ISSN 0976 – 3333

Available Online at www.ijpba.info

**International Journal of Pharmaceutical & Biological Archives 2012; 3(3):530-533**

**ORIGINAL RESEARCH ARTICLE**

# Extensive Myiasis Infestation over a Malignant Lesion in Maxillofacial Region: Report of Cases

**Santosh Kumar Yadav*[1], Suraksha Shrestha[2], Ajit Kumar Sah[3]**

[1]*Dept of Oral & Maxillofacial Surgery, Chitwan School of Medical Sciences, Bharatpur-10, Chitwan, Nepal*
[2]*Dept of Prosthodontics, National Academy of Medical Sciences (NAMS), Bir Hospital Kathmandu, Nepal*
[3]*Dept of Pharmacology, Chitwan School of Medical Sciences, Bharatpur-10, Chitwan, Nepal*

Received 07 Mar 2012; Revised 29 May 2012; Accepted 08 Jun 2012

## ABSTRACT

Myiasis is the condition of infestation of the body by fly larvae (maggots). The deposited eggs develop into larvae, which penetrate deep structures causing adjacent tissue destruction. It is an uncommon clinical condition, being more frequent in tropical countries and hot climate regions, and associated with poor hygiene, suppurative oral lesions, alcoholism and senility. The diagnosis of myiasis is basically made by the presence of larvae. This paper reports a case of oral and maxillofacial myiasis involving larvae in a patient with squamous cell carcinoma. The condition was managed by manual removal of the larvae, one by one, with the help of clinical forceps and subsequent management through proper health care, further destabilization due to myiasis was avoided.

**Key words:** Myiasis, Squamous cell carcinoma, Turpentine oil.

## INTRODUCTION

The term myiasis derived from the Greek word "myia" means 'fly' [1], and is used to describe invasion of viable mammalian tissues by dipterous fly larvae [2]. Human myiasis is a rare condition [1] that can occur in any part of the globe, but is more common in regions with a warm and humid climate [3]. The infestations can strike organs or tissues that are accessible to egg-laying and development of the larvae, which feed on living or necrotic tissue and body fluids, and necrotic lesions that provide an ideal substrate [4].

Diabetic and peripheral vascular diseases can be predisposing factors for myiasis, mainly in elderly, in whom the sites most attacked are the feet and ankles [5]. The condition can be completely benign and asymptomatic, resulting mild to acute pain or in extreme cases cause death of the patient [6].

They may infest different parts of body as in cutaneous, urogenital, ophthalmic, nasopharyngeal, intestinal, and the oral cavity. Fungating and necrotic wounds are common among cancer patients in Nepal, because many patients have advanced neglected tumours. Necrotic and decomposing tissue attracts flies, with Nepal tropical climate being especially conducive to their breeding. Poverty, poor sanitation, and lack of aseptic wound care exacerbate the problem. This problem has been neglected at personal and professional levels. Many cases of maggot infestation are not detected or treated. The aim of this work is to present a case of myiasis associated with squamous cell carcinoma from a patient living in rural Nepal.

**Case Reports:**

**Case report 1**

A 51-year-old male patient treated for squamous cell carcinoma of left side of tongue by radiotherapy followed by surgical excision of the residual lesion. Hemiglossectomy was performed by lip split access osteotomy and residual lesion was excised along with floor of the mouth and reconstructed with nasolabial flap. Postoperative recovery was uneventful and sutures were removed on tenth post operative day. On the first follow up after 7 days it was noticed that neck incision had gaped and infested with maggots (**Fig 1**).

The treatment began with flushing the incision wound with turpentine oil. Followed by topical application of local anaesthesia, the mechanical debridement of maggots were picked up with the help of clinical forceps, on the first day more than 150 maggots were removed. The wound was

***Corresponding Author:** Dr. Santosh Kumar Yadav **, Email:** drsky.omfs@gmail.com

washed with saline, followed by placement of betadine dressing. The patient was administered Ampicillin, Gentamycin and Metronidazole. The following day, the wound was irrigated with hydrogen peroxide and then with turpentine oil. Around 40-50 maggots were removed, after which the wound was irrigated with saline followed by placement of betadine dressing.

