





Treatment of the most frequent cases of grass awn migration in dogs with ultrasound



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Abstract Migrating grass awns are a common problem in dogs with a vegetative foreign body during the summer, requiring surgical intervention. This report presents treatment cases of migrating grass awns in four client-owned dogs (between the webs of the toes, in the cheek, abdomen area, and in the penis). Under ultrasonographic visualization, vegetative foreign bodies were localized, confirmed upon surgery, and removed with a positive outcome.

Keywords: dogs, foreign body grass awn, ultrasonography

1. Introduction

Grass awns are a common cause of foreign body disease in animals (Cherbinsky et al 2010). They are common foreign bodies in dogs and are commonly localized in the ear canal, subcutaneous tissue, interdigital space, eyelid, conjunctiva, and nasal or oral cavity. These foreign bodies pose a threat due to their peculiar structure, which facilitates their easy access to the affected area and their transit through the body (Del Signore et al 2017). Clinical signs are often non-specific, and imaging modalities such as ultrasonography are useful techniques for localization. Here, four cases of migrating grass awns in different parts of the body in client-owned dogs are discussed. In each case, localization was confirmed, followed by the dissection of tissues and extraction of grass awns under ultrasound control. The grass awns removal under ultrasound visualization resulted in complete clinical resolution.

2. Case history and observation

In a short period in July 2022, the private veterinary clinic "Kind Doctor" in Dnipro received several purebred dogs belonging to clients with areas of prominent local inflammation of various localization. Appeals of dog owners with a complaint about migrating grass awns from May to the end of summer are often observed. Among all cases of migrating grass awns, the most common are lesions of the extremities between the webs of the toes (in approximately 60% of cases), penetration into the auricle (10%), conjunctiva (5%) and oral cavity (7%), the external genitalia (3%); the remaining 10-15% of cases are localization in other areas or mixed cases of finding foreign bodies simultaneously in different parts of the dog's body.

A black female Scottish Terrier had a lesion localized in the abdominal area. In a male Bichon Frise, webs of the toes of the hind limb between was affected. A male French Bulldog had an abscess in the left cheek area, while a Shih Tzu had inflammation in the penile area (Figure 1). With suspicion of migrating grass awns, these dogs were subjected to ultrasound with confirmation of the diagnosis for the presence of a foreign body and subsequent operative outcome in each case.

3. Treatment and discussion

A 12 MHz linear transducer (MyLab 50 XVision; Esaote, Italy) was used to visualize the presence of a foreign body in all of the dogs presented to the veterinary clinic with suspected migratory grass awns described in this clinical report. Ultrasonographic examination showed the presence of a linear, spindle-shaped, hyperechoic structure of various sizes localized in soft tissues. This structure, suggestive of a migrating grass awn, was surrounded by a hypoechoic/anechoic zone, consistent with a focal inflammatory response (Figure 2).

The dogs were premedicated with atropine (0.02 mg/kg, intravenously) (Atropine Sulfate; Darnitsa, Ukraine) and diphenhydramine (2.0 mg/kg, intramuscularly) (Dymedrol-Darnitsa; Darnitsa, Ukraine), induced with propofol (RELAX; BioTestLab, Ukraine) intravenous in a dose of 3.0 mg/kg to effect and maintained with propofol constant rate infusion. The



dogs received postoperative dexmedetomidine (10 µg/kg, intramuscularly) (Dexdomitor®; Zoetis, USA); thus, the effect of a longer postoperative analgesia after the animals came out of anesthesia was achieved.



Figure 1 Localization of a vegetative foreign body in the dogs described in this clinical report: (A) A black Scottish Terrier female had a lesion in the abdominal area. (B) In a male Bichon Frise, the hind limb between the webs of the toes was affected. (C) A male French Bulldog had an abscess lesion in the left cheek area. (D) A Shih Tzu had a lesion localized in the penis area.

After surgical preparation, the narrow-pointed Halsted Mosquito forceps were inserted into the previously identified fistulous tract between the webs of the toes were affected in one of the clinical cases; or an incision of inflamed tissues was performed at the location of the foreign body under ultrasonographic control in other cases. Using forceps, the foreign body was grasped and successfully removed. A knotty removable suture was placed on the wound and then treated with an antiseptic containing chloramphenicol and gentian violet as an active ingredient (Chemi spray; INVESA, Spain). Antibiotic therapy with ceftriaxone (20 mg/kg IM q24h [Darnitsa]) was prescribed for one week. Two weeks later, the dogs were clinically normal.

Migrating grass awns are a frequent cause of foreign body disease in pets during the spring and summer seasons. The most common localizations of vegetative foreign bodies are the external auditory canal, nasal cavity, interdigital spaces, and conjunctiva (Hicks et al 2016). Rarely can grass awns migrate through the genitourinary tract and localize in the urethra, urinary

bladder, vagina, and even prostate gland (Marchesi et al 2020). In the case of penetration of vegetative foreign bodies, the clinical signs of the lesion may be non-specific. The grass awn is not always possible to detect surgically, which requires more attention during surgery (Gnudi et al 2005). Therefore, ultrasonography is a safe, non-invasive, and readily available imaging technique that can be useful in identifying and guiding the removal of grass awns that have migrated into body tissues or cavities (Caivano et al 2016).

