A 6-year-old boy with massive ascites and abdominal pain

มหาวิทยาลัยเชียงใหม่

History:

A 6-year-old previously healthy boy referred from Chiang Rai Hospital because of massive ascites and abdominal pain. On Mar 15, 2006, he complained of having 5-week abdominal pain, anorexia, and abdominal distension. At Chiang Rai Hospital, he was admitted for investigation.

Present illness:

>> Five weeks prior to admission, the patient had chronic abdominal pain, anorexia, vomiting, and abdominal distension. He denied history of fever and diarrhea. He was initially treated at a private clinic and local hospital without clinical improvement.

>> At Chiang Rai Hospital; physical examination revealed: Mild pale, no icteric sclerae, no lymphadenopathy, heart and lungs- normal, there was marked abdominal distension with ascites, low-grade fever and generalized abdominal tenderness were noted, neither liver, spleen, nor mass was palpated; During hospitalization, the abdominal pain still persisted

Laboratory investigations:

CBC: Hb 10.3 g/dl, Hct 31.9%, WBC 42,200/cumm (N28, L12, M4, **E56**), platelet 622,000/cumm, MCV 72.4

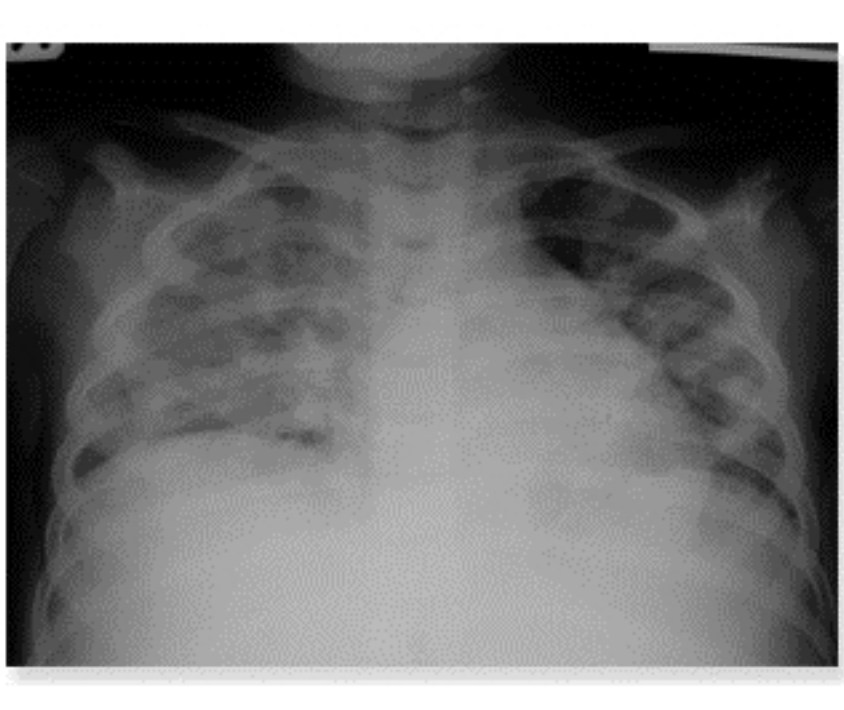
UA: sp gr 10.25, pH 5, albumin +2, sugar negative, WBC 5-10/HPF, RBC 0-1/HPF

