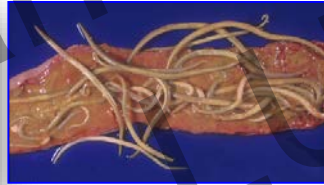


Case 1: “Again the same monkey comes out of the sleeve”
Case 2: “...and now for something completely different”
Case 3: “Don’t you send me into the woods again!”



Lisette van Lieshout and colleagues
Parasitology - LUMC
15 JAN 2019 – KPN UTRECHT

**THERE'S
NO BUSINESS
LIKE
SHOW BUSINESS**



Case 1: “Again ... the same monkey comes out of the sleeve”

Male, 54Y, born in Nigeria

16 Nov ‘18: Faeces to Para-morphology

Clinical info: *Dialysis patient. Status after 2x kidney Tx, immunocompromised, cavitary lung lesions*

Routine procedure:

- Microscopy
- HGC-PCR
- MSp-PCR
- S-PCR

Microscopy:
Strongyloides L1
Direct: $\approx$ 18 pp
Ridley: +

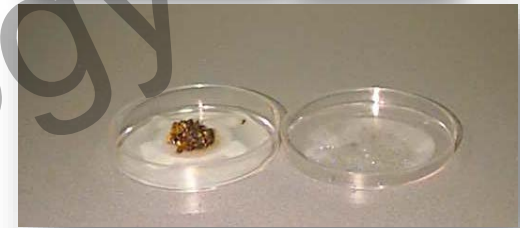
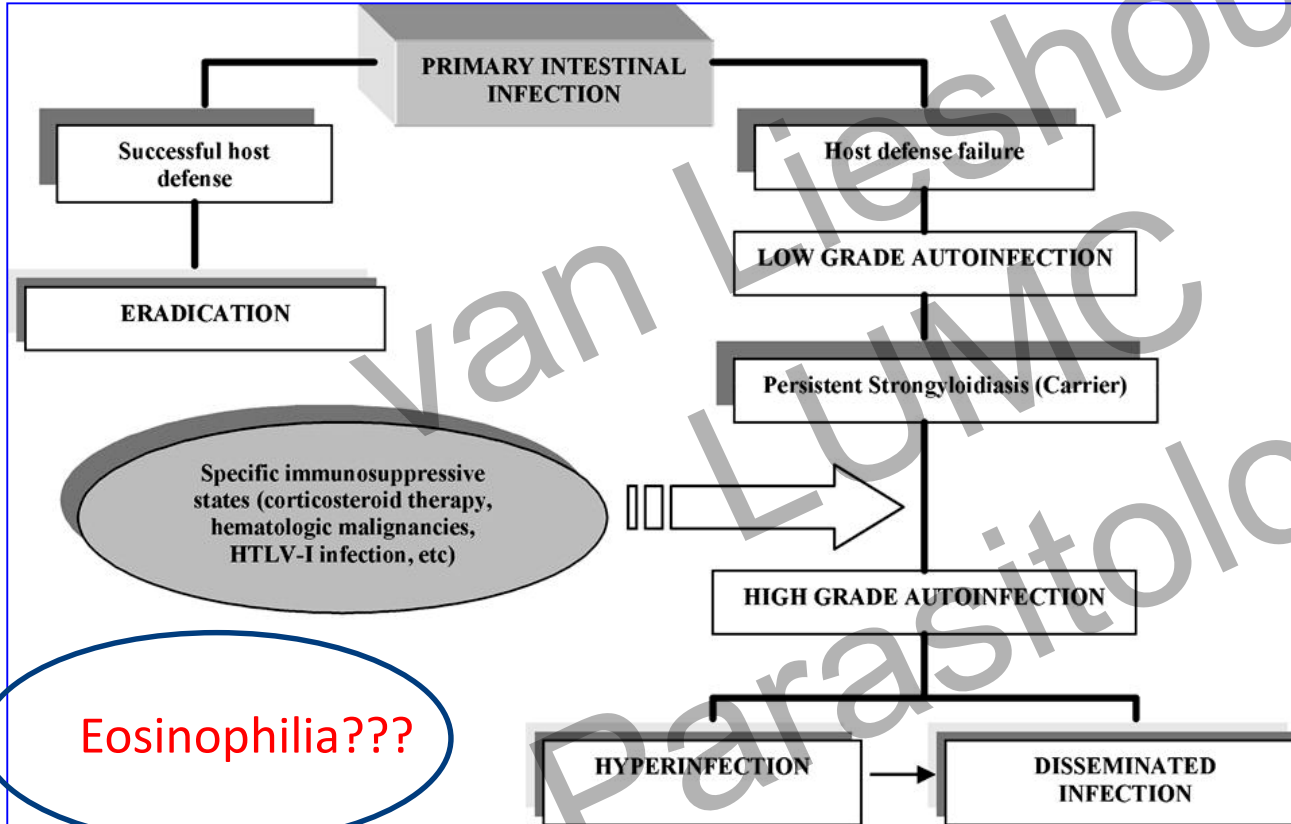
Not enough material
for Baermann or
Culture

