

# A case of Viral Meningitis

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- 47 years old male, fit and healthy with no significant past medical history
- Holiday in Cyprus for 4 weeks
- One week before admission, diarrhoea, transient rash on right leg. Mosquito bites while on holiday
- Presented one day after returning to UK with fever 38<sup>0</sup>C, neck stiffness, frontal headache, photophobia
- No rash and no neuroglial deficit

# Investigations

- Normal U&E
- Normal LFTs
- CRP 7 mg/L (0.0 – 5.0)
- Normal WBC, RBC and platelets count
- Neutrophils  $4.9 \times 10^9$  (1.6-4.6)
- Monocytes  $0.63 \times 10^9$  (0.2-0.61)

# Investigations

- CSF:
  - RBCs 855/ul, WBC 45/ul (100% lymphocytes)
  - Glucose 3.6 mmol/L (blood glucose 6.0 mmol/L)
  - Protein 1.00 g/L
  - No xanthochromia
  - HSV 1 and 2, VZV, enteroviruses, parechoviruses PCRs negative
  - Cryptococcus antigen negative
  - Meningococcus PCR negative

# Investigations

- Serology: HIV, HBV, HCV, syphilis negative
- Urine: Chlamydia and GC PCR negative
- Blood Culture: Negative
- Throat Swab: negative for respiratory viruses
- Chest X-ray: NAD

- Examination: NAD
- Started on ceftriaxone
- Clinically improved and discharged home 48 hours later on oral analgesics

# Investigations

- Rare and Imported Pathogen Laboratory:

	25/10/19	12/11/19
West Nile Virus	Negative	
Tick borne encephalitis virus	Negative	
Rickettsia	Negative	
Sandfly Sicilian	Negative	Negative
Sandfly Naples	Negative	1:100
Sandfly Cyprus	Negative	Negative
Sandfly Toscana	<b>1:100</b>	<b>1:10000</b>
Sandfly Toscana: CSF PCR	Negative	

# The Virus

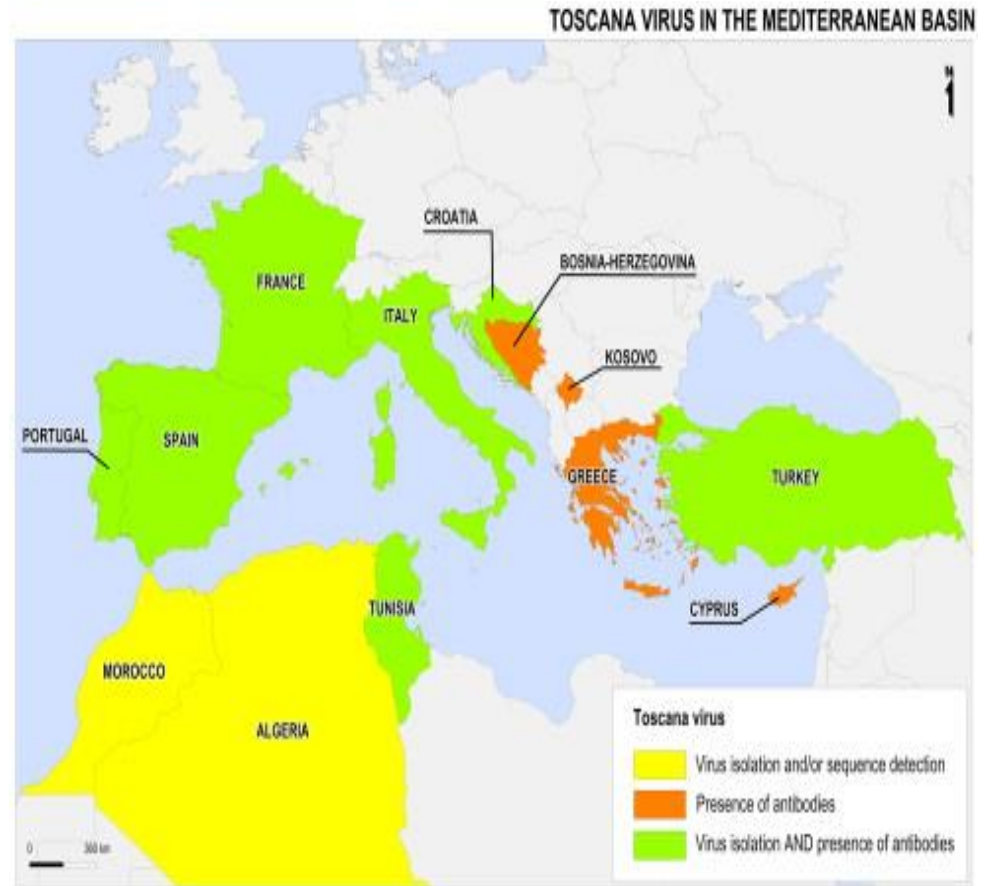
- Isolated 1971
- Family: Bunyaviridae
- Genus: Phlebovirus
- Vector: Phlebotomus sandfly
- Negative sense RNA virus
- Genome 3 segments: L coding for RNA-dependent RNA polymerase, M coding for viral envelop glycoprotein, S coding for nucleocapsid and non-structural proteins.
- 3 genotypes A and B in Southern Mediterranean and North Africa and C in Balkan region





# Seroprevalence

Italy	30-50%
France	12-14%
Spain	5-26%
Portugal	4.2%
Greece	11-51%
Croatia	37%
Cyprus	20%
Turkey	56%
Tunisia	10%
Bosnia-Herzegovina	10.3%
Kosovo	5.5%
Bulgaria	24%



*Alkan et al Antiviral research 2013*

# Clinical Picture

- Incubation period 3-7 days followed by mild febrile illness
- Only sandfly phlebovirus associated with CNS manifestations
- CNS infection: headache, fever, nausea, vomiting, myalgia, neck rigidity, tremors, nystagmus
- Other manifestations: encephalitis, meningoencephalitis, deafness, persistent personality alteration, unconsciousness, seizures, fatal encephalitis and epididymo-orchitis
- No evidence of reinfection

