

CAMPYLOBACTER



“Grapes Peaches and Almonds” oil on canvas, 1864, Edouard Manet.

On the 27th night, Shahrazad continued....

You must know your majesty that last night I was with a group who had organized a recitation of the Quran, for which the faqihs had been brought together. When the reciters had performed their task and finished, a table was set out and among the foods that were produced was a dish made with sugar almonds and vinegar we came forward to eat, but one of our number held back and refused to join in. We urged him, but he swore that he would not eat any of it, and when we pressed him, he said, “Don’t force me. What happened to me the last time I ate that is enough for me” he recalled.

When he had finished speaking, we urged him to tell us why he had refused the dish. “If I had to eat it”, he said, “I can only do that after I have washed my hands forty times with

soap, forty times with potash and forty times with galingale; that is a total of a hundred and twenty times". At that our host gave orders to his servants, who brought water and the other things for which he had asked, after which he washed his hands as I have described. He then came reluctantly, sat down, and stretched out his hand, apparently in fear, plunged it into the dish, and started to force himself to eat, filling us with surprise. His hand was shaking as he raised it up, we could see that the thumb was missing and that he was eating with four fingers. We asked what had happened to his thumb, whether he had been born like that or whether he had suffered an accident.

"Brothers", he replied, "it is not only this thumb, but the other one as well together with both my big toes"...he then uncovered his left hand, and we found that it was like the right, and similarly that the big toes were missing from his feet. This sight added to our astonishment and we told him that we could not wait to hear his story, the reason for his mutilation, and why he washed his hands, and hundred and twenty times.

Shahrazad then explains how this man had fallen in love with one of the maidservants of Lady Zubaida, who happened to be one of the wives of no less than the great Caliph, Harun al Rashid! The girl had reached a position of great authority in the Harem and had been allowed by the Lady Zubaida to clandestinely go into the streets of Baghdad whenever she liked. She met the man and they fell in love. The girl wanted to marry him and begged the Lady Zubaida's permission. She agreed providing that he could be smuggled into the Harem for her to meet him and see if she approved of him. But she warned that if he were to be discovered he would be instantly put to death! After several harrowing close calls, he is smuggled into the Harem and meets the Lady Zubaida, who happily approves of him. Shahrazad then goes on to describe the unfortunate man's description of their wedding night....

"...I kissed the ground before her, happy that I was to be allowed to marry. On Lady Zabaida's orders, I stayed in the palace for ten days...The servants then brought a small table, on which among other dishes was a plate of sugared almonds and vinegar, on top of which had been poured rosewater scented with musk. It contained roasted chicken breasts and an astonishing variety of other ingredients. I didn't wait but set upon it and ate my fill, but although I wiped my hands, I forgot to wash them. I sat there until nightfall, when the candles were lit and the singing girls came in with their tambourines. They went round the whole palace, displaying the bride and being showered with gold coins, after which they brought her forward, having taken off all her outer clothes.

I found myself alone with her on the bed, and I embraced her, scarcely believing that I was going to enjoy union with her. Then, on my hand, she caught the scent of the dish I had eaten and she screamed aloud! The maids came in from all sides, while I trembled not knowing what was happening. "What is the matter with you sister?" they asked. "Remove this madman from me", she said, "for I thought that he was a person of sense". "What symptom of madness have you seen in me?" I asked her. "Madman", she said, "How is it that you ate the almond dish without washing your hands? By God I shall repay you for what you have done. Is someone like you to sleep with someone like me?". Then from beside her she took a plaited whip and started to beat my back, and then my buttocks with so many strokes that I fainted. "Take him", she ordered the maids, "and

bring him to the city magistrate to cut off the hand with which he ate the almond dish and which he failed to wash”.

When I heard this, I exclaimed: “There is no might and no power except with God! Is my hand to be cut off simply because I ate that dish and didn’t then wash my hands?” The maids interceded with her and said, “Sister don’t punish him this time for this fault”. “I must cut off some of his extremities”, she said, after which she went away. She stayed away for ten days, during which I didn’t see her, but after that she came back to me and said: “I’ll teach you how to eat without washing your hands!” then she called to the maids, who tied me up, and taking a sharp razor she cut off my thumbs, and then my big toes, as you all can see. I fainted, but she sprinkled powder over me, which stopped the flow of blood. I started to say that I would never again eat that dish without first washing my hands forty times with potash, forty times with galingale, and forty times with soap. She made me swear to do this, as I have said, and that is why, when you produced this dish, I changed colour and said to myself that this was why I had lost my thumbs and my big toes, and when you forced it on me, I said that I must keep the oath that I had sworn”.

*Nights 27 & 28 in
“The Arabian Nights”,
(or “Tales of the Thousand and One Nights”)
c. Ninth - Tenth Century A.D*

One of the very best ways in which “people of sense” can protect themselves and others from nasty gastrointestinal diseases is by the thorough washing of hands, though perhaps this need not necessarily be done “a total of 120 times”!

