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CASE REPORT

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A BITE WOUND FROM A STRAY OR FERAL CAT - CASE REPORT

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Abstract

Introduction/Objective Cat bites can seriously harm human health, especially if the bite comes from a stray or feral cat who is not under veterinary supervision. Cat bites are the second most common mammal bites, second only to dog bites, and responsible for ¾ of all bites that result in infection. We are presenting the case of a young woman whose hand had been bitten by a stray or feral cat. The objective of this case study is to stress the importance of timely medical treatment and wound management based on guidelines for treating bites inflicted by stray or feral cats, aiming to prevent possible complications.

Case report A 32-year-old woman was admitted and examined in the University of Sarajevo Clinical Centre Emergency Department on the third day after being bitten by a stray or feral cat, by which time all signs of inflammation had already developed at the site of the injury – her right hand. Medical help was provided based on guidelines that included specific wound dressings recommended for animal bites, a prescription of antibiotics, analgesics and an anti-tetanus shot. The patient fully recovered with no complications.

Conclusion The specific anatomy of the cat's canines enables them to penetrate deeply into the bitten tissue, which can cause an inoculation of a wide range of microorganisms from the cat's mouth into the patient's bloodstream. This can cause serious inflammatory processes, especially in immunocompromised patients. Adequate medical treatment of injuries resulting from cat bites is necessary as soon as possible, but no later than 48 hours after the incident.

Keywords: bite, stray cat, feral cat, hand, treatment

INTRODUCTION

The domestic cat (*Felis silvestris catus*) is essentially a natural predator with an instinct to consume smaller amounts of food from its surroundings 2-3 times a day, protect its perceived territory and its litter [1]. The possibility that cats could injure humans with their canines and/or claws during any of the activities mentioned above, should not be ignored. In addition to the fact that the danger cats represent is generally underestimated, the potential danger is even greater because of the cat's relatively passive interaction with the environment. Cats show their aggression towards humans by scratching or biting, which, in addition to tissue damage and wound formation, present a significant risk for the transmission of zoonoses [2].

About 100 zoonotic diseases can be transmitted from cats and dogs to humans. These diseases are caused by a wide range of microorganisms, both aerobic and anaerobic. The most common are caused by bacteria found in the mouth of cats, followed by those from the environment and then the skin of the bitten person [3].

The additional problem of bites and/or scratches of stray or feral cats is that they are potential carriers of zoonotic parasites, including toxoplasmosis [4], cryptosporidiosis and giardiasis [5] as well as zoonotic bacteria, *Pasteurella* species [6], tularemia [7], and so on.

Cat bites and/or scratches are most common on the extremities, especially on the hand, which is an aggravating circumstance due to the specific anatomy of the hand. Good blood supply and good innervation enable even small wounds to cause very aggressive infections [8,9]. Bites by domestic cats, such as pets or those under veterinary supervision, are usually harmless. Those injuries are most commonly not reported by cat owners, who do not seek medical help and the injuries themselves respond very well to local treatment. There is no precise data in the literature on how many people get bitten by cats because a significant number of such patients do not seek medical help, but it is assumed that the number of bites is significant.

Animal bites are urgent medical conditions that require urgent medical treatment and they do make up for 1-2% of all emergency medical visits globally. In countries that are not rabies-free, it is necessary to assess the need to implement anti-rabies protection [2,8].

Objective

The case study aims to present medical treatment and protocol for wound management after a bite inflicted by a stray or feral cat. A special focus has been placed on the importance and need for professional medical care since these bites are frequently underestimated and adequate treatment is neglected.

Case report

A 33-year-old woman sought medical help at the Emergency Clinic of the Clinical Center of the University of Sarajevo for a bite wound inflicted by an adult stray or feral cat. From the anamnestic data, it became clear that the patient received the bite while feeding a large number of cats on the street. The bite was on her right hand (Figure 1.).



Figure 1. A bite inflicted by a cat on the patient's hand with evident signs of inflammation.

The patient had ignored the wound for two days following the bite, considering it harmless. When clear signs of inflammation appeared on the third day, she sought medical help.

The patient was very upset and frightened. In addition to the obvious inflammation, a seropurulent discharge was found to leak from the perforated skin during clinical examination, which indicated the deep damage caused by the cat's canines. The site of the injury and the surrounding tissue were swollen, significantly painful to the touch and warmer compared to the temperature of uninjured skin. The metacarpal phalanges were unable to flex.

Since this was a local inflammatory process, no additional laboratory findings were required.

Medical treatment was initiated by thoroughly rinsing the bite wound with 0.9% saline solution, followed by 3% hydrogen peroxide solution and at last, treated with povidone-iodine solution (Isobetadine®) [10]. Antibiotic therapy was prescribed to treat and prevent the spread of the pre-existing local infection. Amoxicillin clavulanate was administered orally (Xiclav 2 x 1000 mg). To relieve pain and suppress the inflammatory processes, the patient was given an intramuscular (i.m) injection of diclofenac, 75 mg/3 mL. The first dose was administered at the Clinic. For the next two days of treatment, the patient was given additional diclofenac injections, 75 mg/3 mL i.m. per day.