PCR: Ct 19.8

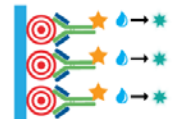


Strongyloides

The most deadly worm of the Netherlands?



Immobilised Antigen Conjugated Antibody Substrate Addition
Signal Detection & Quantification



More about the case

Clinic: Multiple issues: MR *E. coli* pneumonia, failing kidney function, endocarditis (cotrim); EBV, CMV

Follow-up Faeces:

(16 Nov '18 M: 2+ (Direct, Ridley) Ct 19.8

20 Nov '18 M: 2+ (Direct, Ridley); Ct 25.1 => start of 5days IVM

21 Nov '18 M: not enough; Ct 0

26 Nov '18 M: n.d.; Ct 0

Strongyloides the cause of pneumonia?

Sputum 17 Nov '18 M: n.d.; no DNA

BAL 22 Nov '18 M: negative (direct); Ct 0

***Strongyloides* antibodies?**

Serum (cut-off 1:40)

18 Nov '18 1:640

Archive:

26 April '11 missing

7 Nov '18 1:320 (3 Dec '18 tested)

Some weeks you are lucky – the same monkey

Male, 63Y, non-Dutch name

19 Nov '18: Faeces to Para-morphology

Clinical info: hospitalized; occult blood,
“screening liver transplantation”

(should have been: screening left ventricular assist device (LVAD))

Routine procedure:

- Microscopy
- HGC-PCR

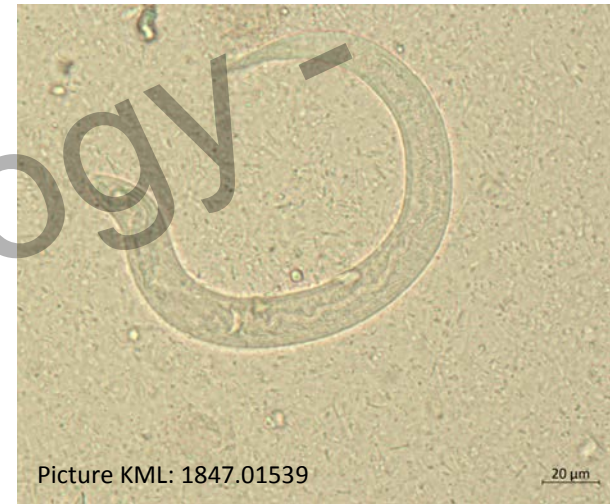
Strongyloides L1

Microscopy:

Ridley: +

Culture: +++

PCR: Ct 21.9



Direct in faeces

Movie KML of Strongyloides L1

Stool culture

Movie KML of Strongyloides culture

***Strongyloides* antibodies?**

19 Nov '18 – serum submitted, but no request *Strongyloides*

21 Nov '18 serum

Strongyloides 1:640 (Schisto negative)

No history of previous samples

Suriname, RA, immune suppr. medication (methotrexate);

Poor prognosis heart failure

No diarrhoea, only nauseous after eating

IVM treatment started

Not suitable for LVAD => no post IVM treatment follow-up

“... the same monkey comes out of the sleeve”

Conclusion:

- Level of communication between clinic and laboratory?
- Standard screening *Strongyloides* (serology and PCR)?

