Oral myiasis in maxillofacial trauma - treated with Ivermectin
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Abstract
Myiasis is the infestation of live human with larvae which feed on host’s dead or living tissue. This paper report a case of oral myiasis in the upper lip in a 71 years old female managed by manual removal of larvae by topical application of turpentine oil, oral therapy with Ivermectin and surgical debridement of oral wound.

Key words: Oral Myiasis; Common House Fly; Ivermectin.

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Introduction
The term myiasis is derived from Latin word ‘muia’ which means fly and ‘iasis’ means disease. (1) The term myiasis is currently defined as the infestation of live vertebrate animals with dipterous larvae, which, at least for a certain period, feed on the host’s dead or living tissue, developing as parasites. (1, 2) Although myiasis is much more prevalent in animals, it has a relatively frequent occurrence in humans in rural, tropical and subtropical regions. (3) The present article reports a case of case of traumatic wound myiasis in maxillofacial region.

Case Report
A 71 year old female of low socioeconomic status, having poor living conditions reported to our department. She had the chief complaint of pain and swelling in the upper lip area since 10 days. History revealed trauma to face 20 days back, when she accidentally fell from her bed while picking up her urine container in the midnight. She had bruises and lacerations on and inside her upper lip, along with avulsion of her upper anterior teeth. She was taken to a local quack who just gave her few medicines for the same.

Extra oral examination revealed incompetency upper lip with diffuse swelling, extending up to the right infraorbital area. Also, patient had a necrotic ulcer of approximately 2.0 cm X 1.4 cm, extending from mid of the vermilion of the right upper lip to right nasolabial fold. Intraoral examination revealed empty sockets in relation to 14 to 23 teeth. No bleeding was present from the gingival sulcus area. Same lip to our surprise had moving worms like objects, Maggots within (Figure 1).

Additionally patient had severe halitosis, advanced periodontal disease and poor oral hygiene. Intraoral Periapical radiograph revealed generalized horizontal bone loss and was negative for any other injury. Patient was febrile with 101°C temperature. All the haematological investigations were within normal limits. Based on the history and presence of maggots, provisional diagnosis of oral myiasis was made. The patient was immediately transported to the operating room. Under intravenous conscious sedation, cotton bud impregnated with turpentine oil was applied in the wound for approximately 10 minutes. After this, maggots were manually removed with the help of curved artery forceps (Figure 2) and sent for entomological examination. Further management included surgical removal of dead necrotic tissue, extraction of periodontally weak teeth and irrigation done with saline and metronidazole.

After the procedure, the patient was transported to the recovery room in satisfactory condition. She was given Tab. Ivermectin 6mg OD for 2 days, along with Inj. Cefazolin 1 g 6-hourly and Inj. Metronidazole 500 mg 8 hourly for five days postoperatively. Tetanus prophylaxis was also given to the patient. Wound care included warm saline rinses QID, chlorhexidine mouth wash 0.12% TID. All the maggots were removed including dead larvae in approximately 3 days.

Figure 1 Preop
Figure 2 Larva

The patient was discharged on the 5th day with thorough written and verbal wound care instructions. She was given a follow-up appointment in 1 week with subsequent follow-ups after every week. After 23 days, the wound had healed completely. Entomological analysis verified that the larvae were of house fly (Musca Nebulo). It is the commonest Indian housefly.

Discussion
The overall worldwide development has definitely reduced the incidence of oral myiasis. Nevertheless, the conditions required for egg laying and survival of the larvae are provided by wounds, open sores, ulcers contaminated with...
discharges. In literature most infestation occurred in males, probably because they tend to spend more time outdoors, and neglect their oral hygiene when compared to females.(4) contrary to the present report where the patient was a female.

These larvae release toxins and proteolytic enzymes which decompose the tissue and the larvae feed on it. (1) Maggots are photophobic and tend to hide deep into the tissues for a suitable niche to develop into pupa.(5) The present case also showed the larvae burrowed deep inside the lip and socket.

Out of various options for treating this lesion, the simplest is the mechanical removal of the larvae with tweezers, usually under local anesthesia. But, this is not possible because of the larva’s hooks that it uses to grip the tissue cavity. So, we used turpentine oil which acts as topical anaesthetic and blocks the larva’s respiratory sinuses, forcing this aerobic organism to the surface in search of air and allowing their removal with the aid of forceps or tweezers. (1, 6) This method is also known as Occlusion or Suffocation approach. The other agents can be used are ether, chloroform, iodoform and phenol mixture. (4)

Care must be taken to prevent laceration of the larva; any portion of larva remaining in the tissue cavity will produce an undesirable inflammatory response or a bacterial infection. The use of drugs to treat oral myiasis is incipient and few reports are found. (7) The only antibiotic that is effective against maggots through intravenous or oral use is ivermectin, which blocks nerve impulses on the nerve ending through the release of gamma amino butyric acid (GABA), linking to the receptors causing palsy and death. (8) Shinohara et al. reported a moderate success when treating oral myiasis with ivermectin 6mg given orally, and repeated after 24 hours. It seems that the dose of ivermectin was about 200 micro g/kg, as the same author emphasized that dose in another paper. (9) This case had good results with the dose of ivermectin 6 mg when given orally. One of the main advantages of ivermectin is that it is not necessary to operate on the patient to remove the larvae. In order to prevent and control secondary infections, systemic administration of I.V. cephalosporin was done. Recently, Nitrofurazone, a topical agent possessing antibacterial, antiprotozoal, and anti-parasitic activities has been successfully used in the treatment of oral myiasis. (8) In conclusion it is hoped that this case report will be useful in the evaluation and treatment of patients with myiasis.

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