Discussion of a case of Dirofilariasis presenting as a nodular mass

Preeja Premakumar1, Vivek Velayudhan Nair2*, Bindu Janardanan Nair3, Sunila Thomas4, Vineet Daniel Alex5, Jincy Thomas6, Rani Mol Prasanna7

1Post graduate student, 2Professor & Head, 4Professor, 5Reader, 6&7 Senior Lecturers, Department of Oral Medicine and Radiology, 3Professor & Head, Department of Oral Pathology and Microbiology, PMS College of Dental science & Research, Golden Hills, Vattappara, Venkode PO, Trivandrum, Pin 695028, Kerala, India.

ABSTRACT

Human Dirofilariasis is a zoonotic disease which presents commonly as subcutaneous nodules. They are considered as emerging pathogens, as the frequencies of reports are increasing in literature over the last few years. These lesions closely have a wide variety of differential diagnosis and resemble several benign and malignant tumors, it is important to consider this as a differential diagnosis in a case of subcutaneous nodule especially in an endemic area or in coastal population. This article attempts to discuss the differential diagnosis of a case of a facial subcutaneous nodular mass palpable intraorally finally diagnosed as Dirofilariasis in an endemic area in Trivandrum, Kerala.

KEYWORDS: Dirofilariasis, Endemic, Nodular mass.

INTRODUCTION

Dirofilariasis is a zoonotic infection which is caused by Dirofilaria immitis, Dirofilaria repens, Dirofilaria tenuis and Dirofilaria ursi. It is transmitted to humans by Culex, Aedes or the Anopheles mosquitoes which ingest the blood containing Microfilaria from affected animals [1]. This infection rarely affects oral mucosa. Lesions are presented as single non tender subcutaneous/submucosal nodules and most patients are asymptomatic [2]. The reported cases from India are limited and most of the published cases are of ocular dirofilariasis, occurring in an endemic areas or in coastal population. A case of firm non tender nodular intraoral swelling, finally diagnosed as dirofilariasis is presented with emphasis on differential diagnosis.

CASE REPORT

A 32 year old male from Trivandrum, Kerala, South India presented with non tender diffuse swelling on the right cheek, more towards the lower jaw, of one month duration. The swelling was slow growing (Figure 1). The patient gave a history of a similar swelling which disappeared without treatment in the same location six months previously.

The past medical history was non contributory. The swelling could not be appreciated intraorally by visual examination alone (Figure 2). On palpation a firm non tender swelling measuring approximately 2x2 cm could be appreciated on the right buccal sulcus apical to 45, 46 and 47 with ill-defined edges. The overlying mucosa did not show any change of colour or local rise of temperature. Patient had a partially erupted 48 with deep periodontal pocket distal to 47. All the teeth in the lower right quadrant were caries free and tested positive to electrical pulp tester. Intraoral periapical radiograph showed normal periodontal ligament space, lamina dura and trabecular pattern in 45, 46, 47 region. Panoramic radiographic picture was normal except for mesioangular impaction of 48 and a large radiolucency in the crown of 38 (Figure 3). The results of routine blood investigations were all within normal limits.

Thus a provisional differential diagnosis list of which included Dirofilariasis was finalised. An excisional biopsy under local anesthesia was planned since the lesion was freely movable and there was no evidence of induration or invasion of surrounding structures. The specimen was sent to the Department of Oral and Maxillofacial Pathology for histopathological evaluation.
DISCUSSION

Though human subcutaneous dirofilariasis is a rare helminthic disease, the number of cases has been increasing worldwide over the last decade. It is mainly caused by Dirofilaria repens [3]. The usual definitive host of Dirofilaria repens which is mainly responsible for human dirofilariasis is the dog [4]. Mosquitoes in the genera Aedes, Anopheles and Culex are suitable intermediate hosts and vectors. Here fleas, lice and suitable intermediate hosts and vectors. Humans are the dead end of the parasite. Human body is an abnormal environment for the adult worms as the development of the larvae is inhibited by retardation of sexual maturity. Most of infective larvae which enter humans are thought to perish. So microfilaremia will not occur in humans [5]. In most of the cases, only a male or female could be identified. These parasites are usually found dead and degenerated at the time of identification, as it cannot live in the human body [2]. Human Dirofilaria can be classified as pulmonary and extrapulmonary [6]. It can also occur submucosal as in our case.

Southern India is considered endemic for dirofilariasis in India. Among the documented cases of human dirofilariasis in India, most of them had ocular infections [7, 8, 9]. The first case of human subcutaneous dirofilariasis is reported in...
Kerala in Palakkad district in 1999 [10]. The largest series of human subcutaneous dirofilariasis from Kerala, India is done in Ernakulam where 21 cases of dirofilariasis were reported during a period of March 2002 to December 2009. Of which there was only one case reported intraorally in cheek of a female [11]. In Northern Kerala, there was a case of human intraoral dirofilariasis in a farmer which was identified as an adult female Dirofilaria repens in 2011 [12]. Another case of human subcutaneous intraoral nodule in cheek was reported in 2013 from Ernakulam district. Kerala, South India were two live worms were recovered from subcutaneous nodular swelling [13].

Climatic changes favor the development of vector mosquitoes and the larval phase of the nematode in the vector, outdoor human activities and the abundance of microfilaraemic dogs are involved in transmission of Dirofilaria repens in the area. Although all these environmental conditions are seen in Kerala, comparatively the incidence of human dirofilariasis is low. This may be because many of these remain undiagnosed or unpublished. Since there is absence of microfilariae in blood stream of human, medical line of treatment is usually not necessary [11].

As part of the investigations, high resolution ultrasound is the imaging modality of choice, as live motile worms can be visualized in real time [14]. Swollen, detached cuticle with dense inflammatory response around worm confirms it [10]. As in our case, the histopathology report revealed chronic abscess with thick fibrous wall, with cut section of a parasite with hyaline cuticle which resembled Dirofilaria (Figure 4). The history and clinical presentation was also supportive of the presence of the lesion in the particular site with almost 6 months duration. This patient also resides in an endemic coastal area, so Dirofilariasis was considered in the differential diagnosis. The limitations in investigation were lack of high resolution ultrasound which would have demonstrated live worms and the gender determination of the worm were not performed in this particular case.

CONCLUSION

So Dirofilariasis should be considered as a differential diagnosis in cases with patients presenting with non-inflammatory subcutaneous or submucosal nodular lesion especially persons residing in endemic areas. Many of them remain undiagnosed or unpublished. For monitoring the situation in the endemic areas, it is necessary to establish guidelines for preventive measures including mosquito control and effective chemoprophylaxis in animals especially for the abundant stray dogs. Also, there is a need for increased awareness of this infection among clinicians treating this condition, and development of antibody screening system which may improve the patient care and also increase the prevalence rate.

REFERENCES


*Corresponding author: Dr [Capt] Vivek Velayudhan Nair
E-Mail: vivekv@rediffmail.com