This procedure was repeated for five more days, by the end of which the wound properly debrided and the edema had also subsided (**Fig 2**). Debridement followed by the placement of new dressing was carried out regularly. The sight of maggots was often frightening for patient and the care giver, and support and counselling were very important. The care giver was taught proper wound care and counselled to not to show revulsion.

**Case report 2**

A 61 year old male patient belonging to a low socioeconomic family, reported to the department of oral and maxillofacial surgery with blood-tingled, fetid discharge from facial wound along with pain and presence of some live worm like organisms since 7 days. Patient had previously presented to us with multiple nodular swellings on right side of upper neck and difficult in swallowing for duration of four months. On local examination of these nodules; 8-10 number, firm in consistency, size ranging from 5 mm to 2 cm in diameter, shape round to spherical, unchanged colour, surface smooth and shiny with no ulceration and bilaterally submandibular lymph nodes were palpable. On intraoral examination ulcerative lesion on the floor of the mouth resembling carcinoma. These nodules were then subjected for incisional biopsy and the diagnosis of moderately differentiated squamous cell carcinoma was made.

The patient was lost to follow up for two months period. After two months he again reported with current complaint. During the examination of previous biopsy site, there were fungating, non healing lesion with black discoloration, discharging pus and clotted blood and numerous maggots (**Fig 3 & Fig 4**). With examination of the wound site the diagnosis of myiasis infestation over cancerous lesion was made. Similar treatment modality for removal of maggots as in case report 1 was done. It took one week period to clear maggots, and then definite treatment was preceded for carcinoma (**Fig 5**).

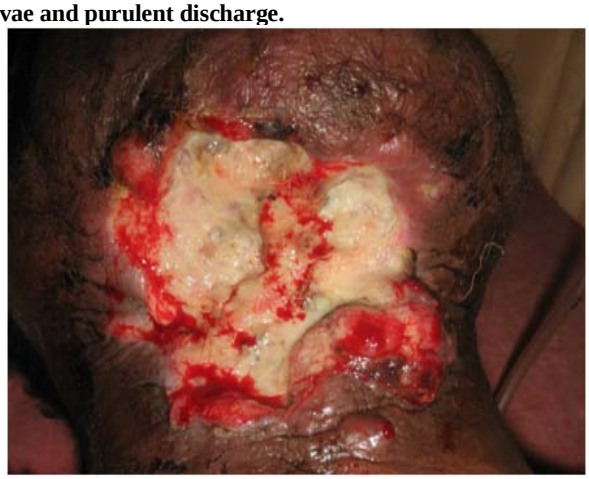
**Fig 1: Neck incision gaped, with several larvae**

**Fig 2: Clinical appearance one week after removal of the larvae**

**Fig 3: Extensive necrotic tissue area of neck region with many larvae located inside of it.**

**Fig 4: The larvae removed the wound debrided with antiseptic solution.**

**Fig 5: After complete removal of the larvae and proper use of antibiotics the lesion was responding to treatment with no larvae and purulent discharge.**



## DISCUSSION

The risk factors for the development of myiasis are supparative lesions, open wounds, scabs, traumatic wounds, ulcers contaminated with discharges and blood remnants. When these conditions are super-added with debilitation, mental or physical disability and poverty, the chances of myiasis increases [7]. The patient in the present report of cases was of low socioeconomic status having poor living conditions. Besides, the population who lives in rural areas often neglect their health, sometimes simply through lack of knowledge. In addition, infrastructure and other facilities are inadequate, and overall quality of life is poor.

Myiasis is the disease caused by invasion of organs and tissues by dipterous larvae, which last for a period of time and feed on the living or dead tissues. Myiasis can be classified into accidental, facultative or obligatory: in accidental myiasis, the larvae have no requirement for living in mammalian tissue; in facultative myiasis, the larvae live in dead tissue but may move into adjacent living tissue; whereas in obligatory myiasis, the larvae live only in living tissue [8]. The diagnosis of myiasis is made on the basis of larvae movement [9], although in few cases where the larvae are below the skin, differential diagnosis is necessary. The aim of treatment for myiasis should be removal of all the invading organisms, disinfection with proper aftercare of the wound and control of possible secondary bacterial infections.