... unless of course if one is about to sleep with an Arabian Harem girl of the great Caliph, Harun al Rashid!

CAMPYLOBACTER

Introduction

Campylobacter jejuni is one of the causes of bacterial dysentery.

Campylobacter enteritis is frequently a foodborne zoonosis. (A zoonosis is an infectious disease that is transmitted between species (sometimes by a vector) from animals other than humans to humans).

Clinical disease is usually self-limited.

These infections are now one of the most commonly notified of the enteric pathogens in the state of Victoria, and the incidence appears to be increasing.

Epidemiology

- All age groups can be affected, but the most commonly affected groups are children less than five years of age and young adults.
- Most cases in Australia appear to be sporadic but food and water-borne outbreaks also occur.
- It is likely that many outbreaks are not detected.

Pathology

Organism

Campylobacter (meaning “twisted bacteria”) is a genus of bacteria that has a characteristic spiral or corkscrew morphology

They are Gram negative organisms

They are also motile, having either unipolar or bipolar flagella.

The most common *Campylobacter* species that cause infection are:

- *C. jejuni*
- *C. coli*
- *C. fetus*
- *C. lari*
- *C. upsaliensis.*



Electron micrograph of campylobacter bacteria.

Transmission

- Infection usually occurs by ingestion of the organism via contaminated foods, particularly raw or undercooked meats, and in particular poultry.
- Person to person transmission via the faecal-oral route is also common.
- Infection may also occur through contact with infected animals.

Incubation Period

- The incubation period is usually two to five days, but can range from one to ten days.

Reservoir

- Many animals can carry Campylobacter species.
Birds and domestic animals in particular can carry the organism.

Period of Communicability

- Cases are infectious throughout their illness.
- Excretion of organisms may continue for some weeks after symptoms resolve.

Susceptibility and Resistance

- All non immune people are susceptible to infection.

- Immunity to serologically related strains may follow infection and this may be more common in high incidence regions.

Clinical Features

Campylobacter infection may be subclinical.

It can cause a GIT type illness of variable severity, where symptoms can include:

1. Fever
2. Nausea, vomiting
3. Anorexia
4. Abdominal pain
5. Diarrhoea:
 - This may be mucopurulent or bloody, producing a dysentery type picture.

The duration of illness is generally around two to five days.

Campylobacter infection has been associated with some rare complicating sequelae including:

- Reactive arthritis
- Guillain-Barré syndrome

Human infection with **C. fetus** may cause localised abscesses or generalised sepsis particularly in immunosuppressed persons.

Differential diagnosis:

The main differential diagnoses will include other causes of invasive dysenteries; these include:

- Salmonella.
- Shigella
- Entamoeba histolytica
- E. Coli, (some strains)
- Yersinia enterocolitica

- Campylobacter jejuni

Investigations

Blood tests:

- FBE
- CRP
- U&Es/ glucose

Microscopy and culture

Infection is diagnosed by culture of Campylobacter species from faeces, blood or other clinical specimens.

Management

Prevention is dependent on good personal and food hygiene.

Raw meats should be cooked thoroughly and refrigerated after cooking, especially poultry.

Unpasteurised milk and dairy products should not be consumed. Recognise pets as sources of infection and encourage hand washing after handling animals.

For established disease:

1. Supportive care, such as IV fluid resuscitation and electrolyte replacement is given, as for any dysentery.
2. Antibiotics:

Antibiotic therapy is indicated in **severe** cases or **prolonged** cases, (where prompt termination of faecal excretion is desired).^{1,2}

Therapy may also be justified in **late (third trimester) pregnancy**, or in certain patient groups such as **immunocompromised** people, infants or frail elderly people.

Note that in general terms antibiotics are not indicated for diarrhoeal disease in which the causative pathogen is not known, except in cases of severe illnesses when empirical treatment may be considered.¹

The following can be used:²

- Azithromycin

Or

- Ciprofloxacin

Or

- Norfloxacin

Note however that resistance to macrolides and quinolones appears to be increasing and expert advice will be necessary for these cases.

See latest edition of Gastrointestinal Therapeutic Guidelines for full prescribing details.

3. Asymptomatic contacts do not need stool cultures or treatment.
4. To prevent further transmission the importance of hand washing and personal hygiene should be stressed, particularly with respect to **food preparation**.

School Exclusion:

Exclude cases from child care and school until after diarrhoea has ceased.

Additionally Health care workers, child care workers, food handlers and children in school and child care centres should be excluded from work or school until diarrhoea has ceased. As asymptomatic excretion may persist, diligent personal hygiene is required.

Notification:

Campylobacter infection (Group B disease) must be notified [online](#) or in writing within five days of diagnosis.

Laboratories are required to notify *C. jejuni*, *C. coli* or *C. lari* isolated from water supplies or *C. jejuni* detected in food.

References

1. The Blue Book, Website May 2013.
2. Gastrointestinal Therapeutic Guidelines, 5th ed 2011.

Dr J. Hayes

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