Tapeworms and hydatid disease

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Contact with dog faeces infected with tapeworm eggs may cause hydatid disease, which is when cysts form in vital organs such as the liver. It is important to control tapeworm infection in domestic dogs – take your dog to the vet for treatment with anti-tapeworm medication.

Wash hands before eating, drinking and smoking and after gardening or handling animals.

The term ‘tapeworm’ describes a group of parasitic worms that live in the gut of animals, including humans. These infestations are found worldwide. They can be caused when humans consume raw or undercooked animal products that contain worm larvae (for beef or pork). Humans can also become infested after close contact with animals like cats and dogs.

In Australia, the most serious locally acquired form of tapeworm infestation is caused by the hydatid tapeworm (Echinococcus granulosis or E. granulosis), which can infect dogs and dingoes, particularly in sheep farming areas.

A person who comes in contact with the faeces of an infected dog (that is, when eggs from the tapeworm are passed in the faeces) may develop hydatid disease. This is serious and potentially fatal. Infection with tapeworm eggs causes cysts to form in vital organs such as the liver and lungs.

**Life cycle of a tapeworm**

The tapeworm needs two hosts to complete its life cycle:

- **Intermediate host** – such as sheep, pigs, cattle, goats, horses, camels, wallabies and kangaroos. Infection begins when the grazing animal eats dog or dingo faeces infected with tapeworm eggs. The eggs hatch in the animal’s gut into embryos (called oncospheres). These embryos penetrate the wall of the intestine and are carried in the bloodstream to vital organs such as the liver, lungs or brain, where they can develop into watery ‘blisters’ called hydatid cysts. These cysts contain around 30 to 40 tapeworm heads (the first segment of the tapeworm). A mature fertile cyst may contain several million such heads.

- **Definitive host** – such as dogs and dingoes. Infection begins when the animal eats offal that contains hydatid cysts. The swallowed cysts burst and the tapeworm heads travel to the gut and attach themselves to the intestine wall. The tapeworms are mature after about six weeks. An adult E. granulosis tapeworm is only six millimetres long. Thousands can inhabit the gut of an infected animal. Each mature worm grows and sheds the last segment of its body about every two weeks. This last segment contains immature eggs. The eggs are passed through the animal’s body in faeces and may stick to the animal’s hair or contaminate the vegetable garden. The eggs are highly resistant to weather conditions and can remain viable for months. The eggs have to be swallowed by an animal (intermediate host) to form hydatid cysts.

**Infection in humans**

Human infection does not occur from eating infected offal. People usually become infected by accidentally swallowing the tapeworm eggs passed in dog faeces. A human acts as an intermediate host in the same way as a sheep, horse or kangaroo. The eggs travel through the bloodstream, lodge in organs and form watery cysts full of tapeworm heads. This is known as hydatid disease or echinococcosis. Hydatid disease is not contagious and is not passed by person-to-person contact.

**Symptoms of hydatid disease**

The symptoms of hydatid disease depend on which organs are affected. The most commonly affected organ is the liver. The kidneys, brain and lungs are sometimes affected. In rare cases, hydatid cysts may form in the thyroid gland or heart or within bone.

Symptoms can occur a long time after infection, sometimes months or years later. Sometimes there are no symptoms at all. If they occur, symptoms may include:

- stomach upset
- diarrhoea
- unexplained weight loss
- swollen abdomen
- anaemia
- weakness and fatigue
- cough
- blood or the fluid from a ruptured cyst – may be coughed up
- jaundice – pressure from an enlarging cyst may cause jaundice.

Hydatid disease can be fatal without medical treatment. A heavily infested organ may fail or a cyst may rupture and cause a life-threatening allergic reaction (anaphylaxis).

**Diagnosis of hydatid disease**

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Diagnosis of hydatid disease may include:

- medical history
- physical examination
- x-ray examination
- ultrasound
- CT scan
- MRI scan
- examination of blood, urine, sputum, faeces or other bodily fluids if a burst hydatid cyst is suspected
- blood tests for antibodies to the cysts.

