

## CASE REPORT

# Unusual Site of Cat Bite over Eye in a Child-Treated With Diluted ERIG and IDR V

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### ABSTRACT:

The purpose of this case study is to create awareness about the proper management of ocular injuries due to animal attacks.

A 4yrs old male child presented with a cat scratch over left sclero-conjunctival junction, left upper eyelid and left side of nose. He was administered with Purified Vero-Cell Rabies vaccine as intra-dermal regimen. Out of the calculated requirement of ERIG (2ml) as per the child's body weight, 0.1 ml of ERIG diluted with 0.5 ml of Normal Saline was irrigated into the eye drop wise and 0.1 ml of ERIG each was infiltrated over left upper eyelid and nose and rest calculated volume (1.7 ml) was injected over thigh. The child was also given anti-histamine (syrup Cetirizine) orally for 5 days and was followed up for any side effects on his subsequent visits for IDR V and found to be healthy.

**Key words:** Rabies, ERIG, Cat Scratch, ERIG irrigation into eyes.

### INTRODUCTION:

Animal bites in children are either under reported because of children not informing their parents or ignorance on part of parents. They are recognized by their parents only if the site of animal bite is on any exposed part of the body or the injury is associated with bleeding.

Children are mostly affected by animal bites, particularly cats and dogs because of their playful and anxious nature.(1) In about 70% of cases in children, injuries are inflicted over face, neck and head.(2) Animal bites over areas like head, neck, face and hands, which are nearer to central nervous system, have shorter incubation for developing rabies infection.(3)

Cat bite/ scratch injuries are more prone to infection as their teeth and nails are more sharper than dog's and cause deep wounds. Two-thirds of cat bite injuries are reported in the upper extremity and cat scratches are most common over the hands and fingers. Cat inflicted injury over eye is an uncommon site.

Hence, delay in treatment of these wounds can lead to Rabies and wound infection.

### CASE PRESENTATION:

This is a case of a 4 years old Hindu male child hailing from Choudwar, Cuttack in the state of Odisha who reported to the Anti-Rabies Clinic of SCB Medical College and Hospital, Cuttack with OPD Regd No.-6907 dt 30/09/2020. He was attacked by a stray cat which was provoked in nature. His injuries included scratches of

- 1) 0.2mm over left sclero-conjunctival junction
- 2) 0.2mm over left upper eyelid and
- 3) 0.5mm over left side of nose

The patient was not vaccinated with tetanus as he was previously vaccinated with DPT Booster. According to WHO categorization of animal bite injury it was a Category III exposure.

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- 4) The child was treated by administering anti-rabies vaccine, immunoglobulin and oral medications. Injection anti-rabies vaccine PVRV: Inj. Indirab, manufactured by Bharat Biotech International Ltd, Telengana, India; BN-62D20002A with Mfg date May 2020, Exp date April 2020 and antigenic content of  $\geq 2.5$  IU (per vial) was administered 0.1ml intradermally over both the deltoids using 1ml insulin syringe. The rabies immunoglobulin, inj. ERIG inj. Vinrig manufactured by Vins Bioproducts Limited, Telengana, India; BN- 02AR20006, with Mfg date June 2020, Exp date May 2022 with a potency of 300 IU/ml) calculated as per his body weight and requirement was 2ml (40IU/kg body weight i.e. 600IU). Out of the required 2ml of ERIG, 0.1ml was diluted with 0.5ml of normal saline and the diluted form of ERIG was slowly irrigated drop by drop over the left eye locally. The injured eye was irrigated thrice at an interval of 10 minutes. Then 0.1ml of Inj. ERIG was also administered locally over left upper eyelid and 0.1ml of ERIG was infiltrated over left side of nose locally too. The rest amount of calculated ERIG (1.7 ml) was administered over antero-lateral aspect of left thigh as intramuscular. He was also given oral medications of anti-histaminics (Syrup Cetirizine) and antibiotics (Suspension Amoxycillin 200mg). He was then referred to Ophthalmology OPD where he was advised for topical use of Tobramycin eye drop twice daily for 5 days. After treatment he was advised to come on days 3, 7 and 28 for ARV (IDRV) administration and follow up for assessing any side effects of local irrigation of diluted ERIG into the eye. On subsequent visits for his ARV (IDRV) administration any side effects of local ERIG irrigation over the eye was looked for and the child did not complain any local side effects over the eye.



**Figure 1: Irrigation of injured eye with diluted ERIG in drops**

## DISCUSSION:

This is a case of cat scratch over eye in a child of 4 years of age. Different studies have shown children being victims of animal bites over face, neck & head and constituting about 70% especially because of their playful nature with the animals and of short stature. (2) Around 40% of animal bite cases occurring in Africa and Asia are under 15 years of age. (5)

This patient reported to the ARV Clinic immediately within 3 hours. Different studies have shown reporting time being from 1 hr to 48 hrs for seeking treatment at the ARV Clinic. However, the delay in starting the treatment can lead to different consequences like wound infection and even Rabies. (6)

The present case is a rare case of cat scratch injury being over the eye which is one of the uncommon sites, especially in children. A similar type of case has been already reported by T R Behera et al at MKCG Medical College, Berhampur. (7) However, different studies have shown that animal bite/ scratch injuries over face, neck and head constitute about 70% of cases in children. (2)

The patient was managed with Anti-Rabies Vaccine intradermally (IDRV) and the injured eye was irrigated with diluted ERIG with Normal Saline. After irrigating the eye with diluted ERIG, the patient was observed for an hour for any immediate adverse reactions. (3) This patient did not develop any immediate reaction. In the case reported by T R Behera et al at MKCG Medical College, Berhampur, the patient developed profuse lacrimation and itching after irrigation with diluted ERIG. (7) This may attribute to the different brand of ERIG used or the Child's adoptive response.

In the present case the child was referred to the Ophthalmology dept. where he was given topical antibiotics, Tobramycin eye drop and a lubricant, Carboxymethyl cellulose. In a similar case in 2021 by D. Borkar and P. Avendano, the patient was

diagnosed with corneal laceration where moxifloxacin ophthalmic solution and Polyvinyl alcohol 1.4% ophthalmic solution was prescribed but he was not treated with Anti-Rabies Vaccine as the cat was pet in nature. (8) Usually, complications following Cat Bite/Scratch arise because of infection which is polymicrobial in nature. About 56% of cases of infections are polymicrobial (both aerobic and anaerobic infection). (9)

#### CONCLUSION:

In all Category III animal inflicted injury, RIG should be infiltrated as much as anatomically feasible irrespective of the site. But in atypical cases like injury over eye, where the wound is over the conjunctiva which is highly innervated & highly vascular, RIG cannot be injected locally into the eye. So, the wound site should be irrigated with diluted ERIG so as to avoid any side effects of ERIG and also fulfills the WHO criteria of RIG administration in Category III animal bite to prevent Rabies. Hence, this type of cases should be managed by active immunization with IDRV and affected conjunctiva should be irrigated with diluted ERIG. This procedure of ERIG irrigation after dilution with Normal saline over the injured eye is safe and can be practiced as a method for treatment of animal bite over eyes.

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