



Otorhinolaryngological Manifestations of Visceral Leishmaniasis

¹SIGDEL B., ²BHANDARY S., ³RIJAL S., ⁴GHIMIRE A.

¹Department of ENT, Gandaki Medical College, Pokhara, Nepal.

²Department of ENT.

³Department of Internal Medicine, BP.Koirala Institute of Health, Dharan, Nepal.

⁴Department of ENT, Chitwan Medical College, Bharatpur, Nepal.

ARTICLE INFO

Article No.: 102712156

Type: Research

DOI: 10.15580/GJMS.2012.6.102712156

Submitted: 27/10/2012

Accepted: 01/12/2012

Published: 10/12/2012

***Corresponding Author**

SIGDEL B.

E-mail: brihassig@yahoo.com

Phone: 977-9856030090

ABSTRACT

Background: Leishmaniasis is vector borne disease caused by protozoa. Visceral Leishmaniasis is a major public health problem in Nepal. Different manifestations in otorhinolaryngology includes nasal bleeding, granulomatous mass mucosal ulceration in oral cavity, polypoidal growth in larynx, chronic non-healing painless ulcer, nodule, sensorineural deafness.

Methods: This is a prospective cross sectional study where eighty diagnosed cases of leishmaniasis were included from January 2007 to January 2008. Diagnosis was made by Rk-39 from peripheral smear & LD bodies from bone marrow. Before starting anti-kalaazar treatment, ENT examination and Pure tone audiometry (Amplaid 460, Italian machine) was done and finding noted.

Results: Visceral leishmaniasis occur from age 4 yr to 70 yr. Otolaryngological manifestations found in 47 % of cases. Among them epistaxis was observed in 19 (24%) cases. Hearing loss had 8 (10%) of cases. Laryngeal Leishmaniasis was seen in one patient. Mortality was seen in one patient.

Conclusion: Otolaryngological manifestation of Visceral Leishmaniasis is not uncommon in the patients belonging to endemic area like ours. Epistaxis & hearing loss are common.

Keywords:

Epistaxis, Hearing loss, Visceral Leishmaniasis

BACKGROUND

Leishmaniasis refers to the spectrum of disease caused by *Leishmania* Species, which are protozoa of order kinetoplastida. Clinically Leishmaniasis is divided into three: Visceral (kala-azar), cutaneous and mucosal syndromes. Kala-azar is most commonly caused by *L. donovani*, *L. infantum* and *L. chagasi*.

Visceral Leishmaniasis (VL) is a major public health problem in Nepal. The disease is endemic in twelve terai districts of eastern and southern Nepal. It is estimated that more than 6 million people in Nepal are at risk of leishmania infection.

Different otorhinolaryngological manifestation is seen in Leishmaniasis Chronic non-healing painless ulcer, nodule, papule, impetiginoid lesion, lupoid lesion are seen in face. In nose, serous and crusted rhinorrhoea, nasal obstruction, ulceration, granulomatous lesion, masses and septal perforation are seen.

Mucosal ulceration, whitish red nodular swelling, mass may present in oral cavity and oropharynx. Hoarseness of voice, Polypoidal growths in larynx may occur. There may be regional lymphadenitis and in untreated cases death follows from exhaustion.

Neurologic changes in VL are rarely reported. Burning feet, foot drop, deafness and multiple cranial nerves palsies may occur due to axonal degeneration and demyelination. Deafness is sensory-neural type and hearing may returned to normal after treatment with sodium stibogluconate.

Nepal is ecologically divided into 3 distinct regions: mountain in the north, hilly region in between and the plains (Terai) in the south, bordering India. In the latter, a sub-tropical climate prevails, and it is affected by several tropical diseases. B.P. koirala Institute of Health Sciences (BPKIHS) is a health sciences university, situated in Dharan, Sunsari district, in the Terai region. Its 640-bed teaching hospital serves as a referral hospital for the eastern region of Nepal, and the tropical disease unit is known to the inhabitants of Terai as a specialized kala-azar centre providing free treatment to kala-azar patients. It also attracts a major part of the VL patients from the neighboring districts. Patients usually tend to seek care at BPKIHS after traditional healers or private practitioners have failed to cure their symptoms. Several others consult directly without going to the first line public health facilities.

In spite of the various otorhinolaryngological manifestations cited above, and such burden of kala-azar in eastern terai area of Nepal, no definite study about otorhinolaryngological manifestation has been done till date. Hence considering the above facts, a study was taken up to find out the various otolaryngological manifestation of Visceral Leishmaniasis.