**Treatment for hydatid disease**

Surgery is the main form of treatment for hydatid disease. A risk of surgery is that a hydatid cyst may rupture and spread tapeworm heads throughout the patient’s body. To reduce this risk, the doctor may prescribe high doses of the drug albendazole in conjunction with surgery. This drug helps to destroy any remaining tapeworm heads. However, risk of disease recurrence is high. About one in three people treated for hydatid disease develop the condition again and need repeat treatment.

**Preventing infection from tapeworms**

Both phases of the tapeworm’s life cycle must be broken in order to prevent infection. Suggestions include:

- It is important to control tapeworm infection in domestic dogs. Infected dogs usually don’t have any symptoms. Don’t assume that your dog isn’t infected just because it seems happy and healthy.
- Regular preventive deworming of dogs is important, especially in rural areas where dogs may have access to animal carcasses.
- Take your dog to the vet for diagnosis and treatment (if necessary) for tapeworm infection. Treatment includes regular dosing with anti-tapeworm medicines.
- While your dog is undergoing treatment, dispose of its faeces carefully. Wear rubber gloves. Incinerate or bury deeply all dog droppings for at least three days. Wash your hands thoroughly after disposing of dog droppings.
- Thoroughly clean and disinfect the kennel and surrounding area.
- Always wash your hands with plenty of soap and water after touching your dog. Instruct children to do the same. Supervise small children when they wash their hands.
- Wash hands before eating, drinking and smoking and after gardening or handling animals.
- Only feed your dog with commercially prepared dog foods.
- Do not feed raw or cooked offal to your dog. This includes offal bought from a supermarket or butcher.
- Be especially vigilant if you are a sheep or cattle farmer. For example, keep your dog fenced or on a lead when it is not working to prevent it from eating carcasses.
- Do not allow your dog to roam when holidaying in country areas.
- If you grow your own vegetables, fence your vegetable patch to make sure that pets and wild animals can’t defecate on the soil.

**Where to get help**

- Your doctor
- Pharmacist
- Vet

**Things to remember**

- Contact with dog faeces infected with tapeworm eggs may cause hydatid disease, which is when cysts form in vital organs such as the liver.
- It is important to control tapeworm infection in domestic dogs – take your dog to the vet for treatment with anti-tapeworm medication.
- Wash hands before eating, drinking and smoking and after gardening or handling animals.

**References**


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Digestive system

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- Digestive system explained
- Oesophagus
- Stomach
- Small intestine
Digestive system explained

- **Barium tests**
  Barium tests are used to examine conditions of the digestive tract such as reflux, narrowing or ulceration.

- **Digestive system explained**
  The digestive tract can be thought of as a long muscular tube with digestive organs attached along the way.

- **Fibre in food**
  A diet high in fibre keeps the digestive system healthy.

**Oesophagus**

- **Barrett's oesophagus**
  Symptoms of Barrett's oesophagus are similar to regular heartburn, which means many people don't seek treatment until their condition is quite advanced.

- **Digestive tract birth defects**
  Too much amniotic fluid surrounding the baby during pregnancy (polyhydramnios) may indicate the presence of defects of the digestive tract.

- **Hiccups**
  Hiccups that last for days, weeks or even years may be symptomatic of underlying disease.

- **Indigestion**
  Food inside the stomach is only kept there by the force of gravity so to avoid heartburn, don't lie down after a big meal.

- **Throat cancer**
  Risk factors for throat cancer include smoking and heavy alcohol consumption.

**Stomach**

- **Abdominal pain in children**
  Children may feel stomach pain for a range of reasons and may need treatment.

- **Gastritis**
  Gastritis may be caused by many factors including infection, alcohol, particular medications and some allergic and immune conditions.

- **Hernias**
  Both reducible and non-reducible hernias need to be surgically repaired - this is a common operation.

- **Peritonitis**
  Peritonitis is a life-threatening emergency that needs prompt medical treatment.

- **Stomach cancer**
  The symptoms of stomach cancer are usually vague and can be common to other medical conditions.