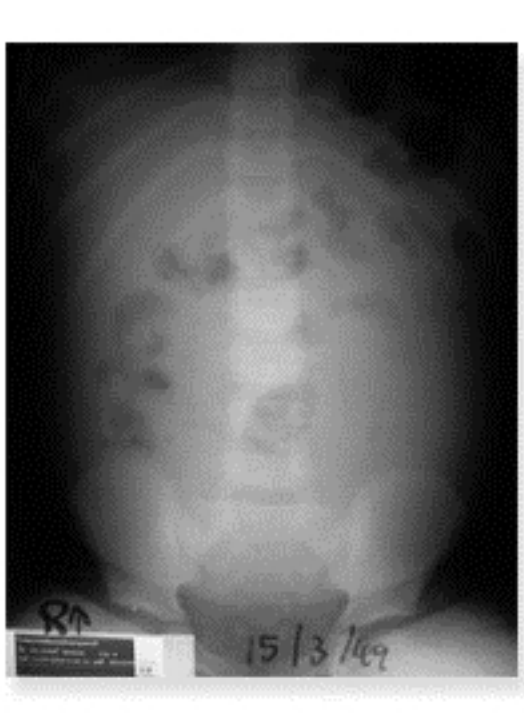
Stool examination: no WBC, no RBC, no parasites

BUN/Cr 10/0.5 mg/dl, Na 135 mEq/L, K 4.7 mEq/L, Cl 99 mEq/L, CO2CP 21 mEq/L

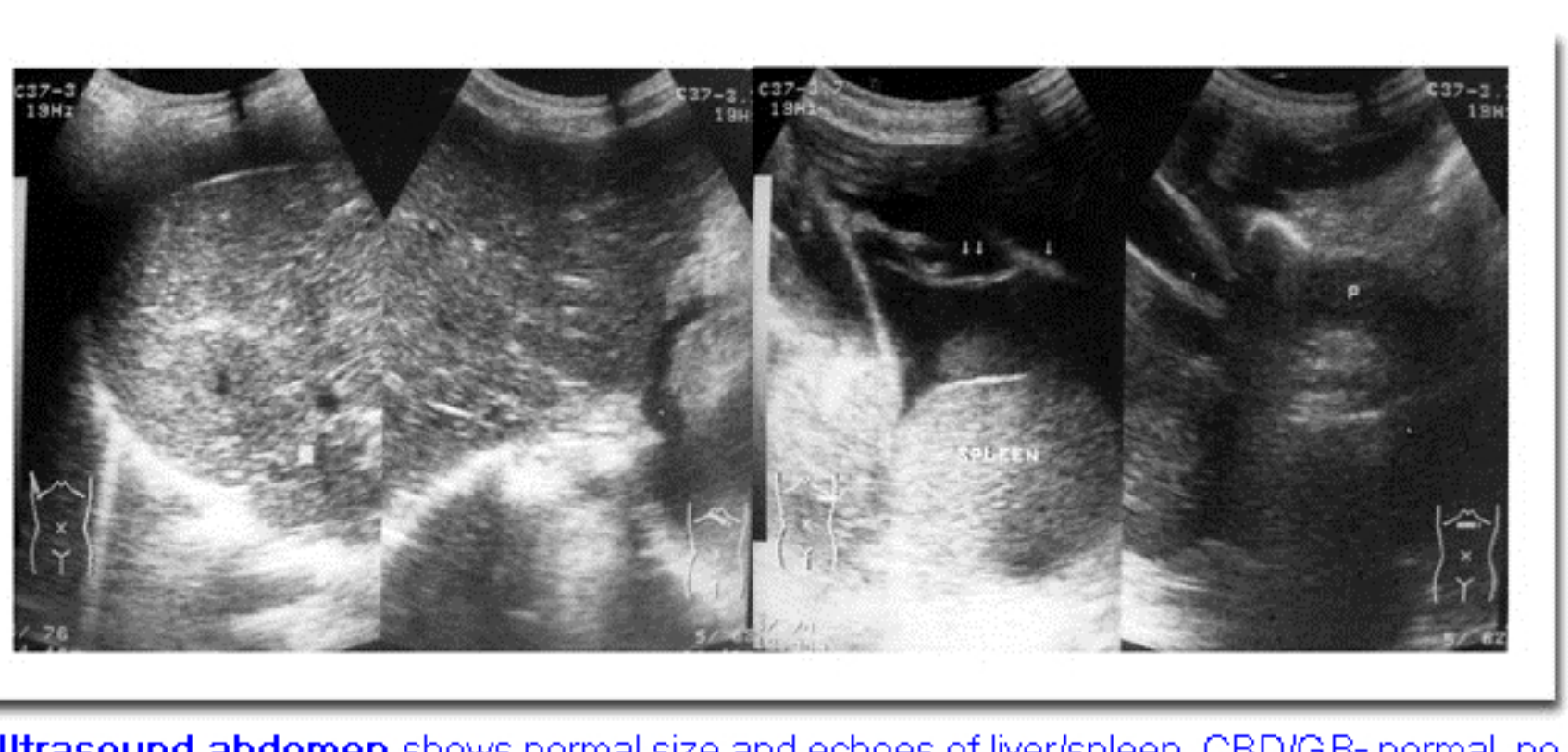
What is your next step investigation?

