



Clinical Report

Surgical Treatment of too Large Eosinophilic Granuloma in an Arabian Horse

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Abstract

Case Description- An Arabian 10-month-old filly with a large mass on the left lateral side of the neck was referred to the Department of Surgery, Veterinary Teaching Hospital, Faculty of Veterinary Medicine, Shahid Bahonar University of Kerman.

Clinical Findings- In clinical examination a large, ulcerated mass (12×10×4cm diameter) was detected on left lateral side of the neck, covered with some serosanguineous discharge. Vital parameters (heart rate, respiratory rate, body temperature) were within normal range.

Treatment and Outcome-The surgery was performed under general inhalation anesthesia and the mass was removed *en bloc*. Histopathological examination of the mass showed a large number of eosinophils infiltrated within the dermis and superficial hypodermis, which was diagnosed as eosinophilic granuloma.

Clinical Relevance- This benign tumor is relatively common in horse which is caused mostly due to hypersensitivity reaction to some unknown allergens and chemicals and most of the times are idiopathic. The size of the tumor in this case was much larger than what is reported in the literature.

Key Words- Arabian horse, Eosinophilic Granuloma, Histopathology.

Case Description

In 6 October 2014, an Arabian 10-month-old filly with a large mass in the neck was referred to the Department of Surgery, Veterinary Teaching Hospital, Faculty of Veterinary Medicine, Shahid Bahonar University of Kerman. According to the case history, the client bought the animal with large mass in the neck.

Clinical Findings

In clinical examination a large, ulcerated mass (12×10×4cm) was detected on left lateral side of the neck. (Fig. 1) In palpation, the mass was movable with no firm attachment to the base. The ulcerated part of the mass was covered with a Serosanguineous discharge. The vital parameters of the animal were within normal

range (heart rate 44/min, respiratory rate 12/min, body temperature 38 °C). The animal blood profile showed an eosinophilic response.



Figure 1- (A) a large mass in the neck, (B) the surface of the mass was lacerated

Treatment and Outcome

The surgical site was prepared routinely and the horse was induced by Xylazine 2% (2mg/kg, IV) as premedication, Diazepam 0.5% (0.2mg/kg, IV) and Ketamine 10% (1mg/kg, IV) followed by endotracheal intubation. The anesthesia was maintained by a combination of halothane/oxygen, delivered via an anesthetic machine. During the anesthesia all critical vital sign (Hart rat, Respiratory rat, SPO₂, Blood

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Pressure and Body Temperature) were monitored. Ceftriaxone (40 mg/kg, IV) was administered as prophylaxis. An elliptical incision was made around the mass and it was carefully released from its bed by a combination of sharp and blunt dissections. The bleeders were ligated as indicated. (Fig. 2-A). Following the removal of the mass, the surgical wound was rinsed thoroughly by normal saline, and closed in two layers (subcutaneous by subcuticular pattern of polyglycolic acid 1USP, and skin by simple interrupted pattern of nylon 2 USP)(Fig. 2 A and B). A stent bandage was applied over the suture line for protection. The gross appearance and the cross section of the mass are shown in fig.2 C and D.

Following surgery, Flunixin meglumine (1ml/50kg, IV) was administered for pain management and Ceftriaxone (40mg/kg, IV, SID) for five days as postsurgical antibiotic. The animal recovered from anesthesia with no complication and discharged from the hospital the same day. The skin suture was removed after 10 days.

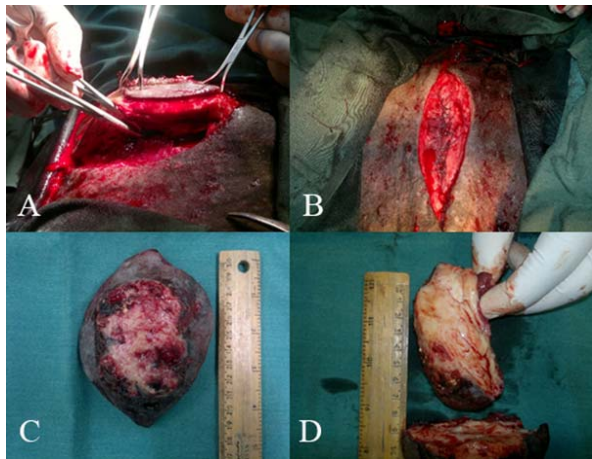


Figure 2- (A) dissecting the mass from its bed, (B) sutured the wound, (C) the mas following resection, (D) Cross section of the mass (12×10×4cm diameter).

