

Confusion and reduced conscious level in the returning traveller

Chris Cunningham

Ewan Hunter

Abstract

This article provides a practical approach to the management of travellers returning from tropical countries and presenting with confusion or reduced consciousness. The most common treatable causes of neurological symptoms in this cohort are malaria, bacterial meningitis and viral encephalitis. There is an extensive list of less common causes including HIV, leptospirosis, rickettsia, syphilis, tuberculosis and typhoid. Each differential diagnosis should be considered based on presentation and travel history, including any risk behaviours. A thorough history and examination is the starting point to forming a differential diagnosis, which should be based on up-to-date endemic and epidemic data, incubation periods and presentation. A knowledge of the distribution of infectious diseases and mode of transmission is essential. There are very good online resources to use as references for information about tropical infections. Alongside these, expert advice should always be sought from a specialist in infectious diseases or tropical medicine.

Keywords CNS infection; encephalitis; malaria; meningitis; MRCP; tropical neurology

Introduction

Travel to tropical countries increases annually, with >10 million visits from the UK to countries outside Europe and North America in 2016. Many travellers report health problems; 10% or more present to medical services, either abroad or on returning home.

Travellers arriving from tropical countries can present with confusion and/or reduced consciousness (CRC). Infectious causes should always be considered, some of which can be serious or fatal if diagnosis is missed or delayed. The most important are malaria, bacterial meningitis and viral encephalitis; these should always be considered in the presence of neurological symptoms, with or without fever. If they are excluded, consider other communicable diseases that are endemic to or have a greater prevalence in tropical countries.

Chris Cunningham MB ChB MRCP DTM+H is a Clinical Fellow in Infectious Diseases and General Medicine, Department of Infection and Tropical Medicine, Royal Victoria Infirmary, Newcastle, UK. He has tropical NGO experience in Panama with Floating Doctors and in India with Médecins Sans Frontières. Competing interests: none declared.

Ewan Hunter MB BS MRCP DTM+H PhD MSc is a Consultant in Infectious Diseases, Department of Infection and Tropical Medicine, Royal Victoria Infirmary, Newcastle, UK. Competing interests: none declared.

Key points

- Fever is not always present
- Malaria and bacterial meningitis are the most important treatable causes of confusion and/or reduced consciousness in the returning traveller and should always be excluded
- Use online resources to find data on endemic diseases, emerging epidemics and outbreaks
- Immunocompromise should always be considered
- The differential diagnosis is potentially very broad – consult a specialist in infectious diseases or tropical medicine early

These include HIV, leptospirosis, rickettsial infections, syphilis, tuberculosis and typhoid. Important rarities include neurocysticercosis, African trypanosomiasis, rabies and viral haemorrhagic fevers.

Non-infectious causes of confusion or decreased consciousness should also always be considered. Presentations with stroke, dementia, demyelinating disorders and epilepsy can coincide with rather than be directly related to travel. Alcohol and recreational drug use are commonly associated with travel.

History

An accurate travel history is essential (see Assessment of returning travellers with fever, p 2–9). Travel destinations should be checked against up-to-date epidemiological information. A number of excellent online resources are available and should be consulted early (Table 1).

A collateral history should always be obtained for any patient presenting with CRC. Phone numbers of travelling companions, household members and other sources of information should be sought and used. This can and should be done in the patient's best interests if they lack capacity at the time of assessment. Doctors working in the UK should be familiar with the Mental Capacity Act 2005, which provides clear guidance and support in such situations.

Initial assessment and examination

A careful and systematic examination of all body systems should be performed, starting with an 'ABCDE' approach. The patient should be fully exposed ('E') and carefully inspected for rashes, eschars (indicative of tick bites), lymphadenopathy (cervical, axillary, inguinal) and lesions of the external genitalia (vesicles, chancres, warts) indicative of sexually transmitted infections. In confused patients, a baseline Glasgow Coma Scale (GCS) score should be documented; the presence of markers of the Quick Sepsis-related Organ Failure Assessment (Q-SOFA) or systemic inflammatory response syndrome (SIRS) suggestive of sepsis should be acted on following local protocols.

