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Subcutaneous Emphysema in Backyard Chicken - Case Report

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Subcutaneous emphysema is an uncommon but clinically important condition in poultry characterized by abnormal accumulation of air beneath the skin due to rupture of air sacs or trauma to the respiratory system. A backyard chicken presented with marked balloon-like swelling involving the ventral cervical and thoracoabdominal regions. Clinical examination revealed extensive subcutaneous air accumulation causing distension of the skin without evidence of fluid accumulation. The bird also exhibited respiratory distress, depression and poor feathering over the swollen region. Based on clinical findings, the condition was diagnosed as subcutaneous emphysema, likely secondary to traumatic rupture of an air sac. Needle decompression and supportive therapy were advised. This report highlights the clinical presentation, pathogenesis, differential diagnosis and therapeutic management of subcutaneous emphysema in poultry under field conditions.

Keywords: Subcutaneous emphysema, chicken, air sac rupture, poultry, respiratory disease, backyard poultry

Introduction

Subcutaneous emphysema in poultry refers to abnormal accumulation of air within subcutaneous tissues following rupture of air sacs or respiratory passages. The condition is relatively uncommon in chickens but may occur secondary to: trauma, air sac rupture, respiratory infections, excessive struggling or iatrogenic injury. Birds possess an extensive air sac system that communicates with the respiratory tract. Damage to these delicate structures allows air to escape into subcutaneous tissues, resulting in characteristic balloon-like swelling beneath the skin (Doneley, 2016). Although the condition is usually non-infectious, severe emphysema may interfere with respiration, mobility, feeding and overall welfare.

Case Description

A young backyard chicken was presented with severe swelling involving the ventral cervical and thoracoabdominal regions. Clinical examination revealed:

- Diffuse soft swelling
- Marked distension of subcutaneous tissues
- Stretching of the skin
- Respiratory discomfort
- Depression

The swelling was nonpainful and palpation revealed a characteristic crepitating sensation suggestive of air accumulation beneath the skin. The following clinical image demonstrates marked ventral subcutaneous emphysema in the affected bird (Fig. 1). Based on clinical findings, a tentative diagnosis of subcutaneous emphysema was made.



Fig. 1: Ventral subcutaneous emphysema

Pathogenesis

In birds, the respiratory system includes multiple thin-walled air sacs connected to the lungs. Rupture of these air sacs allows air to leak into surrounding tissues and accumulate subcutaneously. Predisposing causes include: Traumatic injury, excessive wing flapping, predator attack, rough handling, respiratory infection, air sacculitis and blunt thoracic trauma. Accumulated air dissects through loose connective tissues causing progressive swelling.

Differential Diagnosis

Conditions considered during differential diagnosis include: Ascites, edema, cellulitis, hematoma, abscess and cystic swelling. The presence of crepitation, air-filled swelling, absence of fluid and diffuse skin distension helps differentiate emphysema from fluid-filled conditions.

Treatment and Management

Treatment primarily involves decompression of trapped air, restriction of movement, supportive care and correction of underlying respiratory lesions.

Recommended therapeutic measures include:

- Sterile needle puncture
- Small skin incision for air release,
- Broad-spectrum antibiotics to prevent secondary infection,
- Anti-inflammatory therapy,
- Minimizing stress and handling.

In recurrent cases, underlying air sac disease should be investigated.

Discussion

Subcutaneous emphysema is uncommon in field poultry practice but should be considered when birds present with diffuse soft swelling accompanied by crepitation. Early recognition is important because severe air accumulation may impair respiration and predispose birds to secondary complications. Most uncomplicated cases respond favourably to decompression and supportive therapy. However, persistent emphysema may indicate ongoing air sac rupture or severe respiratory pathology.

Conclusion

This short communication describes a clinical case of subcutaneous emphysema in backyard chicken characterized by extensive ventral swelling due to subcutaneous air accumulation. The condition likely resulted from traumatic air sac rupture. Early diagnosis and decompression remain essential for successful management. Increased awareness among field

veterinarians and poultry farmers is necessary for prompt recognition and intervention in such uncommon respiratory conditions.

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