Case 2: “...and now for something completely different”

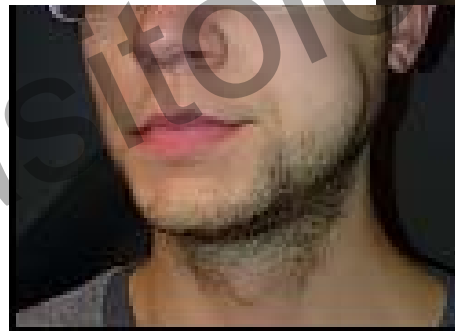
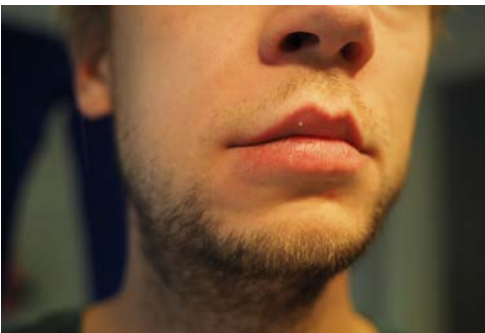
NL man 30 Y

6 year history of recurrent solitary swelling

On average 15 episodes/year

Started at abdomen, gradually to chest, neck,

Recently to face; every 3-4 weeks, different location



Case description

Treatment high-dose antihistamine => no effect

Otherwise healthy

No other symptoms, all possible dd negative (including Kimura disease)

Lab: except elevated IgE (3736 <normal =0-99>) no abnormalities

Travel:

2011 Turkey, Miami, Taipei, Singapore

2012 Russia, Orlando, Curacao, Italy

Exposure: uncooked fish during travel,
possibly uncooked meat, ceviche, no snakes

Biopsy

Buccal mucosa: dense eosinophilic infiltrate
US & MRI – non-specific infiltration

Eosinophilic cellulitis?

- No vasculitis
- No folliculitis

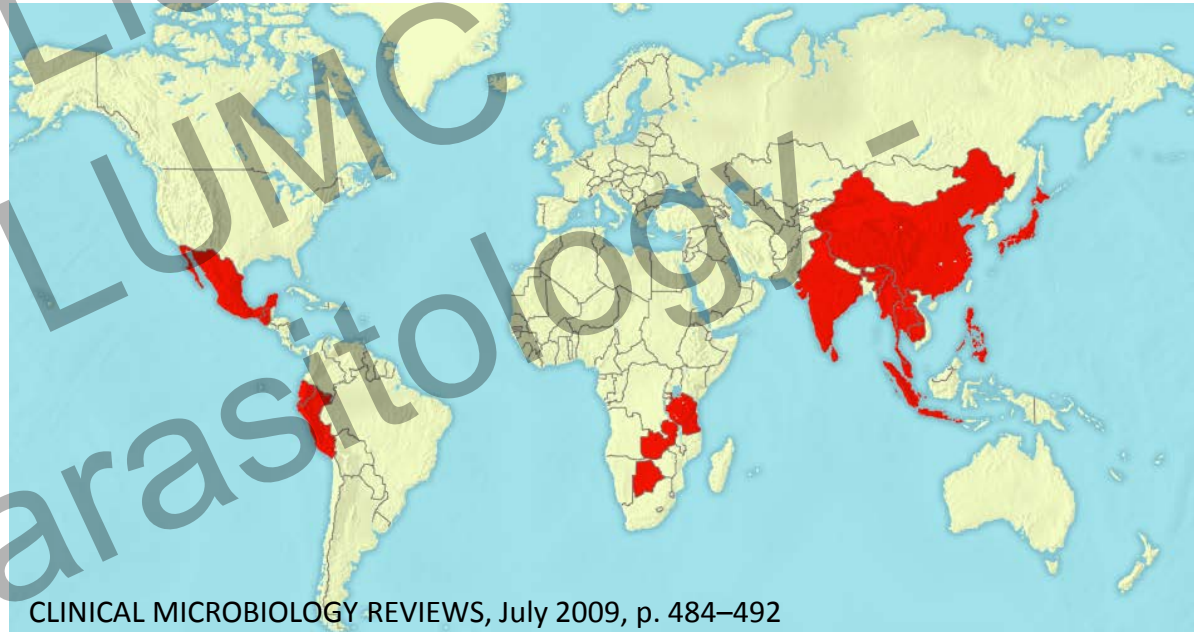
Parasitic infection??



