

Swollen Head Syndrome-Masked Foe for Poultry

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Avian metapneumovirus (aMPV), previously referred to as avian pneumovirus (APV) and avian rhinotracheitis (ART) virus, causes an acute, highly contagious upper respiratory tract infection of turkeys and chickens, clinically termed as Swollen Head Syndrome (SHS).

It belongs to the Paramyxoviridae Family, which emerged in South Africa in 1970's with first case of chicken reported in 1984 and is divided in to four subtypes A, B, C and D. Subtype A cause disease in Turkeys while Subtype B cause infection in chickens.

Subtypes C and D are not important for poultry birds.

Virulence of this RNA based double stranded virus depends on two genetic factors, Major independent virulent factor is the "G-protein" and a dependent virulent factor the "F protein"

stan due the fact that it does not exhibit noxious and malign sign symptoms like other prominent viral diseases such as ND or IB. However, SHS poses a grave impact on poultry birds, worldwide as this viral infection is responsible and considered as a "Gate Opener" for secondary respiratory pathogens both viral and bacterial keeping your birds prone to immunosuppression as well as in recurrent state of disease like Mycoplasmosis, Colibacillosis, IB, ND and H9 even when the flocks are well vaccinated.

It naturally infects breeding broilers, commercial egg layers and broilers. Clinically, it's been described as a multi-factorial disease where the initial lesion mainly caused by avian Metapneumo virus (aMPV), while the clinical signs are a consequence of bacterial complications, and the severity of the disease depends on environmental factors. It mainly infects broiler birds at young age exhibiting primary signs of

- Characteristic oblong almond-like shape of eyes
- Reddened conjunctivas
- Profuse tear secretion

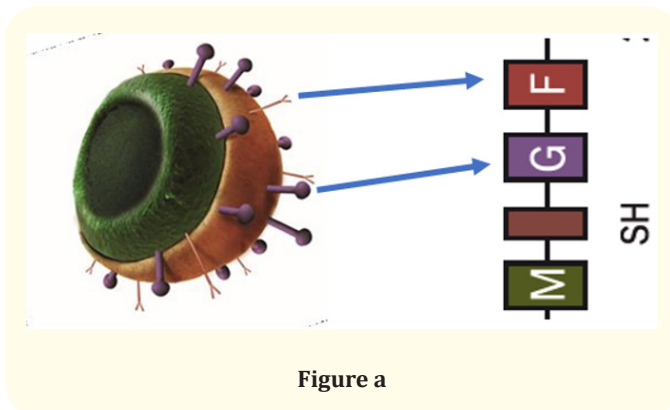


Figure a

The swollen head syndrome (SHS) is emerging poultry disease in the Asian-Pacific region. It is not wrong to term it as "Silent Killer" for Poultry birds as this disease remains unchecked and least concerned, even to this date by the production personals in Paki-

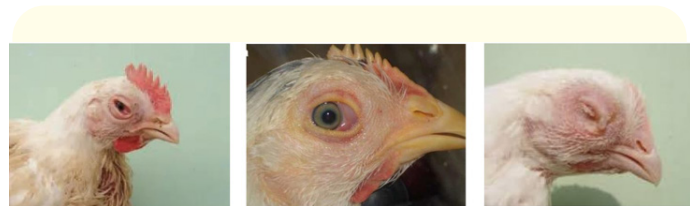


Figure b

These signs normally remain undetected by the naked eye in commercial flocks or confused with ammonia gas complications, and thus, virus keeps on replicating leading to secondary pathogenic involvement ultimately exhibiting prominent respiratory signs

- Sneezing and Rales
- Coughing and Snicking
- Nasal Discharge
- Sticky mucoid Discharge from eyes
- Subcutaneous oedemas in the head region, involving unilaterally or bilaterally the periorbital sinuses and the mandibular space.