**Small intestine**

- **Coeliac disease and gluten sensitivity**
  Coeliac disease is an immune disease caused by gluten.

- **Crohn's disease and ulcerative colitis**
  When people with inflammatory bowel disease are not experiencing a flare-up of their illness, they feel quite well and are often free of symptoms.

- **Gastroenteritis**
  It is important to establish the cause of gastro, as different types of gastroenteritis respond to different treatments.

- **Gastroenteritis - amoebiasis**
  Amoebiasis can cause diarrhoea among travellers to developing countries.
- **Gastroenteritis - campylobacteriosis**
  Campylobacteriosis is a type of gastroenteritis and is more common in children under five years of age and young adults.

- **Gastroenteritis - cryptosporidiosis**
  Outbreaks of cryptosporidiosis have been associated with child care centres, public swimming pools and contaminated water supplies.

- **Gastroenteritis - giardiasis**
  Most people infected with Giardia parasites do not develop symptoms but can still spread the infection to others.

- **Gastroenteritis in children**
  Gastroenteritis or Gastro can be dangerous for very young babies. Gastro is common in young children and spreads easily. Gastro is a bowel infection which causes diarrhoea (runny or watery poo) and...

- **Gastroenteritis - salmonellosis**
  You may be more prone to salmonellosis if you are elderly, have another medical condition (such as a weakened immune system) or are malnourished.

- **Gastroenteritis - shigellosis**
  Outbreaks of shigellosis can occur in institutional settings, particularly where children are still in nappies or adults are incontinent.

- **Irritable bowel syndrome (IBS)**
  Irritable bowel syndrome can't be cured with medications or special diets but avoiding individual triggers can help prevent it.

- **Pets – safe handling of reptiles and tropical fish**
  People in contact with tropical fish and reptiles such as turtles, lizards and snakes may be at risk of infections and illness due to germs (such as bacteria, viruses and parasites) carried on the...

- **Rotavirus**
  Rotavirus is a common cause of viral gastroenteritis for Australian babies and preschool children.

- **Traveller's diarrhoea**
  The risk of traveller's diarrhoea is higher where sanitation and hygiene standards are poor.

### Large intestine

- **Appendicitis**
  Anyone of any age can be struck by appendicitis, but it seems to be more common during childhood and adolescence.

- **Botulism**
  Botulism is considered a medical emergency. If untreated, it may cause death.

- **Bowel cancer**
  Bowel cancer is highly curable if found at an early stage.

- **Bowel motions**
  Many illnesses and events can affect the colour and texture of faeces.

- **Collagenous colitis and lymphocytic colitis**
  Collagenous colitis and lymphocytic colitis are types of inflammatory bowel disease (IBD).

- **Constipation**
  Most cases of constipation are treated by eating a diet high in fibre, drinking more fluids, and exercising daily.

- **Constipation and children**
  A healthy diet, plenty of fluids, exercise and regular toilet habits can help relieve constipation in children.

- **Diarrhoea**
  Acute diarrhoea in babies and young children can be life threatening.

- **Diverticulosis and diverticulitis**
  Diverticulosis and diverticulitis relate to the formation or infection of abnormal pouches in the bowel wall.

- **Flatulence**
Foods that tend to trigger flatulence also contain essential nutrients and shouldn't be eliminated...

- **Incontinence and continence problems**
  Many things can be done to manage, treat and sometimes cure incontinence and continence problems.

- **Incontinence - prevention tips**
  Incontinence can be prevented in most cases.

- **Irritable bowel syndrome (IBS)**
  Irritable bowel syndrome can't be cured with medications or special diets but avoiding individual triggers can help prevent it.

- **Pinworms**
  Despite the unsavoury reputation, a pinworm infection (worms) is relatively harmless and easily treated.

- **Polyps**
  Nasal polyps can sometimes interfere with breathing.

- **Short bowel syndrome**
  A person with short bowel syndrome is likely to be deficient in a range of important nutrients.

- **Slow transit constipation**
  A newborn with slow transit constipation may not pass meconium until 24 hours or more after being born.