Further investigations:





A chest X-ray shows bilateral alveolar infiltration with right pleural effusion. Plain abdomen reveals ascites without abnormal mass or calcification.



Ultrasound abdomen shows normal size and echoes of liver/spleen, CBD/GB- normal, no evidence of gallstones, pancreas/kidneys- normal, large amount of ascites with internal fibrins; **Diagnosis: Peritonitis**

Progression:
> The patient was diagnosed as enterocolitis and treated with intravenous ampicillin, cetriazone, and metronidazole.

> Abdominal paracentesis was performed on Mar 16, 2006

Clear with straw color appearance

WBC 9300/cumm (N72, E8, L8, M2)

AFB and gram stain were negative.

LDH 597 IU/L
Protein 5.5 g/dl
Culture - pending

Provisional diagnosis: Tuberculous peritonitis

Differential diagnosis:

> Toxocara canis
> Strongyloidosis

> Eosinophilic gastroenteritis (eosinophilic ascites)

> Hypereosinophilic syndrome

> Sarcoidosis
> Meliodosis

> Systemic lupus erythematosus

> Metastatic carcinoma (carcinomatosis peritonei)

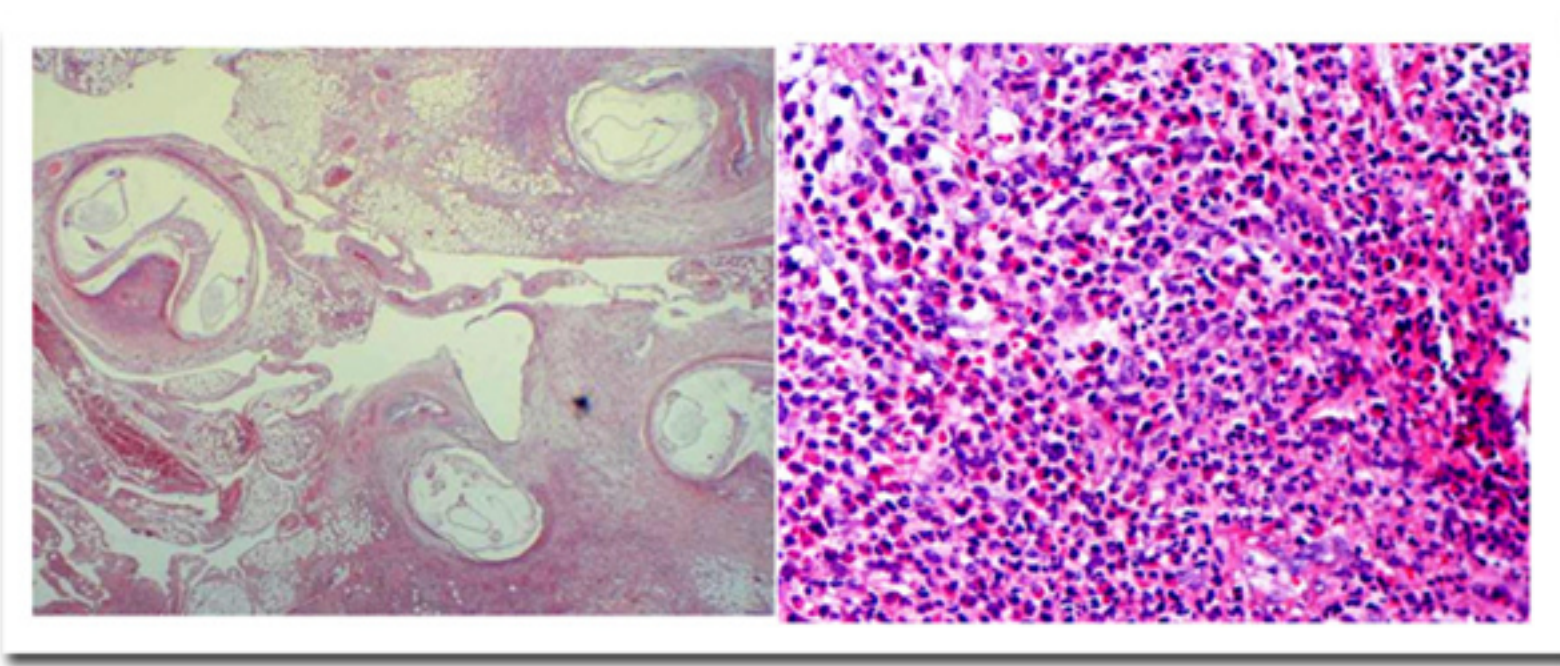
The patient still complained of abdominal pain with generalized tenderness; in which his primary physician decided to operated on him with a diagnosis of peritonitis (Mar 18, 2006)