MATERIALS AND METHODS

This study was conducted at Department of Otorhinolaryngology and Head & Neck Surgery, and Department of Internal Medicine in B. P. Koirala Institute of Health Sciences Dharan, Nepal over period of one year from January 2007 to January 2008. It was hospital based Prospective cross sectional study. Ethical approval will be obtained from the ethical committee and Informed consent will be taken from participants prior to the study. Patient was first evaluated in the Department of Internal Medicine with clinical history, clinical examination and routine laboratory investigation for the diagnosis. Diagnosis of VL was made by Rk-39 from peripheral smear & LD bodies from bone marrow or tissue biopsy. Patient already on anti VL treatment, any other established condition /co-morbidities giving rise to similar manifestation, not willing to participate in the study were excluded from the study. Diagnosed eighty cases were subjected to ear,nose and throat evaluation. Findings were noted. No major, active interventions will be carried out other than those required regarding disease evaluation and disease management.

All patients were assessed with pure tone Audiometry (PTA). Air and bone conduction hearing levels was measured by means of pure tone audiometer (Amplaid 460, Italian machine) by a single audiometrician in 500Hz,1000Hz,2000Hz,4000Hz, & 8000Hz. Hearing status was confirmed on the basis of WHO Classification Other appropriate diagnostic test was done as necessary. Data analysis done by SPSS 12.0 version.

RESULT

This study included a total of 80 diagnosed cases of visceral leishmaniasis age ranging from 4-70 years and mean age 29.8 ± 15.1 years. 52 (65%) cases were males. Male to female ratio was 1.85:1.(Table 1).

Table 1: Gender distribution

Gender	No. of cases	%
Male	52	65
Female	28	35
Total	80	100

Nasal bleeding was most common manifestation, which was found in 19(24%) cases. Hearing loss was 2nd most common by 8(10%) of cases. Oral presentations were sore throat in 3 cases & gum bleeding in 2 cases. One case presented with right

neck hematoma which was died due to severe bleeding. Two patients had laryngeal manifestation, of them one had laryngitis and other had laryngeal mass which presented with stridor. (Table 2)

Table 2

ENT Symptoms/sign	No of cases	(%)
Episaxis	19	24
Hearing loss	8	10
Sore throat	3	4
Gum bleed	2	3
macule	2	3
stridor	1	1
laryngitis	1	1
Hematoma of neck	1	1
Total	37	47

Unilateral bleeding was seen in 11(58%) cases, whereas bilateral bleeding was seen in 8(42%) of cases.(Table 3)

Table 3: Site of Epistaxis

laterality	No. of cases	Percent (%)
Unilateral nostril	11	58
Bilateral nostril	8	42
Total	19	100

During Pure Tone Audiometry evaluation, 34 (43%) cases had sensorineural type of hearing loss. (Table 4)

Table 4: Pure tone audiometry finding

Finding	No. of cases	Percent (%)
Normal	46	57
SNHL	34	43
Total	80	100

DISCUSSION

Leishmaniasis is caused by infection with parasites of the genus *Leishmania*. Leishmaniasis is not a single disease but a 'variety of syndromes' that are complex and cosmopolitan. Visceral Leishmaniasis caused by

L. Donovanii which is endemic in eastern terai of Nepal.¹⁰ Of 80 cases, (65%) cases were males. Male to female ratio was 1.85:1. Male were predominant than women. Similar finding was observed in other study from Nepal and Bangladesh. Male predominant may be due to male dominance society of Nepal, more

health care given to male child than female and male seek hospital earlier than female.

Prevalence of epistaxis in Visceral leishmaniasis patient around 47-88%. In our study value was only 24%. It may be due to the fact that our study included patients admitted only in BPKIHS. Bilateral bleeding occur in 11 (58%) of cases while unilateral in 8 (42%). There was no specific pattern of bleeding as most of the cases had diffuse mucosal bleed. The pathogenesis of Epistaxis occurring in early phase of disease, is not understood; but occurring late in the disease is probably due to a combination of deficient clotting factor and thrombocytopenia. Pure tone Audiometry showed 34 (43%) had sensorineural hearing loss in this study, though 4.5% patient had sensorineural deafness. Variation of result could be due the fact that Audiometry was done routinely in all patients even without complain of hearing loss.

