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Gid disease

Synonyms: Coenurosis, Sturdy, Circling disease, Staggers, Matha ghora (In Bangla)

Gid (Coenurosis) is a disease of the central nervous system in Goats, caused by *Coenurus cerebralis*, the larval stage of *Taenia multiceps*, a tapeworm, which infests the small intestine of carnivores. In 80–90% of cases, the cyst is located in one cerebral hemisphere, whilst in 5–10% of cases, it is localized in the cerebellum; rarely it involves two sites in the brain of the affected animal.

Etiology:

- *Taenia multiceps*
- The larvae of *T. multiceps* are responsible for this disease

Epidemiology:

- The disease is worldwide distributed.
- Sheep and goats mostly affected, but can also seen in camels, deer, pigs, horses, however, rarely in cattle and humans
- Clinical coenurosis is primarily a disease of goat in Bangladesh.
- Most of the cysts are located in the cerebral hemispheres and spinal cord, while rarely invading the subcutaneous and intramuscular tissues along with other organs.
- Symptoms vary depending on the cyst's location, size and compression the brain.
- *C. cerebralis* initially causes purulent meningoencephalitis, later as the cyst grows, it leads to central nervous system symptoms resulting in death.
- Most of the characteristic clinical findings are observed 2-8 months after the intake of pathogen.
- Infected animals manifest circling, head tilt towards the side of the cyst location, in coordinated and uncontrolled movements, ataxia, failure to hold the head straight, blindness, teeth grinding, salivation, paresis, convulsions.
- Lambs are frequently affected in Europe, Buffaloes and goats are mainly affected in Indian subcontinent.

Life cycle of *Taenia multiceps*:

- The intermediate host is infected through ingestion of *T. multiceps* eggs.
- Each egg contains an onchosphere which hatches and is activated in the small intestine.
- The onchosphere penetrates the mucosa and is carried via the blood stream to the brain or spinal cord. In goats the cysts can form in subcutaneous and muscular sites as well as the brain and spinal cord.
- The onchosphere develops into a metacestode larval stage called *Coenurosis cerebralis.*
- The *Coenurosis cerebralis* matures into a thin-walled fluid-filled cyst about 5cm in diameter.
- The life cycle is complete when the canine eats the raw infected brain, spinal cord or offal contaminated by the fluid from the ruptured cyst.
- The scolex (head of the tapeworm) embeds itself into the wall of the small intestine where it begins to grow, and shed new eggs.

Clinical Signs:

- Coenurosis can occur in both an acute and a chronic disease form.
- The clinical symptoms reported in animals are in coordination, impaired vision, ataxia, uncontrolled movements, blindness and paralysis in the legs, occasional circling, fatigue, and mortality.
- The affected animals do not eat and they gradually become weak and die after some days.
- The neurological clinical sign that develops in 6 to 8 months time.
- If the animal has the lesion in front of the brain, it lower the head and run forward and circling left or right direction depending on the lesion either on the left or right side of the brain.
- Animal with mature coenurus show an acute onset of irritation phenomena including a wild depression, salivation , frenzied running and convulsions.
- The other sign of the disease are dullness , head pressing ataxia , incomplete mastication.
- Several studies showed that while being more prevalent in the left hemisphere, 96% of the CNS cysts are located in the left or right hemisphere and 4% are located in the cerebellum.

Diagnosis: Based on

- Clinical history : Circling movement, anorexia, salivation
- Clinical findings: Circling, Head shaking , Skull softening, Skin over the bone become shrinkage
- Cyst identification: Cysts are found in the central nervous system. Just 1cm behind the respective horn. It composed of semi solid or hard mass.

Differential diagnosis:

- Listeriosis
- Brain abscess
- Brain Tumour
- Encephalitis in early stages
- Meningitis

Treatment:

- No treatment exists for the cystic stages of tapeworms
- The animal may be treated by removing the cysts through surgical operation.

Preventive measures:

- The best control and prevention of coenurosis is to prevent dogs from having access to sheep and cattle carcasses and not to feed them uncooked meat. If this is not possible, the control and prevention of coenurosis should be based on routine anthelmintic dosing of dogs, preferably every three months.
- Public footpaths running through the sheep fields used by people walking their dogs can be a particular problem.
- Farmers could display a sign explaining the disease risks and encouraging local people walking their dogs on these fields to have their dogs wormed.
- Anthelmintic treatment of dogs (definitive host) at regular interval.
- Dogs should not be fed on raw offal of slaughtered animals.
- Farmer was advised to bury the faeces of dogs in soil that it should not contaminate the pasture.