Intermittent subcutaneous swelling

Gnathostomiasis? Serum samples send to Basel

Basel: Wb positive α 24 kDa crude antigen of *G.spinigerum* (Asia)



Gnathostoma

Nematode, migrating L3
Fresh/brackish water fish/animals

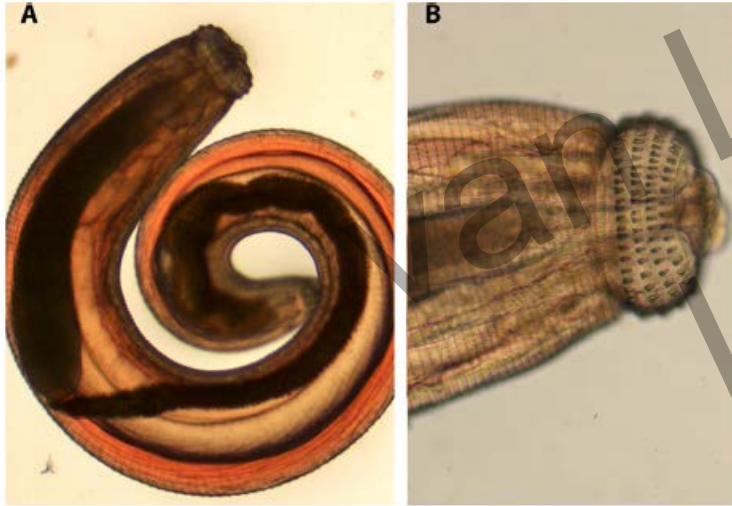
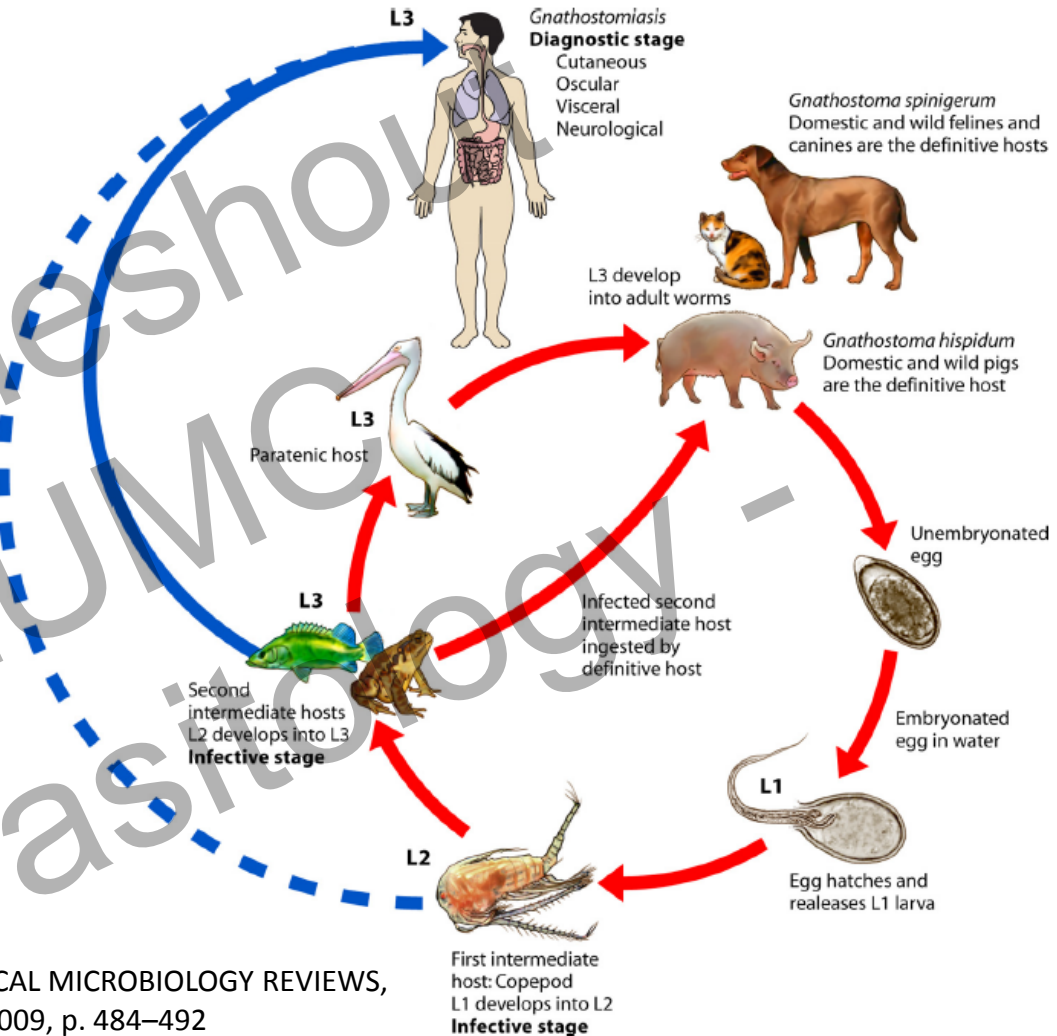


FIG. 3. Photograph of a third-stage larva of *Gnathostoma spinigerum*, showing the entire larva (A) and the head with hooks (B).

