

Exotic pets and practising vets.... the perils

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British Infection Society
Trainees' Meeting
11th September 2007



Case history 1

Case history 1

- 11 wk old female admitted with fever on 2/11/06
- Born at term by NVD, no complications
- On examination: temp 39.5°C, irritable, bulging fontanelle and purpuric rash on lower limbs
- CRP 23, WCC 26.6
- Diagnosis: meningococcal septicaemia +/- meningitis

Case history 1

- Treated with 7/7 cefotaxime and 4/7 dexamethasone
- No LP done
- Blood cultures negative
- Blood PCR negative for meningococcus and pneumococcus
- Discharged well 8 days after admission

Case history 1

- Readmitted 10 days later
 - Irritable, fever, similar to previous presentation
 - CRP <3, WCC 24.5
 - Started cefotaxime, ampicillin and aciclovir
 - CSF: 200 polymorphs, protein 0.58, glucose 2.1 (serum 6.6), no organisms seen

Case history 1

- GNB isolated from CSF after <12 hours
- Changed to IV meropenem (40mg/kg tds)
- Blood cultures also isolated GNB
- US head - no collections seen

- Identified *Salmonella* serotype Arizona
 - Sensitive to amp/cefotax/cipro/gent/imipenem

Case history 1

- Further history
 - Extensive contact with reptiles in family home
 - Family of 7 living in 2 bedroom flat with 8 snakes
 - Father admitted handling infant after handling snakes
 - Siblings often allowed to feed the reptiles
- Continued meropenem for 3 weeks
- Discharged well 8/12/06, CRP <3
- Parents advised to remove reptiles from home

Case history 1

- Subsequently admitted again 23/12/06
- Similar symptoms, CRP 122, WCC 30.3
- *Salmonella* spp isolated from CSF
 - Same sensitivities
- Treated 4 weeks meropenem and ciprofloxacin
- Repeat LP 1 day prior to discharge was sterile
 - 0 WBC, protein 0.21, glucose 2.5

Case history 1

- T cell subsets and function normal
- HIV negative
- Immunoglobulins normal
- 2 snakes still remained in house
 - Parents insist conforming to hygienic handling

Reptile associated salmonellosis

- > 90% of reptiles carry *salmonella* spp asymptotically



Reptile associated salmonellosis



Reptile associated salmonellosis



Pet reptile population, US 2001

Animal group	Total population	Mean no per household
Turtles	1.07 million	1.7
Snakes	661,000	2.1
Lizards	545,000	1.3
Other reptiles	598,000	1.9

Reptile associated salmonellosis

- Human infections increasing as becoming more popular household pets
 - >500,000 British households with reptiles as pets
 - 6 fold increase in infections during late 1990s
 - Estimated 93,000 cases per year in US
- Young children most risk: <1 year, neonates
- Relapse common, at least 3-4 weeks treatment recommended from last sterile culture

Reptile Handling Steps

Follow these safe reptile handling steps...
and enjoy your pets!

As with many other animals, reptiles carry *Salmonella* bacteria which can make people sick. To reduce the chance of infection, follow these safe reptile handling steps.

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- Always wash your hands thoroughly after you handle your pet reptile, its food and anything it has touched.
 - Keep your pet reptile in a habitat designed for it; don't let it roam around the home.
 - Keep your pet reptile and its equipment out of the kitchen or any area where food is prepared.
 - Don't nuzzle or kiss your pet reptile.
 - Keep reptiles out of homes where there are children under 1 year of age or people with weakened immune systems. Children under 5 should handle reptiles only with adult/parental guidance. And, they should always remember to wash their hands afterwards.

Developed in collaboration with the Centers for Disease Control and Prevention (CDC)
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Warning over exotic pets after lizard kills baby

BY CHERRY NORTON
Health Correspondent

A GOVERNMENT health warning on the dangers of keeping exotic pets was issued yesterday after a three-week-old baby died from salmonella poisoning caught from a family's pet water dragon.

Professor Liam Donaldson, the chief medical officer, said children under five, pregnant women and the elderly should avoid all contact with reptiles.

The Public Health Laboratory Service says that cases involving salmonellas associated with reptiles have risen from 190 in 1998 to 258 last year. In the past six months, six people - five children and an adult - have caught salmonella from reptiles.

There has been a big increase in the number of exotic animals sold in Britain during the past 10 years, and the number of reptiles alone is reckoned to be in the tens of thousands. Nine out of 10 are believed to carry salmonella.