Operative findings:

Multiple nodules attached to bowel wall, mesentery, liver and peritoneum

Biopsies were obtained.

Differential dignosis: Tuberculous peritonitis, Carcinomatosis peritonei, Granulomatous diseases



Past history:
The patient denied history of contact tuberculosis. He was immunized with BCG. There was no history of eating raw-meat.

Physical examinantion :

GA: A Thai boy, look weak and dyspnea, mild pallor, no jaundice

Vital signs: T 38-39 C, RR 40/min, PR 140/min, BP 112/76 mmHg, BW 25 kg

HEENT: mildly pale, no icteric sclera, tonsils and pharynx- not injected, cervical LN- not palpable, thyroid gland- not enlarged, no oral ulcer, no neck vein engorged, Normal nose and ears
Lungs: decreased breath sound both lungs without adventitious sounds

Heart: tachycardia, regular rhythm, no murmur

Abdomen: Midline surgical scar, Marked distension with fluid thrill positive, Generalized tenderness (mild), Liver/spleen- not palpable, No mass

Extremities: Mild pitting edema at both lower extremities

Skin: normal
PR: normal sphincter tone, no rectal shelf, no mass
Investigation:
CBC: Hb 8.3 g/dl, Hct 26.7%, WBC 25,800/cumm (N61, L14, M10, E14), platelet 355,000/cumm

UA: sp gr 10.20, pH 6, protein +1, sugar trace, WBC 15-20/HPF, RBC 0-1/HPF

urine gram stain- no organism

Stool examination: WBC 10-20, no RBC, no parasites, stool fat and occult blood- negative

Stool concentration for parasite x 3 days- negative

BS 77 mg/dl BUN/Cr 4/0.4 mg/dl, Na 130 mEq/L, K 3.3 mEq/L, Cl 94 mEq/L, CO2CP 27 mEq/L

LFT: A/G 1.4/4.3 g/dl, AP 45 IU/L, Cholesterol 55 IU/L, AST/ALT 22/8 IU/L, TB/DB 0.33/0.08 mg/dl

Ca 7.6 mg/dl, P 3.3 mg/dl, Mg 1.58 mg/dl, Serum amylase 11 IU/L

PT 16.3 s (9.6), PTT 31.2 s (30.3)

Anti-HIV - negative

H/C (April 2, 2006)- no growth

U/C (April 2, 2006)- no growth

Abdominal paracentesis was performed on April 3, 2006

Clear with straw color appearance

WBC 390/cumm (N65, E8, L21, M6)

RBC 1,250/cumm

AFB and gram stain were negative.