After checking her tetanus vaccine status, the patient was vaccinated with a booster shot. Upon taking the antibiotic therapy and the anti-tetanus prophylaxis, the patient reported that she felt well and a clinical examination revealed that the evident inflammatory process on her right hand had subsided and the wounds had healed. Her treatment proceeded routinely and was completed successfully.

The first step in preventing infection after a cat bite is to immediately clean and disinfect the wound [10]. However, in this case, the patient only came to the Clinic two days after the bite had occurred and signs of inflammation had already developed. Stray or feral dogs and cats have a lot of opportunistic and/or potentially pathogenic bacteria in their oral cavity, which cause infections of wounds created by bites and scratches [6, 11]. Since the cat that injured the patient was not under veterinary supervision, an inflammatory reaction after the bite was quite expected. Cats are known to have sharper and thinner canines than dogs, whose teeth are more massive, wider in diameter and blunt [12]. Dogs' canines do not tend to penetrate deep into the tissue but they do leave a larger wound after a bite [13]. Cats' teeth are sharp and can penetrate relatively deep, often implanting bacteria in the skin, subcutaneous tissue, even in the sheaths of joints and tendons, which are difficult to treat, increasing the risk of serious infection [12].

Infections resulting from bites and/or scratches by stray or feral cats are often serious with pronounced clinical manifestations such as cellulitis, soft tissue abscesses and purulent wounds at the site of injury, tenosynovitis, and septic arthritis [14]. In addition to local wound infection, *P. multocida* can also cause systemic infections, including septicemia, meningitis, brain abscess, pneumonia, endocarditis, and other serious consequences, especially in immunocompromised patients [6].

Since this was a deep, puncture wound that was not adequately treated on time, optimal conditions did exist for the development of anaerobic bacteria. Therefore, the wound was thoroughly cleaned with 3% hydrogen peroxide solution, and a tetanus vaccine was administered.

The cat that had bitten our patient's hand showed unprovoked aggression which is atypical for cats. In some parts of the world, this bite would require a risk assessment for rabies, but that is not necessary for our area now, because rabies in humans has not been reported and dogs are considered to be the main potential carriers of urban rabies, although cats can also transmit the disease [3].

Conclusion

Animal bites, including cat bites, are an important health problem worldwide, even in Bosnia and Herzegovina, and life-threatening conditions such as sepsis, endocarditis and meningitis can be the result. Immunocompromised people are at a particularly high risk of developing health complications associated with cat bites. Therefore, it is necessary to receive adequate medical treatment for all cat bites as soon as possible, but no later than 48 hours after the bite.

Conflict of interest: None declared.

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PRIKAZ BOLESNIKA

ULIČNA MAČKA - UGRIZNA RANA: PRIKAZ SLUČAJA

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SAŽETAK

Uvod/cilj Ugriz mačke može naštetiti ljudskom zdravlju, posebno mačke lualice, koje nisu pod veterinarskim nadzorom. Ujedi mačaka predstavljaju drugi najčešći ugriz sisara, posle ujeda pasa, i odgovorni su za 3/4 ujeda koji rezultiraju infekcijom. Predstavljamo slučaj ugriza mačke lualice za ruku mlade žene. Cilj ovog rada je skrenuti pažnju na važnost pravovremenog medicinskog tretmana pacijenata, s protokolom njege rane nakon ugriza mačke lualice, radi sprečavanja mogućih komplikacija.

Prikaz bolesnika: Pacijentkinja stara 32 godine, pregledana je na hitnom prijemu Urgentnog centra Univerzitetskog Kliničkog centra Sarajevo, trećeg dana nakon ugriza mačke lualice, kada su se na ozlijeđenom dijelu tela (desna ruka), razvili svi znakovi upale. Liječnička pomoć, pružena je prema protokolu preporučenom za ugrize životinja, koji uključuje specifičan toalet rane, primenu antibiotske terapije, analgetika i antitetanusne zaštite. Liječenje bolesnika bilo je uspješno, bez ikakvih posljedica.

Zaključak Mačiji očajnici zbog svoje specifične anatomske građe, ostavljaju pri ugrizu duboke ubodne rane, koje mogu dovesti do prodiranja širokog spektra mikroorganizama iz usne šupljine u cirkulaciju pacijenta. To može uzrokovati ozbiljne upalne procese, posebno kod imunokompromitiranih pacijenata. Adekvatna medicinska njega kod ugriza mačaka nužna je što je prije moguće, a najkasnije 48 sati nakon ugriza.

Ključne riječi: ugriz, mačka lualica, ruka, terapija