The traditional and classical treatment of myiasis is surgical debridement under local anaesthesia followed by mechanical removal of maggots [1]. When there are multiple larvae, local application of various agents like turpentine oil [10], cocaine, naphtha, ether, chloroform is advocated. These agents are supposed to asphyxiate the aerobic larvae and force them to a more superficial position making manual removal easier with less damage to tissues and larvae as well[11]. This can be followed by irrigation with warm saline solution. Care should be taken not to rupture the maggots as it might cause allergic or foreign body reaction and secondary infection [7,11]. Successful treatment of wound myiasis by *Cochliomyia* with 1% ivermectin in a propylene glycol solution directly applied to the affected area has been reported. Ivermectin leads to paralysis and death of the parasites by stimulating discharge of the γ amino-butyric acid (GABA) by nerve endings of the parasite and increasing the affinity of GABA in special receptors at synapses [12]. Oral ivermectin has also been described for the treatment of oral myiasis. The dead larvae have to be removed following an effective oral treatment to prevent foreign body granuloma formation [13].

In these reports, myiasis seemed to cause a limited degree of local tissue destruction without any associated massive bleeding or secondary bacterial infection and septic shock; however, myiasis can involve deeper head and neck structures, causing severe tissue destruction[14]. Early diagnosis is crucial to limit tissue damage. Examination of the larvae is the most reliable means to establish the aetiological diagnosis. Detailed imaging study may be helpful to delineate the severity of the disease. This is particularly important in the geriatric population which is at risk group.

## REFERENCES


1. Shinohara EH, Martini MZ, Oliveira Neto HG, Takahashi A. Oral myiasis treated with ivermectin: Case report. Braz Dent J 1998; 15:79-81.
2. Erol B, Unlu G, Balcik, Tanrikulu R. Oral myiasis caused by hypoderma bovis larvae in a child: a case report. J Oral Sci 2000; 42:247-49.
3. Hira PR, Assad RM, Okasha G, Al-Ali FM, Iqbal J, Mutawali KE, Disney RH, Hall MJ. Myiasis in Kuwait: nosocomial infections caused by Lucilia Sericata and Megaselia Scalarias. Am J Trop Med Hyg 2004; 70:386-89.
4. Yazar S, Dik B, Yalcin S, Demirtas F, Yaman O, Ozturk M, Sahin I. Nosocomial oral myiasis by sarcophagi sp. In Turkey. Yonsei Med J 2005; 46:431-34.
5. Joo CY, Kim JB. Nosocomial submandibular infections with dipterous

fly larvae. Korean J Parasitol 200; 39:255-60.

6. Caca I, Unlu K, Cakmak SS, Bilek K, Sakalar YB, Unlu G. Orbital myiasis: Case report. Jpn J Ophthalmol 2003; 47:412-14.
7. Caissie R, Beaulieu F, Giroux M, Berthod F, Landry PE. Cutaneous Myiasis: Diagnosis, treatment and prevention. J Oral Maxillofac Surg 2008; 66:560-68.
8. Gutierrez Y. Diagnostic Pathology of Parasitic Infections. 2nd ed. New York: Oxford University Press; 2000:722-28.
9. Yazar S, Oz can H, Dincer S, Sahin I. Vulvar myiasis. Yonsei Med J 2002; 43:553-55.
10. Baliga MJ, Davis P, Rai P, Rajasekhar V. Orbital myiasis: A case report. Int J Oral Maxillofac Surg 2001; 30:83-84.
11. Gabriel JG, Marinho SA, Verli FD, Krause RG, Yurgel LS, Cherubini K. Extensive myiasis infestation over a squamous cell carcinoma in the face. Case report. Med Oral Patol Oral Cir Bucal 2008; 13(1):E9-11.
12. Victoria J, Trujillo R, Barretto M. Myiasis: a successful treatment with topical ivermectin. Int J Dermatol 1999; 38:142-44.
13. Kumarasingha SP, Karuna weera ND, Ihalamulla RL. A study of cutaneous myiasis in Sri Lanka. Int J Dermatol 2000; 9:689-94.
14. Bayer HG. Myiasis maligna of nose and ears in Ceylon. Arch Otolaryngol 1954; 1:104-7.