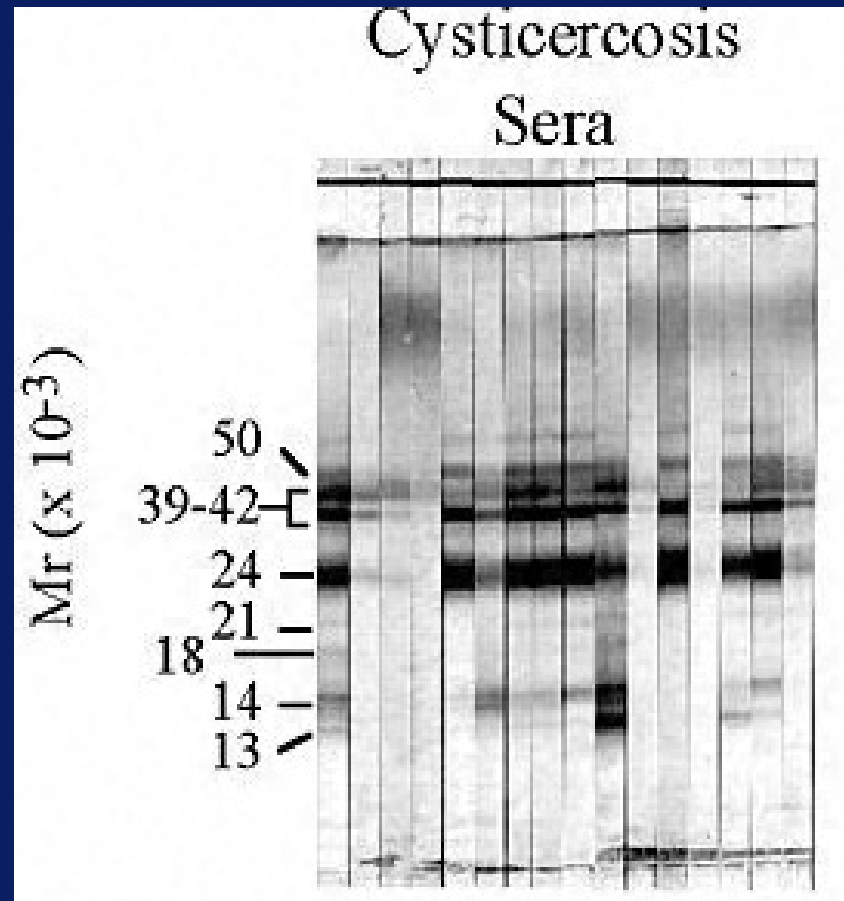


NEW SCREENING TEST

- Serologic (blood) test
- More sensitive and specific than stool O&P
 - 95% sensitivity
 - 100% specificity –no false positives



SEROLOGIC TEST RESULTS



NEW SCREENING TEST-2

- PHN to collect fingerstick specimen
 - Can be done in the field
 - Only one visit needed to collect specimen
 - If refuse blood test, offer O&P x 3 stool testing
- Contacts diagnosed with taeniasis will be referred for treatment



PUBLIC HEALTH MESSAGE

- Identification of tapeworm carriers
 - allows for them to be treated, thus
 - eliminating further risk of cysticercosis transmission to themselves and others.
- Public Health staff can identify and screen close contacts at no charge and offer or refer for treatment.



Questions?

- Slides from this CEU program will be posted after the In-service.
- Educational slide show from the UN:
- *www.fao.org/ag/againfo/programmes/documents/.../TaeniaSoliumFAO1.swf*



Taenia solium scolex