Histopathological findings

In histopathological examination, a large number of eosinophils could be seen, infiltrated within the dermis and superficial hypodermis. Collagenolysis occurred in the dermis layer. Necrotic collagen fibers were appeared as hypereosinophilic or hyalinized fragments that scattered between aggregations of eosinophils, lymphocytes and macrophages (Fig. 3-A). Vasculitis and obstruction of some vessels due to hyperplastic endothelial cells were considerable (Fig. 3-B,C). Varying degrees of eosinophilic perivascular cuffing were observed. Separation of the connective tissues around the vessels characterized presence of edema on these areas (Fig. 3-D). In the hypodermis, infiltrated

lymphocytes and few macrophages surrounded the myofibers.

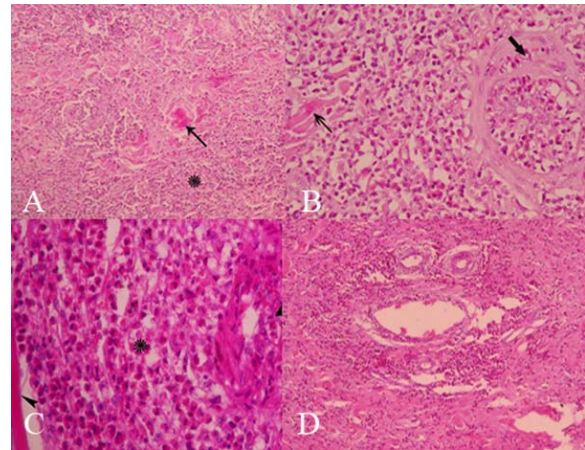


Figure 3- (A) eosinophilic granuloma shows infiltration of eosinophils, lymphocytes and macrophages in the dermis (asterisk) as well ashyalinization of necrotic collagen fibers (arrow) (HE, ×100), (B) collagenolysis (thin arrow)and obstructed a vessel with hyperplastic endothelial cells and eosinophils (thick arrow)(HE, ×400), (C) eosinophilic vasculitis (arrow), collagenolysis (arrowhead) and sever infiltration of eosinophils in the granuloma (asterisk)(HE, ×400), (D) Aggregation of eosinophils around the vessels (HE, ×100).

Clinical Relevance

The most common nodular-like skin diseases in horse are nodular necrobiosis (also called eosinophilic granuloma), sarcoid and melanoma as skin tumors such is common.¹⁻⁵ The eosinophilic granuloma (Collagenolytic Granuloma, Nodular necrobiosis) is a process of collagen degeneration in horses. The unique characteristic of this case was its unusual size (12×10×4cm). The Typical lesions are 0.5 to 1.0-cm the maximum is 5.0 cm.⁶ Granulomatous lesions are chronic inflammatory, non-alopecic, painless, non-pruritic, firm and it can be ulcerative like this case.^{1,2,7} The lesion is mostly found on the neck, withers and back but can be found anywhere on skin.⁵ Diagnosis is based on histopathology and must be differentiated from foreign body granuloma, cysts, parasitic reaction granuloma and neoplasia. The etiology is unknown but suggested hypersensitivity (parasitic organ, drug, and any other antigen) and trauma may play a role.⁵⁻⁷ Proposed treatment is the injection of corticosteroid in base of the lesion and if it is single and too big best way to remove it is surgery.^{2,4-6}

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چکیده

درمان جراحی توده‌ای بسیار بزرگ از گرانولومای ائوزینوفیلیک در یک رأس اسب نژاد عرب

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توصیف بیمار - یک رأس اسب عرب ۱۰ ساله با یک توده بزرگ در سمت چپ گردن به بخش جراحی بیمارستان دامپزشکی دانشگاه شهیدباهنر کرمان ارجاع شد.

علائم بالینی - در معاینه بالینی یک توده همراه با زخم (اندازه ۱۲×۱۰×۴ سانتی‌متر) در ناحیه گردن در سمت چپ دیده شد. ترشحات سرروزی و موکوسی و خونی در سطح توده مشاهده گردید. پارامترهای بالینی (تعداد ضربان قلب، تعداد تنفس، درجه حرارت بدن) در محدوده نرمال قرار داشتند.

درمان و نتیجه - جراحی تحت بیهوشی عمومی استنشاقی انجام شد و کل توده به شکل کامل برداشته شد. در آزمایشات هیستوپاتولوژیک توده تعداد بسیار زیادی ائوزینوفیل وارد لایه درمی و سطح فوقانی هیپودرم شده بودند، بر این اساس توده به عنوان گرانولومای ائوزینوفیلیک تشخیص داده شد.

کاربرد بالینی - این نوع تومور در اسب بسیار رایج بوده و بیشتر به دلیل پاسخ بیش از حد به حساسیت با آلرژن‌ها و مواد شیمیایی است. روند ایجاد این توده‌ها نامعلوم است. در این مورد اندازه توده بسیار بزرگ‌تر از اندازه گزارش شده در سایر موارد و حالت معمول آن است.

کلید واژگان - اسب عرب، گرانولومای ائوزینوفیلیک، هستیوپاتولوژی.