Albumin 1.7 g/dl/serum Al 2.0 g/dl

SAAG = 0.3

Culture - negative

Progression:
At our center, the patient was treated with:

>>Albendazole 400 mg/day

>>Ceftazidime + amikacin + metronidazole intravenously

>>Fluid and electrolytes management

>>FFP/Albumin transfusion

CT abdomen showed massive ascites with ometal and peritoneal nodules with hypoechoic lesions in the liver. Right pleural effusion and granulomatous changes of the right basal lung were also seen.

Upper endoscopy showed multiple small submucosal nodules at the duodenum

Duodenal pathology:

Eosinophil infiltrate ~ 5-10/HPF

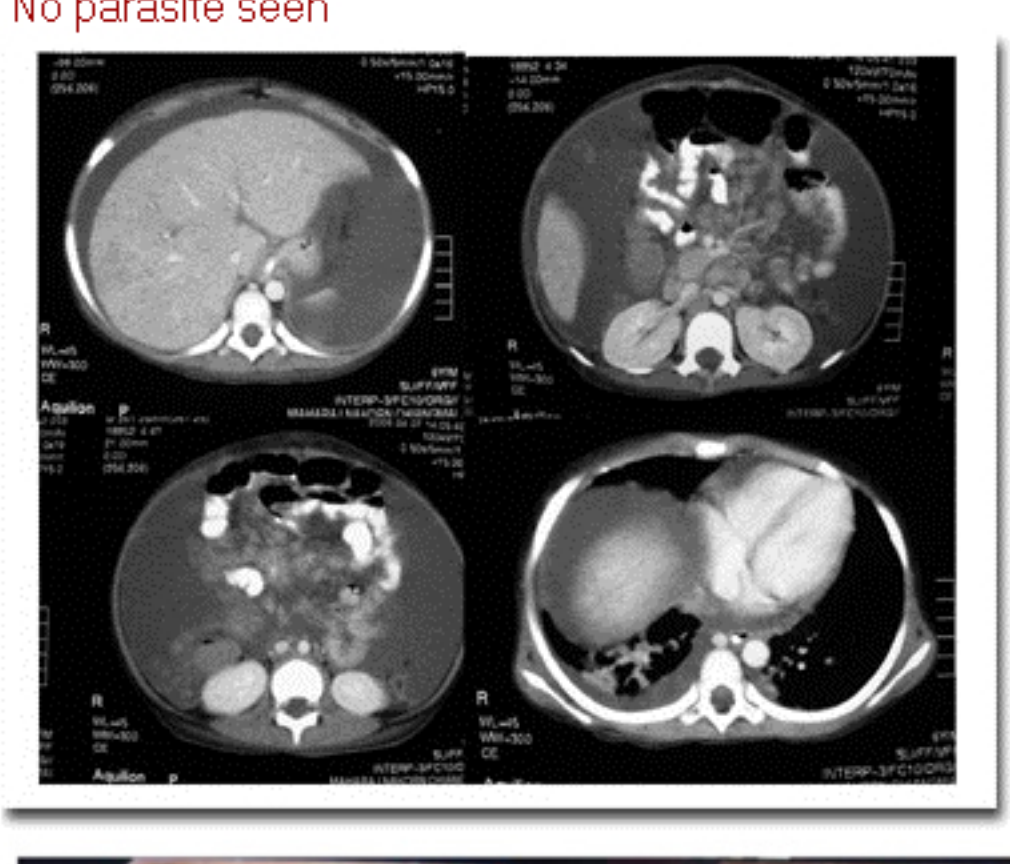
Shortening villi with crypt hyperplasia

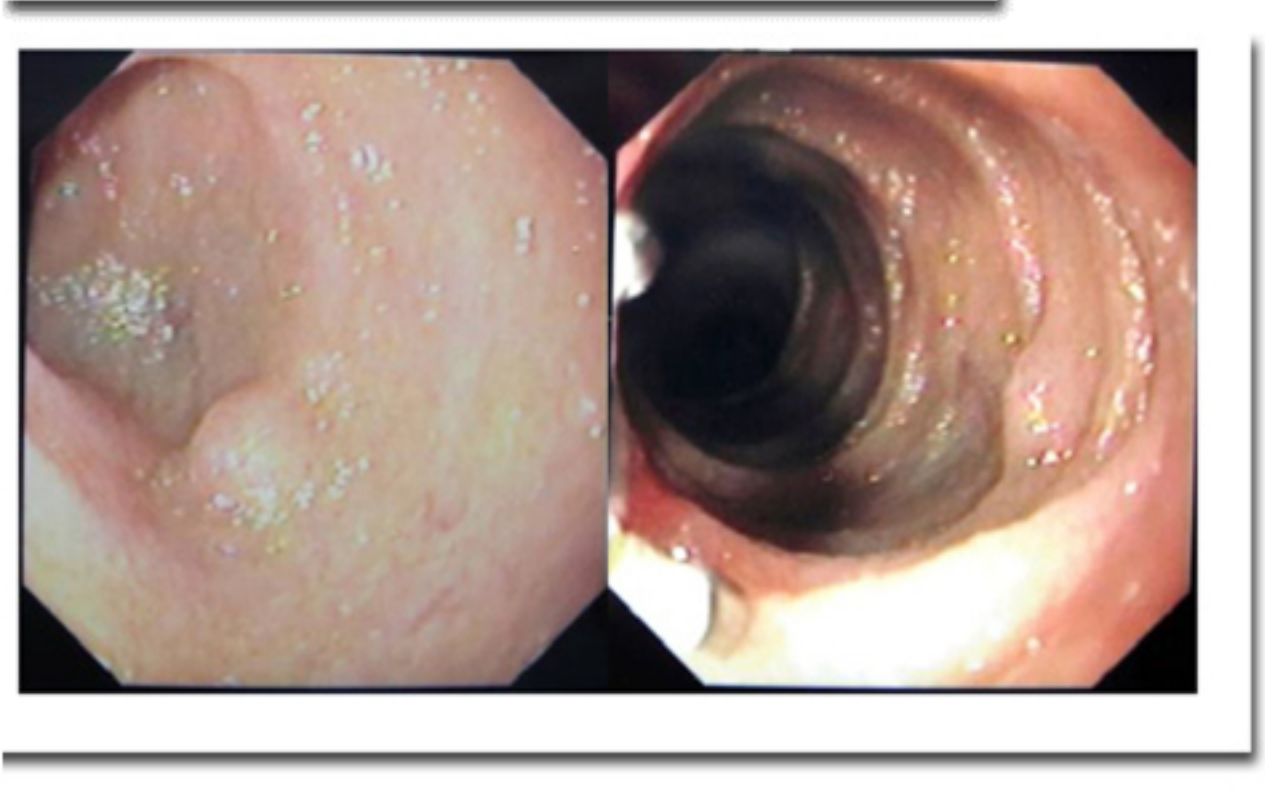
Mucosal edema
Focal lymphangiectasia

Lymphoid aggregration

Chronic inflammation

No parasite seen





Reviewing omental biopsies, Pentastomiasis was diagnosed by our pathologists.

Serologic studies for potential parasitic infestations:

Gnathostomiasis titer	ELISA OD 0.216 (cut off 0.441)
Echinicoccosis titer	ELISA OD 0.175 (cut off 0.309)
Sparganum titer	ELISA OD 0.148 (cut off 0.182)

Pentastomiasis

By Nuthapong Ukarapol, MD.