Most human salmonella infections caught from reptiles are mild self-limiting illnesses, characterised by diarrhoea,

fever and abdominal cramps. But severe and sometimes fatal illnesses are possible because complications such as salmonella meningitis and septicaemia can arise. Snakes, lizards, terrapins and other reptiles shed the bacteria in their faeces.

Professor Donaldson said: "Thousands of reptiles are now kept as pets, and it is important that their owners are made aware of the potential health risks associated with these animals.

"The advice I am issuing today will alert the public to the dangers of keeping reptiles, and I am also considering what further steps need to be taken."

In the United States, reptiles are now recognised as an important public health hazard. In 1996 an estimated 7.3 million reptiles were owned by the public, and about 93,000 cases of salmonella infection in America are now attributable to reptile or amphibian contact.

INDEPENDENT 24/2/00

Reptile associated salmonellosis

- Recommendations:
 - People at increased risk should avoid contact
 - <5 years of age
 - Pregnant
 - Immunocompromised
 - Not to be kept in childcare facilities
 - Information should be provided by pet shops
 - Keep away from food preparation areas

Case history 2

Case history 2

- 50 year old male vet attended adult dairy cow with putrefying stillborn calf *in utero*
- Foetotomy was required
- Posed significant manual difficulty and lasted over several hours
- Gloves were not worn
- Washed with soap and water before, during and after procedure

Case history 2



Case history 2

- 36 hours later raised papules and pustules erupted over forearms



Case history 2

- Pus swab isolated *Salmonella* serotype Newport in pure culture
- Commenced ciprofloxacin 750mg BD for 7 days with good resolution of the rash
- No systemic upset so stools were not tested
- Cow with obstructed delivery was not sampled

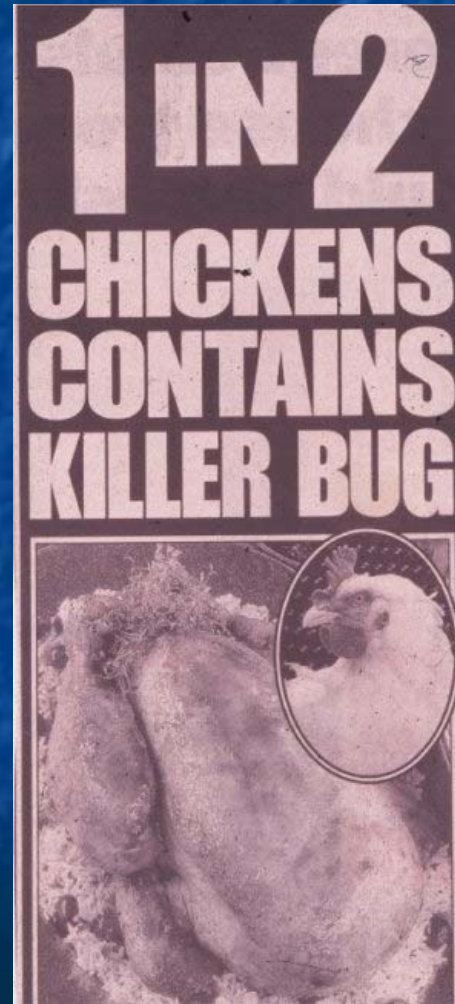
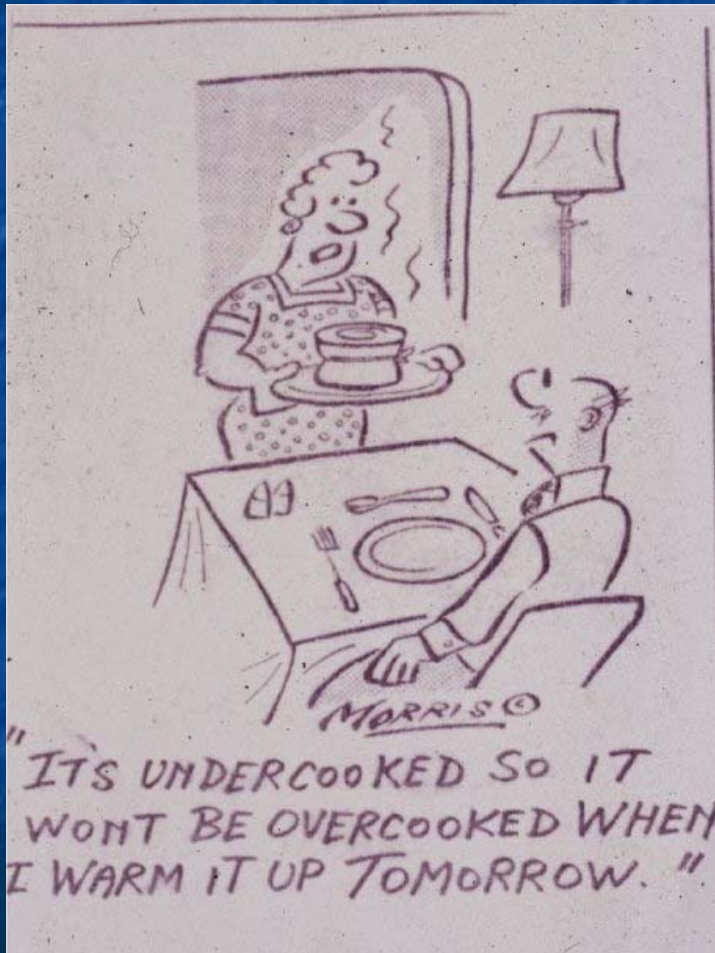
Salmonellosis in cattle