L3: $\approx 2-15$ (?) mm long x 1 mm wide

Characteristic head, spines



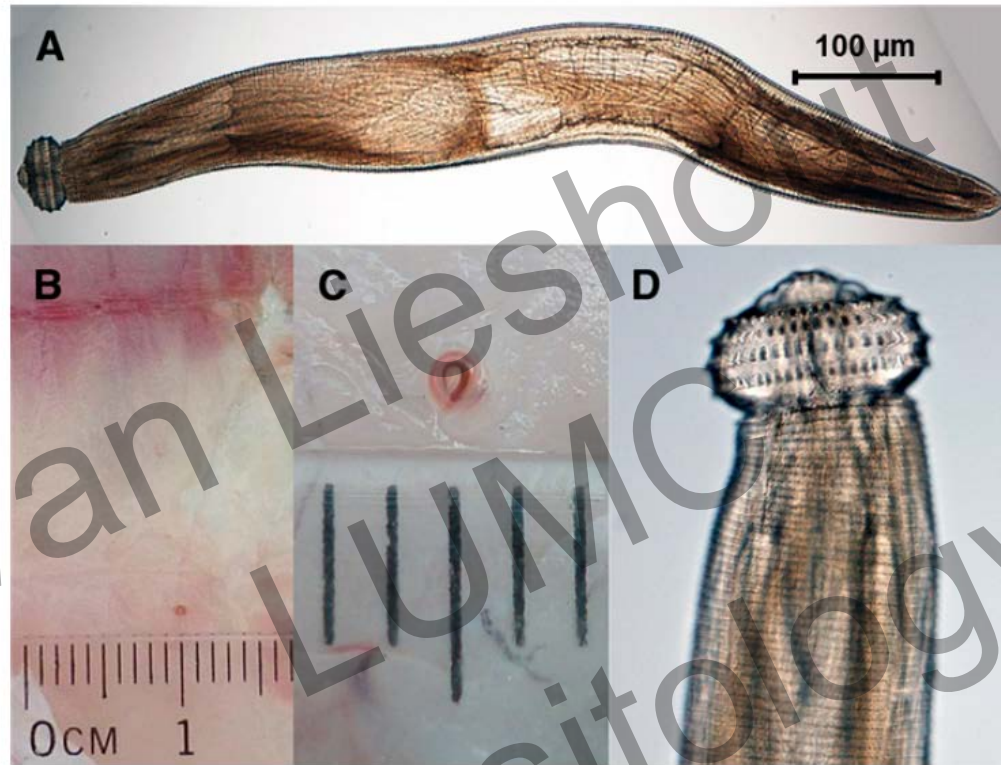


FIGURE 1. Morphological characteristics of *Gnathostoma* larvae: (A) advanced third-stage larvae (AL3) of *Gnathostoma binucleatum*, (B, C) encysted AL3 larva in the muscle of freshwater fish, and (D) characteristic cephalic region of *Gnathostoma* spp. covered by transverse rows of cuticular spines and the adjacent body covered with transverse rows of flat spines.

Neumayr et al., (2016)

Emerging zoonotic infection

See review: Bravo and Gontijo (2018) *An Bras. Dermatol* 93:172-80

Normal eosinophil count does not exclude

Chance of detecting parasite in biopsy is low

Serology (Basel, Bangkok)

Possible complications => migration to CNS (Thailand mainly)

Active migration up to 10-12 years

Strady *et al.* (2009); AJTMH 80:33-35

N=13 imported cases (France); 12x ALB, 1x IVM

2x GI; 9x cut, 2x neuro, 10/13 with hyper-eos

8 showed relapses (median 2 months AT) => follow-up advised 6-12M

Emerging zoonotic infection

Neumayr *et al.* (2016) AJTMH 95: 413-16

Serology in Basel

G. spinigerum blot, is standard serology=> Asian gnathostomiasis

Experimental *G. binicleatum* blot => American and Asian gnathostomiasis

But possible cross-reactivity with other tissue migrating nematodes

Follow-up of our case

Treatment:

Ivermectin (0.2 mg/kg 1xdd, 2d)

Increased swelling, head visible

Eosinophilia (1.03×10^9 $<0.5 \times 10^9>$)

Albendazole 400 mg 2xdd, 14 d

Symptoms resolved



Figure: Facial swelling caused by gnathostomiasis

Impression of the head of the larva is visible in the lower lip (arrow).