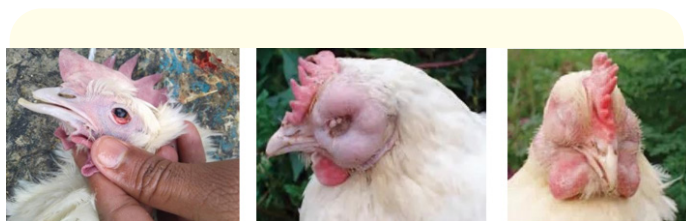


Figure c

Severity of these respiratory signs generally depends upon the type of secondary pathogens involved mainly observed in various clinical studies on AMPV infections in poultry. Thick mucopurulent exudate in nasal turbinate and upper tracheal region is recorded with co infection of mycoplasma gallisepticum, similarly another study conducted in broilers indicated severe tracheitis, mucoid exudate with swollen head and kidneys, tested positive for IB along with AMPV.

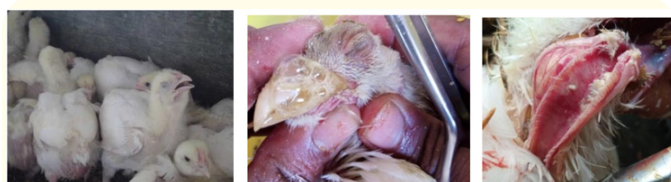


Figure d

In context to commercial layers, AMPV was predominately seen infecting brown leghorns more than white leghorn breeds globally, however in past few years it has been observed in white leghorn breeds as well in both floor and cage type housing birds. The pattern of SHS infection in layers is a bit different from commercial broilers and broiler breeders. Studies have shown that AMPV, does

not show vigorous signs in Layer birds, and mostly remain in a subclinical state making the birds immunocompromised towards other bacterial and viral pathogens and becomes active infection as soon as the bird enters the stress of production i.e., it infects the birds at adult stage as the production starts to attain peak. Adult layer birds show.

Similar respiratory signs as CRD and IB with loss of egg production upto 3-5% (only SHS) or 25-30% (SHS complex) and loss of pigmentation in eggshell with poor internal quality. PM lesions on reproductive tract mostly confuse with E-coli infection, folded shell membrane in oviduct is a distinctive lesion of SHS in layers.

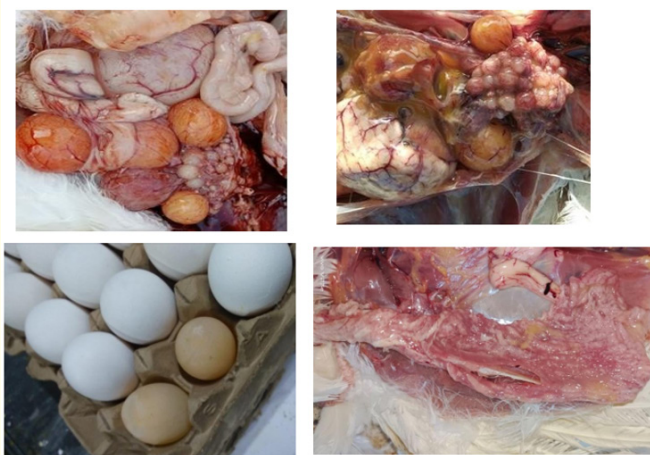


Figure e

Economically, Swollen Head Syndrome is the most devastating of all other respiratory diseases cause of two major reasons

- Subclinical presence of AMPV in birds
- Acting as gate opener for other respiratory pathogens

Morbidity is 100% recorded in AMPV, as well due to recurrent secondary infections continuous treatment with antibiotics and loss in production pose a major threat on the producer's economic state.

Pakistan Poultry has attained the status of industry due to its remarkable growth and development in terms of FCR, Weight gain, Egg Production, Hatchability, Housing, Feed manufacturing and disease management, being praised globally. Unfortunately, even after all this advancement we still face consequences in the face of disease outbreaks leading to economic losses particularly respi-

ratory problems, even after following strict vaccination schedules. One of the main causes for reoccurring respiratory problems in commercial flocks is by overlooking undermining afflictions such as AMPV presence in birds, which silently.

make them prone to other lethal and alarming respiratory diseases. Strict vaccination protocol against SHS in Commercial Broilers, Layers and Breeders as it is the only possible way to control it. Combination of both Live and Inactivated vaccines are recommended to completely protect commercial layers and breeders while use of single shot of Live vaccine at 1st week of age confers strong protection in Broilers.

AMPV, needs to be addressed and managed properly in our commercial poultry instead of ignoring its presence and keep on suffering from recurrent respiratory diseases. Vaccination is the only valid prospect to control this disease and render healthy flocks.