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**Ana Catarina V Valle**

a) IDIS/Lamasson, Ribeirao

Preto, Brazil

b) UCB - Catholic University of  
Brasilia, Brasilia, Brazil**Aloisio Cunha de Carvalho**

IDIS/Lamasson, Ribeirao

Preto, Brazil

## Injectable homeopathy treat otohematoma in a dog: Case report

**Ana Catarina V Valle and Aloisio Cunha de Carvalho**

### Abstract

Aural hematoma is considered a relatively common disease in the small animal clinic, with a higher prevalence in dogs than in cats. This alteration is characterized by blood accumulation in the animals' external ear, which is usually traumatic in origin. In general, the treatment is performed surgically, and its recurrence is frequent. Integrative Therapies have been gaining ground within Veterinary Medicine and in clinical practice for small animals. Consequently, the treatments are becoming increasingly frequent for various diseases. The objective of this study was to report a case of aural hematoma in a 10-year-old male mixed-breed dog, treated with injectable ultra-diluted (*Rhus tox* and *Hamamelis virginiana*) and oral (*Bellis perennis*) medicines, showing favorable response in 11 days of treatment, and complete resolution of the disease in 30 days.

**Keywords:** Ultra-diluted medicines, aural hematoma, dog

### Introduction

An aural hematoma is characterized by the blood accumulation in the subcutaneous tissue of the external ear when there is a break in the integrity between the ear cartilage and the skin, mostly due to traumatic injury (Valle *et al.*, 2020; Hewitt & Bajiwa, 2020; Valle *et al.*, 2015) [20, 15]. This disease is frequently diagnosed at the Small Animal Medical Clinic (Valle *et al.*, 2020) [20], commonly affects dogs (Evangelista *et al.*, 2012) [19] and, rarely, cats (Silva *et al.*, 2018) [14]. It is considered the eighth-most performed procedure in dogs among the routine surgeries in the clinical practice (Graça, 2010) [3]. Predisposing factors, such as dogs with pendulous ears and adult and elderly patients, appear to be more susceptible to the problem (Rosychuk and Merchant, 1994) [12]. Aural hematoma can also be called otohematoma or Auricular Hematoma (Valle *et al.*, 2015) [15]. The etiology of this disease may be correlated with disorders involving the hearing system, which results in abrupt movements of the head due to pain, itching, or acute inflammation in the ears, such as otitis in its various forms (Rodrigues *et al.*, 2016) [11]. The aural hematoma physiopathology comprises a massive swelling filled with floating blood, whose position and size may vary, being located in the concave surface of the external ear (Evangelista *et al.*, 2012) [19]. It is presented in two phases. The acute phase consists of the initial formation and is characterized by the rupture of branches of the caudal auricular artery, located in the auricular cartilage. Consequently, fluid accumulates in the external ear, and the increased ear volume causes discomfort. Pain may be present or absent (Marignac, 2005) [8]. In the chronic phase, maturation occurs, fibrin is deposited on the hematoma walls, and a central bloody seroma is produced. Later, the seroma transforms into granulation tissue, and the ear becomes thickened (Matoussek, 2004; Krahwinkel, 2003) [5, 6]. In general, aural hematomas are self-limiting because, in the disease's natural evolution, fluid reabsorption and healing occur. Therefore, it is characterized by being a dynamic method. However, the disease resolution is slow, and fibrosis may occur in the healing process, which increases the thickness and, consequently, the deformation of the ear (Krahwinkel, 2003; Marignac, 2005) [6, 8]. Aural hematomas are diagnosed by physical examination. The auricular region is swollen; palpation reveals a fluid and floating content (acute phase), which can be firm and thick due to fibrosis (chronic phase). The patient's history must be considered to identify and eliminate predisposing factors to the problem, preventing its recurrence (Valle *et al.*, 2015) [15]. There are several types of treatment to obtain aural hematoma's clinical improvement (Valle *et al.*, 2020) [20], with satisfactory variable results (Santos, 2008) [14]. Surgical procedures are those with the highest incidence. However, the results are not always satisfactory (Rosychuk and Merchant, 1994; Schosler *et al.*, 2007) [12, 13].