Figure 1 summarizes suggested approaches to initial assessment and investigation. Most patients require a lumbar

Useful online resources

- ProMED-mail:
 - <https://www.promedmail.org>
 - Real-time information on outbreaks and epidemics
- Centers for Disease Control and Prevention (CDC):
 - <https://www.cdc.gov>
 - Information on the distribution, transmission, clinical features, diagnosis and treatment of infectious diseases
- Public Health England (PHE):
 - <https://www.gov.uk/government/organisations/public-health-england>
 - UK-specific information for the management of specific infectious diseases, for example a viral haemorrhagic fever algorithm (i.e. Ebola, Lassa and others), rabies risk stratification and information on notifiable diseases
- National Travel Health Network and Centre (NaTHNaC):
 - <https://www.nathnac.net/>
 - Travel health information aimed at professionals advising travellers. News and information is given by country on vaccinations, infectious and non-infectious diseases, malaria prevention and disease outbreaks

Table 1

puncture (LP); typical cerebrospinal fluid (CSF) parameters in central nervous system (CNS) infection are summarized in [Table 2](#). A GCS score <12, focal neurology or seizures can indicate raised intracranial pressure; any patient presenting with these features must have a computed tomography (CT) head scan before LP to exclude any space-occupying lesion(s).

Formulating the differential diagnosis

A knowledge of incubation periods, clinical presentations, geographical distributions and modes of transmission of infectious diseases is essential to formulating a differential diagnosis. Non-specialists should seek expert advice early.

Malaria

Plasmodium falciparum malaria is the species of malaria most frequently imported into the UK. Falciparum malaria causes severe disease through sticking down (sequestration) of parasite-infected erythrocytes within end-organ vessels, including the brain. *Plasmodium vivax* and *Plasmodium knowlesi* can also rarely cause severe, complicated disease.

Cerebral malaria should be suspected and urgently excluded in any patient presenting with CRC who has travelled to a malaria-endemic area within the last 12 months. Patients presenting with CRC in whom malaria is confirmed should be considered as having cerebral malaria. They should be admitted hospital for *immediate intravenous* antimalarial therapy (artesunate or quinine). Note that while artesunate is currently unlicensed in the UK and the EU, it is available in many centres and is the recommended treatment for severe or complicated disease.¹ Seek expert advice promptly to discuss options but do not delay treatment. The management of cerebral malaria is otherwise supportive. Liaise early with critical care regarding sedation, intubation, fluid balance, etc. In general, empirical treatment for malaria should never be given. For more details on the diagnosis and treatment of malaria, see [Malaria](#), p 52–58.

Meningitis

Bacterial meningitis: the diagnosis and management of bacterial meningitis in returning travellers is no different from that in other patient groups. Be aware that bacterial meningitis is always a medical emergency, and can present with CRC, focal neurology or seizures in the absence of the classical triad of headache, nuchal rigidity and photophobia. Signs traditionally considered to indicate meningeal irritation (Kernig's, Brudzinski's) are elicited in at most 30–50% of cases. Meningococcal meningitis can be associated with outbreaks, as occurred during the Hajj pilgrimage in 2000/2001 (serogroup W135). *Streptococcus pneumoniae* meningitis is often associated with ear, nose and throat infections such as otitis media, sinusitis and mastoiditis. *Listeria* is associated with age >65 years, pregnancy, neonatal state and immunocompromise, and can also occur in outbreaks.

Any patient in whom bacterial meningitis is a possibility should be treated empirically with broad-spectrum intravenous antibiotics, given if possible after the collection of blood cultures and CSF (see [Table 2](#) for CSF parameters typically seen in bacterial meningitis and other infections). If pneumococcal meningitis is suspected then intravenous corticosteroids (dexamethasone 8.3 mg four times daily) should be given along with the first dose of antibiotics and continued for 4 days or until an alternative diagnosis is established.² Note that the British Infection Association gives a slightly different dose for dexamethasone of 10 mg. This refers to dexamethasone phosphate and is equivalent to the dose of 8.3 mg of dexamethasone base given by the British National Formulary.

Tuberculous meningitis (TBM): CNS tuberculosis, including TBM, occurs in around 1% of all patients with active tuberculosis. In countries with a low prevalence, such as the UK, most cases are in adults, often immigrants from high-prevalence areas. Although there are no signs, symptoms or findings that can reliably distinguish TBM from bacterial meningitis, prolonged illness (≥ 6 days), more moderate elevations in blood and CSF white cell

Download English Version:

<https://daneshyari.com/en/article/8764110>

Download Persian Version:

<https://daneshyari.com/article/8764110>

[Daneshyari.com](https://daneshyari.com)