- **Stoma after ileostomy or colostomy**
  A stoma is an artificially created hole (stoma) in the abdomen so that faeces can still leave the body.

- **Tapeworms and hydatid disease**
  It's important for your own health to control tapeworm infection in your dog.

**Rectum**

- **Anal fissure**
  Around half of cases of anal fissures heal by themselves with proper self-care and avoidance of constipation.

- **Haemorrhoids**
  A diet high in fibre can both treat and prevent haemorrhoids.

- **Rectal cancer**
  If treated in its earliest stages, rectal cancer is highly curable.

- **Rectal prolapse**
  Rectal prolapse occurs when the rectum turns itself inside out and comes out through the anus.

- **Rectocele**
  A rectocele is when the rectum protrudes into the vagina.

**Liver and gallbladder**

- **Cirrhosis of the liver**
  Cirrhosis is a type of liver damage where healthy cells are replaced by scar tissue.

- **Gallbladder - gallstones and surgery**
  Medical treatment for gallstones may not be necessary unless the gallstones cause symptoms.

- **Gilbert's syndrome**
  Gilbert's syndrome and hepatitis both cause jaundice but are not related.

- **Hepatitis**
  Hepatitis is an umbrella term for several diseases that affect the liver.

- **Hepatitis A**
  Immunisation is the best protection against hepatitis A infection and it is recommended for people in high-risk groups.
- Hepatitis B
  Hepatitis B is a viral infection that affects the liver and can lead to serious illness or death.

- Hepatitis B – immunisation
  Immunisation against hepatitis B reduces the risk of infection in babies.

- Hepatitis C
  In Australia, hepatitis C is most often spread through the sharing of unsterile drug injecting equipment. New all oral combination treatment has greatly improved health outcomes for people with.

- Hepatitis C Cure - what it means for Victorians (video)
  Hepatitis C Cure - what it means for Victorians.

- Jaundice in babies
  If your baby is full-term and healthy, mild jaundice is nothing to worry about and will resolve by itself within a week or so.

- Liver
  Some forms of liver disease are inherited, while others are caused by lifestyle factors.

- Liver cancer
  Liver cancer can be a primary cancer that starts in the liver, or a secondary cancer that starts in another part of the body and spreads to the liver.

- Liver - fatty liver disease
  The damage caused by fatty liver disease can often be halted or reversed through simple lifestyle changes.

- New drugs for the treatment of hepatitis C – Frequently Asked Questions for patients
  In Australia, hepatitis C is most often spread through the sharing of unsterile drug injecting equipment. New all oral combination treatment has greatly improved health outcomes for people with.

- Primary biliary cirrhosis
  Primary biliary cirrhosis is an autoimmune condition characterised by inflammation and scarring of the bile ducts within the liver.

Pancreas

- Diabetes
  Diabetes and the build-up of glucose (sugar) in the blood can cause serious complications if left untreated.

- Diabetes type 1
  Type 1 diabetes can affect anyone of any age, but is more common in people under 30 years.

- Diabetes type 2
  Type 2 diabetes may be prevented, but it cannot be cured.

- Pancreas
  The pancreas helps to digest food, particularly protein.

- Pancreatic cancer
  The causes of pancreatic cancer are unknown, but smokers are at greater risk.

- Pancreatitis
  Pancreatitis is inflammation of the pancreas, which can be either acute or chronic.

Related Information

- Bird flu (avian influenza)
  The symptoms of bird flu in humans are similar to those of regular influenza.

- Flu (influenza)
  Influenza (the flu) is caused by a virus. The flu is more than just a bad cold and can occasionally lead to serious complications, including death. Specific antiviral medication is available. It is.

- Pinworms
  Despite the unsavoury reputation, a pinworm infection (worms) is relatively harmless and easily treated.

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• **Botulism**

Botulism is considered a medical emergency. If untreated, it may cause death...

• **Hendra virus**

The best defence against Hendra virus is to avoid contact with an infected horse...

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Last updated: March 2014

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