One 23/M had neck hematoma with nasal bleeding. Incision and drainage was done for neck hematoma. In spite of blood transfusion, patient died due to excessive uncontrollable bleeding.

Two patients presented with laryngeal symptoms. One had laryngitis who later improved after medication. Other 70/M presented had hoarseness for 3 months & noisy respiration for 5 days. Emergency Tracheostomy was done to relieve stridor. DL biopsy was inconclusive twice. Endoscopic biopsy showed granulation tissue with lymphocytic infiltrates and numerous LD bodies. Patient improved with Amphotericin B. This was the first case of laryngeal leishmaniasis reported from Nepal in our knowledge. A case of Primary laryngeal leishmaniasis reported from Italy in 1964 and India in 2007.

CONCLUSION

Otorhinolaryngological manifestation of Visceral Leishmaniasis is not uncommon in the patients belonging to endemic area like ours. Epistaxis & hearing loss are common presentations. Further studies with larger series of case and follow up need to be taken into consideration.

REFERENCES

Koirala S, Parija SC, Karki P et al. (1998). Knowledge, attitude, and practices about kala azar and its sandfly vector in rural community of Nepal. *Bull World Health Organization*; 76:485-490.

Bern C, Joshi AB, Jha SN et al. (2000). Factors associated with visceral leishmaniasis in Nepal

: Bet-net use is strongly protective: *Am J Trop Med Hyg*; 63:184-188.

Richard D, Pearson, Anastacio DE et al. (2000). *Leishmania: Species: Visceral (kala-azar, Cutaneous, and Mucosal) Leishmaniasis*; ed Gerald L. Mandell, John E. Bennet, Raphael Dolin *Principles and Practice of Infectious Disease*. vol(2). 5th ed. ed Churchill Livingstone; 2828-2842.

Patuano E, Carrat X, Drouet Y et al. (1993). Mucocutaneous leishmaniasis in Otorhinolaryngology. *Ann Otolaryngol Chir Cervicofac*; 110(7): 415-9.

Vellin JF, Mougeot GK, Emeny JL et al. (2005). Nasal Leishmaniasis: a case report *Ann Otolaryngol Chir Cervicofac*; 122(2):100-4.

Weir N, Golding-wood D.G. (1997). Infective rhinitis and sinusitis. Mackay & Bull ed *Textbook of Scott-Brown's otolaryngology*, 6th ed. Butterworth and Heinemann, Oxford; 4:30-44.

Hasmim FA, Ali MS, Ahmed AE El-Hassan M, et al. (1995). Neurological change in visceral leishmaniasis. *American Journal of Tropical Medicine, and Hygiene*. ;52:149-154.

World Health Organization (WHO), (1980). International classification of impairments, disabilities, and handicaps; *Hearing Loss: Terminology and Classification* New York: 25-43.

Bryceson A.D.M.; *Leishmaniasis*; ed; Gordon Cook (1996). *Manson's Tropical Diseases*. 20th ed. ed W.B. Saunders oval Road London ;2:1212-1243.

Karki P, Koirala S, Parija SC et al (1998). Thirty day course of sodium stibogluconate for treatment of kala-azar in Nepal. *The southwest Asian Journal of Tropical Medicine and Public Health*; 29(1):1562-158.

Sarkar CB, Chaudary KS, Siddiqui NI et al (2003). Clinical profile of kala azar in adults as seen in Mymensingh, Bangladesh. *Bangladesh Medical Journal*; 12 (1) :41-44.

Zijlstra EE, El-Hassan AM (2001). Visceral leishmaniasis in Sudan. *Transactions of the Royal society of Tropical Medicine and Hygiene*, 95 supplement 1, S1/27-s1/58.

Zijlstra, EE, Siddig Ali, El Hassan AM, El-Toum IA, Satti M Ghalib HW, Sondorp E & Winkler A. Kala-azar is displaced people from southern Sudan: Epidemiological, clinical & therapeutic findings. *Transactions of the Royal society of Tropical Medicine and Hygiene* 1991a; 85:365-369.

D Anna M, Jemma S. Clinically primary laryngeal leishmaniasis. *Arch Ital Laryngol*. 1964 Nov-Dec; 72:385-94.

Mathur SR, Ray R, Handa KK. Isolated laryngeal leishmaniasis in an immunocompetent patient in India. *Trop Doct*. 2006 Jan; 36(1):55-6.