CHANGE IN TAENIASIS TESTING

The Public Health Impact

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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
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*Unpublished study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 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.
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

Cysticercosis
Sera

Mr (x 10^{-3})

50
39-42
24
21
18
14
13
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

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• 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