Case 3:

“Don’t you send me into the woods again!”

Catharina ziekenhuis (PAMM) (begin december 2018):

Het gaat om een **38 jarige man** die bij ons terecht kwam met onderstaande klachten, **eosinofilie en afwijking in long en lever** na een **wereldreis**

Een jaar gereisd door **Zuid Amerika**, midden en zuidoost **Azië**

Vaccinaties gehad: HAV, Typhus, DTP, Rabies

Blanco voorgeschiedenis

Tijdens de reis 1 maal fors misselijk en braken, 1 dag koorts, verder helemaal niet ziek geweest; wel tijdens de reis 25 kg afgevallen

Case 3:

“Don’t you send me into the woods again!”

Heeft alles gegeten en gedronken, overal gezwommen, is door van alles gestoken (1 maal door een teek)

Kortom, heeft nergens rekening mee gehouden

Sinds terugkomst in augustus minder fit, langzaam verminderen van conditie

Klachten geleidelijk aan begonnen

Pijnklachten in de nek

Case 3:

“Don’t you send me into the woods again!”

De laatste 6 weken verspringende **gewrichtspijnen** waarbij zeer **forse zwelling** rond de gewrichten, iets jeukend en bleek van kleur; komt redelijk snel opzetten, na paar dagen weer afnemend; vorige week veel pijn in de knieën, nu linker pols

Huidafwijkingen -; geen koorts, wel nachtzweeten

Labwaarden

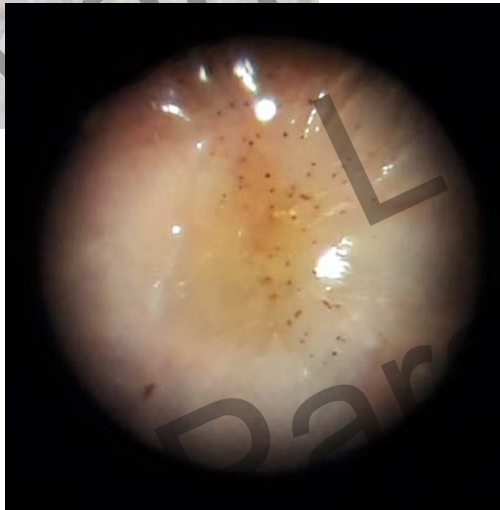
Bezinking	H	45	mm/uur	<15
Hemoglobine	L	7.9	mmol/L	8.5-11.0
Hematocriet	L	0.39	L/L	0.40-0.50
Erythrocyten	L	4.2	$\times 10^{12}/L$	4.5-5.5
MCV		92	fL	80-100
MCH		1.88	fmol	1.70-2.10
Reticulocyten		83	$\times 10^9/L$	25-120
RET-HE	N	2.024		>1.77
Trombocyten	H	450	$\times 10^9/L$	150-400
Leucocyten	H	20.2	$\times 10^9/L$	4.0-10.0
Differentiele telling	N			
Neutrofielen		4.7	$\times 10^9/L$	1.5-7.5
Eosinofielen	HH	>10	$\times 10^9/L$	0.10-0.50
Basofielen		0.030	$\times 10^9/L$	<0.20
Lymfocyten		2.6	$\times 10^9/L$	1.0-3.5
Monocyten		0.74	$\times 10^9/L$	0.10-1.0
Differentiele telling (micr.)	N			Zie ook KCconsult
Rode beeld	N			g.b.
Witte beeld (granulocyten) micr	N			



Larve uit de huid (10 dec 2018)



Larve uit de huid (± 25 dec 2018)



Serologie LUMC

Fasciola (IFA)	negatief
Schistosoma	negatief
Strongyloides	negatief
Filaria (IgG)	grens (1:80)

13 januari: zou nieuwe larve uit huid zijn gekomen (?????)

Suggesties????