

Aspergillosis in Poultry

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Aspergillosis

- (Brooder pneumonia; pneumomycosis)
- It is usually an infection primarily associated with the respiratory system of poultry. It may some times involves the other visceral organs.
- Young birds are most liable to an acute infection which kill them 3-6 days.

Etiology


- Most common is. *Aspergillus fumigatus*. *Aspergillus favus*
Others are *A. glaucus* and *A.niger*
- Mouldy litter, grains and feed and unclean improperly sanitized hatchery equipment are associated with outbreaks of Aspergillosis.
- High humidity and relatively warm temperatures are highly conducive for the growth of fungus.
- Young chicks are most susceptible to infection
- Very cold temperatures under brooding, lack of feed and water, high ammonia levels and dust in poultry sheds predisposes to Aspergillosis

Transmission

- Inhalation of large number of spores of the mould is primary route of exposure.
- May be also egg born when the eggs are laid on unhygienic litter material. The fungus can enter the shell, grow in the shell membranes and cause high embryonic mortality, lowered hatchability and chick mortality as early as one day old.
- I/P 3-6 days.

Pathogenesis

- By inhalation spores enter into the lungs cause focal pneumonia, nodular formation which resembles tubercle.
- Miliary nodules show bronchi on cut surface.
- The peribroncheal & pulmonary shows sero fibrinous exudates.
- In the early lesion the colonies of the organism are surrounded by heterophils and macrophages.

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- The fungus may invade and enters the egg shell .
 - Since Aspergillosis is mostly found in the chicks artificially hatched and raised in brooder this condition is known as Brooder Pneumonia.

Symptoms

- The affected chicks may stop eating and show symptoms of gasping or labored breathing. They breathe with an open mouth due to obstruction of the airway.
- Onset is observed from 1-3 weeks of age. Mortality varies from less than 10% to as high as 50%.
- Gasping, rapid respiration rate, lethargy and increased thirst with subsequent stunted growth are the typical signs.

Gross lesion

- Numerous 1mm diameter yellow to green nodules are observed in the lungs and air sacs and occasionally in other organs including the brain and eye.
- Size of the nodules may also vary from 10-15 in diameter.
- Lesion in the brain tissue appears as white to yellow circumscribed areas.

Diagnosis

- Characteristic lesions are highly suggestive of Aspergillosis.
- Confirmation of the diagnosis requires culture using an appropriate fungal medium (Sabouraud's dextrose agar). Histological examination of lungs will reveal characteristic hyphae.



- Gross lesions of the lungs



Multiple fungal granulomata typical of
Aspergillosis