**Corresponding Author:****Ana Catarina V Valle**a) IDIS/Lamasson, Ribeirao  
Preto, Brazilb) UCB - Catholic University of  
Brasilia, Brasilia, Brazil

According to several authors, regardless of the therapy used, the treatment of aural hematomas should be performed as soon as possible after diagnosis to prevent the fibrosis of the injured tissue (MacPhail, 2016; Krahwinkel, 2003) [7, 6]. Clinical therapy may be indicated in most cases, and homeopathic medicines become an excellent alternative, with no need for drainage of the hematoma or surgical procedures (Valle *et al.*, 2020; Valle *et al.*, 2015; Jayagopala, 1992) [20, 15, 10].

Homeopathy, which was developed more than 200 years ago, has been expanded and reformulated every year. At each day, it is becoming the treatment of choice among clinicians that support the Complementary Veterinary Medicine (Valle *et al.*, 2020) [20]. Homeopathy is based on the law of similars, in which highly diluted medicines can treat diseases or clinical signs, similar to those that they can produce in a healthy organism at its ponderal dose (Demarque, 2002; Hahnemann apud Rebollo, 2008) [18]. In its turn, injectable, homeopathic medicines are already used in Brazil and are authorized by the National Health Surveillance Agency (ANVISA 2013) [2].

In this context, homeopathic medicines have been therapeutically used and demonstrate the ability to significantly heal aural hematoma. In addition, there is no need for invasive and high costly procedures (Valle *et al.*, 2015) [15]. This study aims to report the occurrence of a unilateral case of aural hematoma in a 10-year-old male mixed-breed dog. The patient was seen in July 2020, at Natural Pet Veterinary Clinic, in Brasilia, DF, Brazil.

### Material and Methods

A 10-year-old male mixed breed dog weighing 19 Kg was attended with the main complaint of increased volume in the left external ear and mild restlessness in the ears. The dog had no previous history of otitis.

According to the tutor, the clinical signs appeared approximately 20 days before, and the patient showed no alteration in its usual behavior after the left ear volume had increased. The dog had normal colored mucosa, TPC 2", cardiac auscultation within normal limits according to the age and species, good overall condition despite its overweight, and no significant alterations or other complaints by the tutor. After anamnesis and physical examination, an aural hematoma was diagnosed on the outer face of the left ear (Figure I - 2 and 3) and, to a lesser extent, on the inner face of that ear (Figure I - 3). The etiology remained unknown. However, the tutor of the animal described that, sporadically, the animal was seen scratching only the left ear. The following complementary exams were requested: swab from the liquid collection of the left ear, complete blood count, biochemical dosages of alanine aminotransferase (ALT), alkaline phosphatase (AP), urea, and creatinine.

A subcutaneous injectable, homeopathic treatment was prescribed (INJECTCENTER®, Ribeirão Preto-SP, Brazil), and consisted of an application of 1 ampoule (1mL) of *H. virginiana* D12 (1x10-12) + 1 ampoule of *Rhus tox* (1x10-60) on the day the patient was attended. From the second day, the applications were carried out by the tutor in her house, as follows: Day 1. *Rhus tox*; Day 2. *H. virginiana*; and so on during 15 days. Four drops of *Bellis perennis* 30CH (1x10-60), SID, were also indicated as an oral

treatment for 30 days.



**Fig 1:** Initial clinical appearance of the left external ear represented by 1 and 2; initial inner face appearance.

### Results

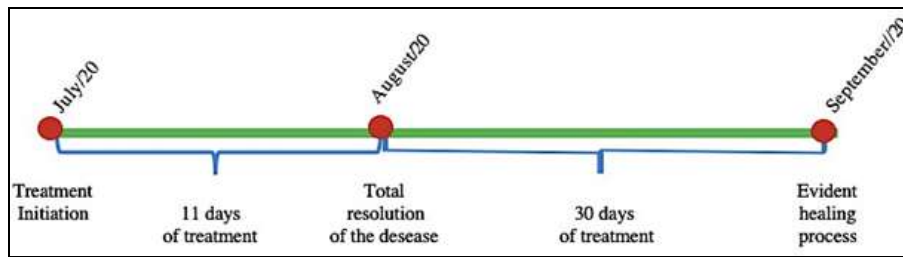
After 15 days, the patient was seen at the clinic for a reevaluation. It was observed that the aural hematoma had considerably decreased in size. The result of cytology for the left ear was negative for fungi and bacteria. Follows the result of the blood count: red blood cells 7,000,000 / $\mu$ L; Hemoglobin 17g/dL; Hematocrit 47.3%; MCV (mean corpuscular volume) 67.57 fL; Total leukocytes 10,900/ $\mu$ L; Platelets 484,000 / $\mu$ L; Total Plasma Protein (TPP) 7.6g/dL; Urea 28mg/dL; Creatinine 1.16 g/dL; ALT 107 U/L; AP 310 U/L. The patient returned to the clinic within 11 days (Figure II), and a complete resolution of the disease was observed (Figures II - 1 and 3). However, a scar/fibrosis on the inner face of the left ear was observed (Figure II - 2). The patient returned for clinical exams in 30 days, and the ears remained as previously reported. The patient was followed-up for 40 additional days, in which it was biweekly evaluated. No disease recurrence was observed during the entire period.