> Phylum- Pentastomida

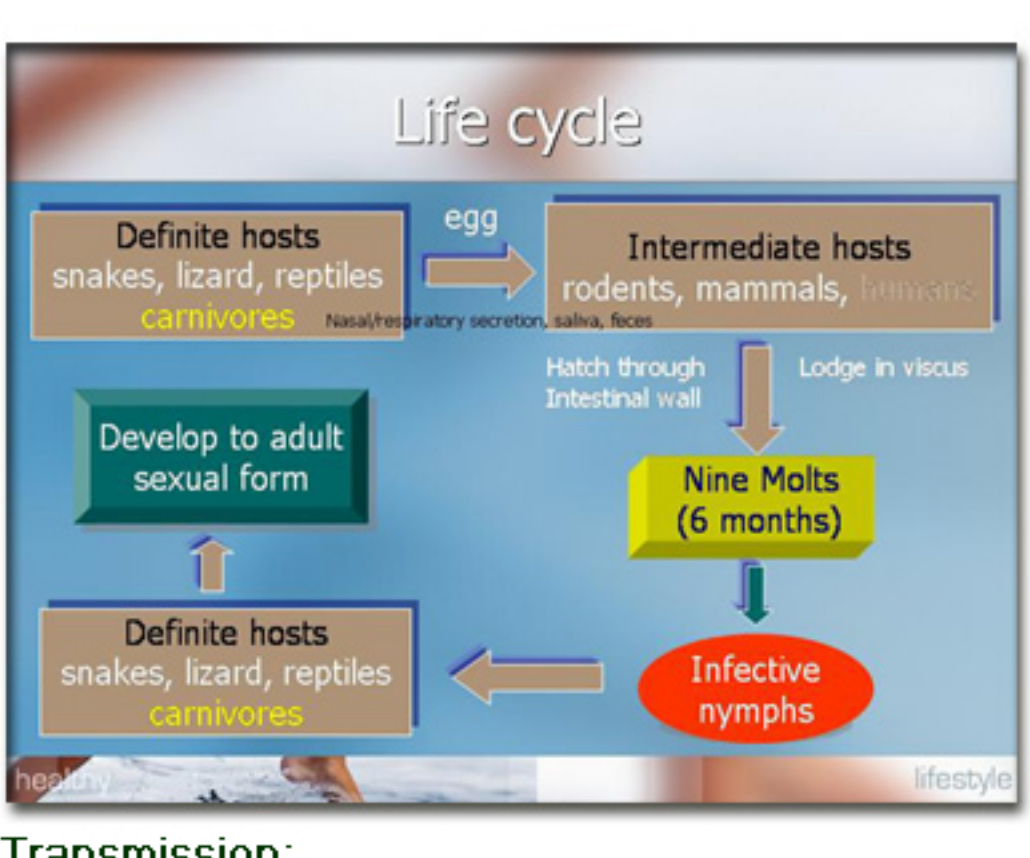
> 2 families and 2 genera : Linguatulae – Linguatula and Porocephalidae – Porocephalus (Armillifer)

