



WING TIP OEDEMA

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Wing tip oedema and dry gangrene syndrome is an inflammatory condition that affects the end of the wing (metacarpus) of raptors. It has been noticed with increased frequency in the last 20 years. Lanner and Lugger falcons, Peregrines and Harris Hawks are more commonly involved but any bird (typically those from warmer climates) can be affected.

The condition occurs during the winter, from October to April, and often appears to be triggered by a period of cold or freezing weather. Disease generally affects first year birds. Such birds may well not be fully trained and hence be at a relatively low weight, and potentially with a less well-developed wing blood supply. In some raptors first year plumage is softer, with reduced insulation properties than adult plumage and so these younger birds may be more susceptible to cold conditions.

SYMPTOMS & TREATMENT

Affected birds may first be identified with wings drooped or held slightly away from the body. The wing tips, where the primary feathers insert, becomes swollen and cold often with an associated loss in flight performance. The swelling is referred to as 'pitting oedema', as if a finger is pressed into the swollen area, the depression or 'pit' left remains there for several minutes. The further up the wing the swelling extends, the more advanced the condition and the less successful treatment will be. Immediate first aid consists of gently warming the bird, but avoiding direct heat on the area, then maintaining it at normal room temperature (15-20°C). It is also beneficial to stimulate wing use by having the bird on the fist and making rolling or vertical drop movements which require the bird to move its wings to balance. Birds with minor signs, still capable of flight, should be flown, as regular gentle exercise is useful in improving circulation to, and drainage from, the affected areas.

Typically the initially swelling remains for a week, and gradually reduces. In most cases the tip of the wing changes from a white colour to pale brown,

dark brown then black. This black section develops as the tip of the wing has lost its blood supply and develops dry gangrene. The tissue on the wing tip dies off and will drop or break off at about 5-6 weeks after initial signs. Some birds are presented by falconers where disease has progressed and the end of the wing tip has dropped off without the initial signs noticed. In a survey published in the 1980s by Neil Forbes, it was shown that on average an affected wing lost the tip and three of the primary feathers. It should be stressed that the feathers do not just drop out, but actually the entire tip of the wing, including those feathers, drops off. This cannot regrow and the bird will not be capable of normal flight. In a first year bird this is a catastrophe.

The likely outcome of the case is dictated by how quickly the falconer recognises the problem, how quickly the bird gets to an experienced avian vet and how far up the wing the swelling has progressed.

Prompt administration of medical therapy has led to a recovery rate of up to 90%. Treatment involves medication to dilate the blood vessels to improve blood flow to affected areas and allow healing before dry gangrene is established. Vasodilators given by mouth are combined with massage of the affected region. Using Preparation H, which comprises yeast and shark oil, on the skin has been recommended. Antibiotics are required to prevent a concurrent bacterial enteritis, which on occasions accompanies this condition. If large blisters develop they should be surgically drained in a sterile manner three times daily, until they fail to refill (this usually takes 7 - 10 days). Affected birds should be kept at room temperature for at least 3 weeks.

PREVENTION

Wing tip oedema is caused by ground frost rather than wind chill, so even a bird tethered in a garage or sheltered area can be affected. Affected birds are typically at flying weight and have all been tethered within 18 inches of the ground during nights and cold days. The only exceptions are birds which are free lofted, but have had wet plumage when the temperature dropped at night. This can be due to flying in wet conditions or bathing earlier in the day. Birds should be prevented from bathing after noon in the months of October – April if they are kept outside at night.

Birds being flown in these months should be free lofted, or provided with supplementary heating. This heating can involve a guarded heat lamp, or low wattage oil filled bar heater, which is triggered to come on by a 'frost stat'. The 'frost stat', should be set so that if the temperature drops below 3°C, the heater automatically switches on.

All birds should be checked daily for swelling or discolouration of the wing tips – as early disease can be very subtle close examination is needed.

This is a totally preventable condition, which leads to destruction of the bird's flying career so please make sure your birds are protected and as many falconers as possible are made aware of the problem.



Typical posture with wings held out and some swelling evident on the wing tip



Swollen wing tip in an affected kestrel



Swelling and blister formation in hybrid falcon



Tip of the wing of Harris' hawk, shortly to fall off