**Fig 2:** 1. Significant decrease in volume in the external ear; 2. Reduction in volume of the previous lesion and beginning of fibrosis formation at the tip of the ear; 3. The final result of the healing process.



**Fig 3:** Total disease resolution, comprising the healing process both in the inner face (2 and 3) and lateral (1).



Timeline-for better understanding the treatment

## Discussion

The aural hematoma is relatively common in dogs in the small animal clinic. It occurs in the median proportion of 30 animals to develop one aural hematoma case. The disease is characterized by the increased volume in the external ear due to a fluctuating, tense, and sometimes painful swelling, which varies in size and position. It is also of traumatic origin (Santos, 2008) [14].

The surgical procedure is the therapy of choice for aural hematoma. However, in this type of procedure, the patient must be anesthetized. It also involves an incision, which comprises cutting and suturing it after draining the bloody content. Moreover, the post-surgical recovery, the possibilities of recurrences, besides the procedure's high cost, must be considered. Within this reality, complementary treatments stand out as a great alternative. Among them, homeopathy is an important therapeutic tool. It is safe, considering the side effects of conventional medication, does not depress the body's biological and immunological responses, maintains homeostasis, and, finally, develops a continuous and significant improvement in the disease control (Valle *et al.*, 2015) [15].

The treatment of choice in the present study was based on the law of the similars and used highly diluted and dynamized medicines to treat clinical signs or diseases which would be caused to a healthy person, by these same substances, in ponderal doses (Demarque, 2002; Hahnemann apud Rebollo, 2008) [18]. This therapy stimulates the organism's natural healing response, the so-called *Vix Medicatrix Curantus Naturae*, announced by Hippocrates in 400 BC, which assists the vital energy for the complete reestablishment of the organism (Valle *et al.*, 2020) [20].

*H. virginiana*, *B. perenes*, and *Rhus tox* are equally indicated in the treatments of phlebitis, varicose ulcers, and traumatic inflammations, respectively, besides the induced anti-inflammatory action, among others (Cairo, 1991; Vannier and Poirier, 1987) [17].

*H. virginiana* is a medicine of plant origin that has hemostatic, venotonic, and vasoprotective properties. It acts in hemorrhages of venous origin, especially the post-traumatic ones. It is indicated on the skin for the treatment of phlebitis, varicose ulcers, and traumatic inflammations (Demarque *et al.*, 2009; Cairo, 1991) [1, 17]. Studies performed in animals showed that a homeopathic complex containing low dilutions/dynamizations of *Hamamelis virginiana* and other compounds has a slight but significant effect on the experimental inflammation of rat's paws caused by the injection of autologous blood (Lussignoli *et al.*, 1999) [26].

Furthermore, *B. perennis* is also a medicine of plant origin that acts in sites where there is an increase in volume and blood accumulation due to mechanical trauma, with left

lateralities (Horvilleur, 2003) [4]. Oberbaum. *et al.* (2011) describe the effect of the homeopathic medicines *Arnica montana* and *Bellis perennis* on postpartum bleeding through a randomized, double-blind, and placebo-controlled study. The objective of this study was to evaluate the effect of these medicines on postpartum blood loss. Forty parturients were randomized to one of the three groups: *Arnica montana* C6 and *Bellis perennis* C6 (n = 14), *Arnica montana* C30 and *Bellis perennis* C30 (n = 14), or double placebo (n = 12). After 48 h, *Arnica*/placebo was discontinued, and patients continued with *Bellis*/placebo until the lochia ceased. At 72 h after delivery, the mean Hb levels remained similar after treatment with homeopathic medicines (12.7 versus 12.4), compared to a significant decrease in the Hb levels in the placebo group (12.7 versus 11.6;  $p < 0.05$ ), despite the less favorable initial characteristics of the treatment group. The mean difference in the Hb levels at 72 h postpartum was -0.29 (95% CI -1.09; 0.52) in the treatment group and -1.18 (95% CI -1.82; -0.54) in the placebo group ( $p < 0.05$ ). The authors concluded that treatment with homeopathic *Arnica montana* and *Bellis perennis* might reduce the postpartum blood loss compared to the placebo.