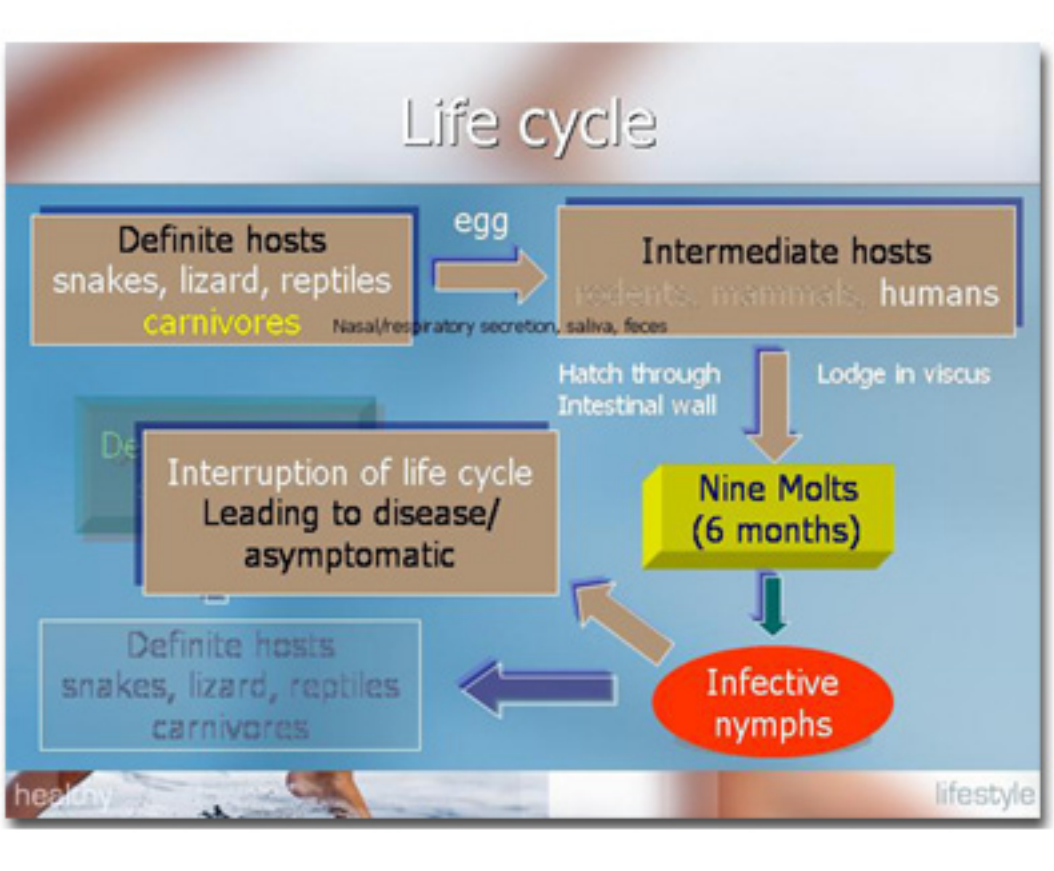
> Related to both arthropods and crustaceans

> Worm-like blood sucking endoparasite with 2 pairs of circumoral mouth hooks

> Parasitizing the dinosaurs

Linguatula	Porocephalus
Flattened body (tongue-like)	Cylindrical body with external annulations
Spiny cuticle	Lack of spiny cuticle
Western countries	Africa, Malaysia, Manila, China, Middle East, Java, Southern Arabia
	P. moniliformis: 30 external annulations, frequently seen in South East Asias
	P. armillatus : 18-22 external annulations, frequently seen in Africa





Transmission:
> Egg: Raw snake, reptiles; Contaminated waters

> Nymphs: Uncooked sheep, goats, camels

Clinical presentation:

> Asymptomatic – majority of cases

> Symptomatic - visceral vs. nasopharyngeal disease

Visceral disease	Nasopharyngeal disease
> Ingest eggs	> Ingest encysted nymphs from uncooked sheep, goat
> P. armillifer/L. serrata	> L. serrata
> Produces pressure effects eg. gut obstruction and obstructive jaundice	> Halzoun and Marrara syndrome (Middle East/Sudan)
> Inflammatory reaction eg. peritonitis, pneumonitis, meningitis, pericarditis, nephritis	> Itching of throat, ears
	> Dyspnea/ dysphagia/ dysphonia
	> Facial edema/palsy
	> Headache, vomiting
	> Nasal discharge
	> Hearing loss

Diagnosis:
Radiologic diagnosis : calcification in CXR and Plain abdomen

Serological diagnosis: no reliable test routinely available

Treatment:
No effective antiparasitic drug

Surgical removal of the larvae is needed in symptomatic patients