In all cases, the localization of a vegetative foreign body in dogs was determined by ultrasonography. Ultrasonographically, grass awns appeared as a double/triple spindle-shaped echogenic interface within soft tissue. Accurate localization of the vegetative foreign body and timely surgical intervention had a favorable outcome in all of the most common cases of migratory grass awns in dogs described in this clinical report.

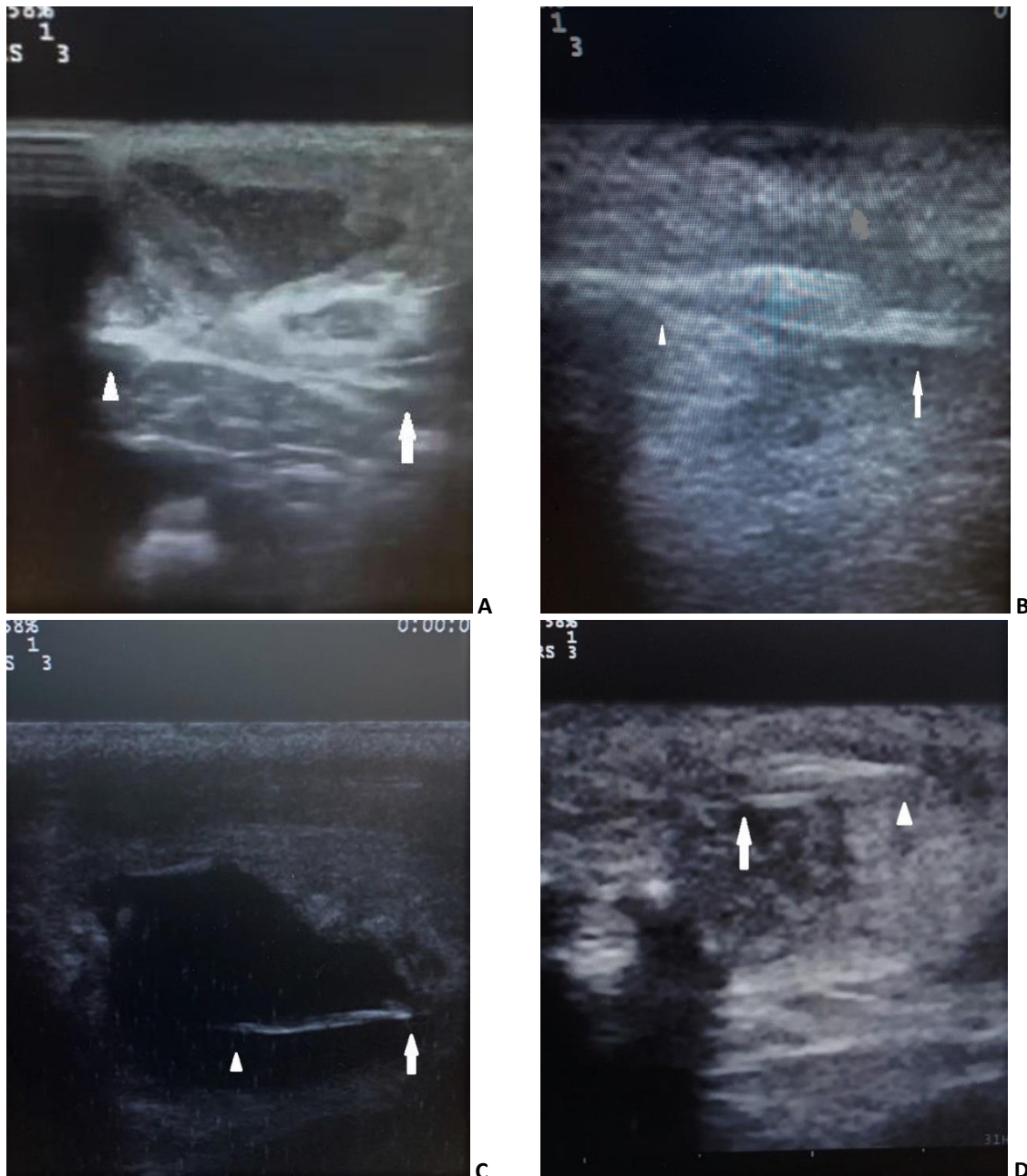


Figure 2 Transverse ultrasonographic image of a vegetative foreign body in the dogs a spindle-shaped hyperechoic foreign body consistent with a grass awn; the tip (arrowhead) and barbs (arrow) of the awn are evident. (A) In a black Scottish Terrier female. (B) In a male Bichon Frize. (C) In a male French Bulldog. (D) In a male Shih Tzu.

4. Conclusion

Migrating vegetal foreign bodies in pets can be a diagnostic challenge, and imaging tools, such as the ultrasonographic examination, can be useful for the visualization and subsequent removal of migrating grass awns.

Conflict of Interest

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