*Toxicodendron pubescens* P. Mill (Anacardiaceae), known in homeopathy as *Rhus toxicodendron* (*Rhus tox*) and recorded in most homeopathic medical reports, is used as an anti-inflammatory medicine (Patil *et al.*, 2011) [23]. This plant contains a potent allergen called Urushiol, which is present in its resinous sap. Huh *et al.* (2013) [25] demonstrated in their studies the anti-inflammatory and immunomodulatory effects of *Rhus tox* in experimental animals. These authors reported that when this plant is administered in the homeopathic doses of 6c, 30c, and 200c dilutions, there is an anti-inflammatory activity involving histamine and prostaglandin, thereby effectively modulating the response mediated by anti-inflammatory cytokines.

In this context, Jayagopaia (1992) [10] described the treatment of seven dogs with otophematoma, using the homeopathic medicines *Hamamelis virginiana*, *Bufo rana*, and *Arnica montana* in combination with anti-inflammatory doses of corticosteroid and heparin ointment. Recovery occurred within a 7 to 23-day interval, and only one recurrence was recorded (Valle *et al.*, 2015) [15].

According to Valle *et al.* (2015) [15], the homeopathic treatment for aural hematoma is extremely effective when well prescribed and administered. Furthermore, these authors report the occurrence of aural hematoma in a Labrador breed dog, treated with homeopathy by oral and daily administration of the medicines *Rhus tox*, *Bellis perennis*, and *Belladonna*, showing quick and effective resolution of the disease in 25 days, with no subsequent recurrences.

In another study, Valle *et al.* (2020) [20] report the

homeopathic treatment for an aural hematoma in a Labrador breed dog, with disease resolution in 28 days, using injectable *Hamamelis virginiana*, *Arnica montana* and *Arsenicum album*, as well as oral and daily administration of *Bellis perenis*. The therapeutic protocol used was conclusive, reestablishing the external ear's function with no deformations of the affected tissue. Therefore, the homeopathic therapeutic proved to be an important tool in treating this disease, with no need for invasive procedures. Jayagopaia (1992)<sup>[10]</sup>, Valle *et al.* (2015)<sup>[15]</sup>, and Valle *et al.* (2020)<sup>[20]</sup> record the treatment of aural hematoma by the use of homeopathy, which was effective in the control and cure of this disease. The present study confirms this statement and, thus, corroborates the authors mentioned above. However, this report overcomes their results regarding the recovery time, since the patient (Figure IV–6) had no floating content in the ear (Figures IV - 1 and 2) only 11 days after treatment initiation (Figures IV - 3, 4 and 5). It is noteworthy that the patient was treated exclusively with homeopathic medicines with rapid initial recovery and scar formation up to 30 days after treatment initiation. Therefore, the homeopathic treatment becomes an excellent alternative for the aural hematoma treatment, which is in line with what was reported by Valle *et al.* (2015)<sup>[15]</sup> and Valle *et al.* (2020)<sup>[20]</sup>.



**Fig 4:** 1. Evolution of the aural hematoma treatment. 1 and 2. Day 0. 3, 4, and 5. Day 11; 6. Descriptive image of the treated patient.

The surgical treatment is faster due to the removal of the liquid contained in the aural hematoma. However, it is more invasive and of higher cost, promotes infection risks in the postoperative period, deformities in the external ear during the healing process, sequels, and relapses. Nevertheless, the homeopathic medicines used in this study induced a favorable response, stimulating a fast resolution in 11 days and the complete reestablishment of the animal in 30 days. The animal continues to be assisted by the veterinary clinic and returns to periodic visits to the clinic every 15 days.

### Conclusion

In this study, the homeopathic treatment prescribed was effective, of easy administration, low cost, and had no side effects to the patient. There was no need for any invasive procedure, and it showed an excellent healing process. In conclusion, this study proposes that the therapy here reported should be considered as the first option in cases of aural hematoma, given the recovery time, advantages in terms of cost-benefit for the patient and tutor, lower rate or no possibility of relapses, and no side effects described to date.

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