- *S. Newport* one of the most common serotypes isolated from cattle
 - Also *S. Dublin*, *Typhimurium*
- Causes significant disease in livestock
 - Commonly sub-clinical
 - Diarrhoea, weight loss, fever
 - Septicaemia, sudden death, abortion

Folliculitis in vets

- Skin irritation common
 - “calving rash”
 - Medical advice often not sought
 - May be self limiting
- Think of
 - S. Dublin, Newport, Abortus-equi (horses)
 - *Listeria monocytogenes*
 - (*Brucella abortus*)

Closing points



Closing points

Popular hotel is taken off tour companies' schedules after suffering outbreak, reports

Britons struck down by salmonella in Cyprus

Dozens of UK holidaymakers have been taken ill and several needed medical treatment after a salmonella outbreak at one of the most popular Mediterranean destinations.

This latest incident, at the Avlida Hotel in the Cypriot resort of Paphos, follows the high-profile case involving the Hotel Club Agamar on Majorca, where 650 guests were hit by salmonella in 1997 and 1998 followed by a further outbreak of illness among guests last summer.

watch's founder, Brenda Wall. "Those affected would have very serious compensation claims against tour operators."

A Peterborough couple, who arrived at the 200-room property on May 23 for a one-week stay, began to feel unwell towards the end of their holiday. Rita and Charles McKenzie said that, as the symptoms worsened, they were unsure whether they would be well enough to fly.

Mr McKenzie

pursuing the matter with the operator, which is investigating.

Four British travel companies that feature the three-star Avlida Hotel, were forced to offer clients alterna-

tive accommodation. The outbreak at the Avlida in the Golden Sun Holiday reported six cases of its clients, Olympic reported for

However, one directors dispute cause of the outbreak it could have cost external factors



THE TIMES MONDAY OCTOBER 18 1998

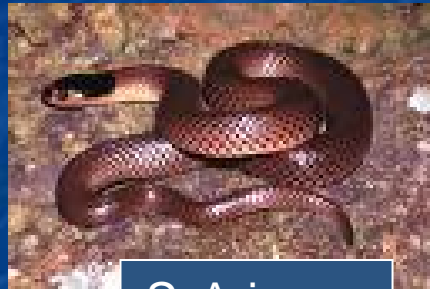
Bacteria feared in chicken imports

Closing points

- Presented two interesting cases which highlight extra-intestinal salmonellae infections

Closing points

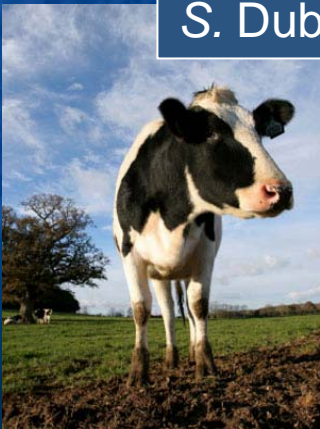
- Suspect zoonotic source if unusual serotype



S. Arizona



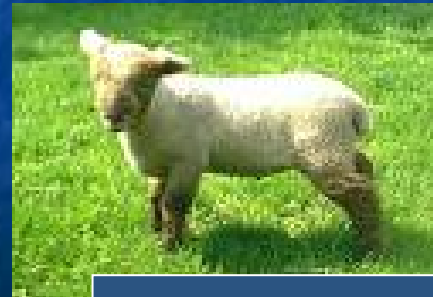
S. Marina



S. Dublin



S. Abortus-equi



S. Abortus-ovis

S. Cholerae-suis



Any questions?