

Diagnosis of Visceral Leishmaniasis by Fine Needle Aspiration Cytology of an Isolated Cervical Lymph Node: Case Report

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ABSTRACT

A 61-year-old woman presented with an isolated, painless, slightly enlarged right laterocervical lymph node without any other signs and symptoms of disease. Laboratory test including hematological and biochemical parameters were normal. A cervical ultrasonography demonstrated one lymph node (10 mm) on the right laterocervical side and one small reactive lymph node on the left laterocervical side. The fine needle aspiration (FNA) smears revealed a polymorphic population of cells composed of lymphocytes, histiocytes, epithelioid cells, plasma cell, tingible body macrophages and macrophages infiltrated with *Leishmania amastigotes*. Treatment was initiated with *Stibogluconat Na* (*Pentostam*) and led to a full recovery.

Key words: visceral leishmaniasis, leishmaniasis infantum, kala azar, localized lymphadenopathy, fine needle aspiration

Introduction

Leishmaniasis is a parasitic infection caused by the obligate intracellular protozoa *Leishmania* and is transmitted by the bite of the sand fly¹. Several clinical syndromes are categorized under the term leishmaniasis: visceral, cutaneous, and mucosal leishmaniasis, which result from replication of the parasite in macrophages of the mononuclear phagocyte system, dermis, and naso-oro-pharyngeal mucosa². The different clinical forms of leishmaniasis are the result of infection by different species of the parasite¹ and of the immune response of the host³. Factors increasing the risk of clinical development of the disease include malnutrition, immunosuppression, and most importantly, HIV infection⁴. Visceral leishmaniasis (VL), fatal if left untreated, is typically caused by *Leishmania donovani*, *Leishmania infantum* and *Leishmania chagasi* (synonymous to *Leishmania infantum*). VL due to *L. infantum* is a zoonosis in which dogs are the main reservoirs¹. It is endemic in areas of the tropics, subtropics, and southern Europe². Endemic regions in Croatia include middle and southern Dalmatia, but the

disease remains sporadic⁵. All sporadic cases diagnosed in individuals from northern coastal or inland counties have been always associated to stay in southern littoral⁶.

We describe a rare case of an isolated cervical lymph node enlargement due to leishmanial infection without any cutaneous or systemic manifestations, presented in patient from Split, Dalmatia County.

Case Report

A 61-year-old woman presented to the otorhinolaryngology outpatient department with an indolent right laterocervical lymph node enlargement of 3 month duration (Figure 1). She was recommended for fine needle aspiration (FNA) analysis at the department of cytology. The FNA smears revealed a polymorphic population of cells composed of lymphocytes, histiocytes, epithelioid cells, tingible body macrophages and macrophages infiltrated with *Leishmania amastigotes* (Figure 2). Diagno-



Fig. 1. Female patient with enlarged lymph node on the right laterocervical side (encircled).

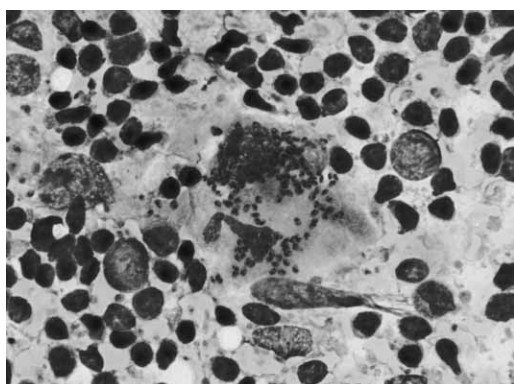


Fig. 2. Macrophages filled with *leishmania amastigotes* (May-Grünwald-Giemsa cytochemical staining).

sis of visceral leishmaniasis was established and afterward the patient was admitted to the Department of Infectious Disease. Patient disease history data showed that 3 months beforehand, she had noticed enlarged lymph node and had 2 days history of fever, cough and headache. The source of infection was not clear.

Apart from the isolated lymphadenopathy, the physical examination were unremarkable. No skin abnormalities indicative of current or healed cutaneous lesions were detected⁷. A cervical ultrasonography demonstrated one lymph node (10 mm) on the right laterocervical side and one small reactive lymph node on the left laterocervical side (Figure 3), while an abdominal ultrasonography were unremarkable. Due to a lack of any signs or symptoms indicative of systemic disease, further invasive investigations such as bone marrow aspirate were not done.

The initial laboratory test showed following results: erythrocyte sedimentation rate (ESR) 10 mm/h, white blood cell (WBC) $4.95 \times 10^9/L$ with 65% neutrophils, 30% lymphocytes and 5% monocytes, red blood cell (RBC) $4.1 \times 10^{12}/L$, hematocrit (Hct) 0.37%, hemoglobin (Hgb) 125 g/L and platelets $210 \times 10^9/L$. Biochemical parameters: aspartate aminotransferase (AST) 28, alanin aminotransferase (ALT) 22, g glutamil transferase (gGT) 13, lac-

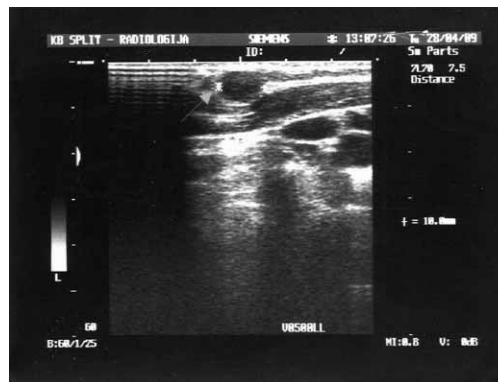


Fig. 3. Ultrasound picture of right laterocervical side node (arrow).

tate dehydrogenase (LDH) 220, AP 78 (all in U/L), glucose (GUK) 5.1 mmol/L and bilirubin 11.5 $\mu\text{mol}/L$. Immunofluorescence antibody test (*Leishmania donovani*): IgG <1:40.

Treatment was initiated with stiboglukonat (Pentostam). 24 days therapy of 8.5 ml intramuscularly administered dose led to prompt and full recovery of the patient.

Discussion

Visceral leishmaniasis (VL) is endemic in many parts of the world. An increased incidence of the disease has been reported during the past decade in many Mediterranean countries where the disease is endemic. Human and canine leishmaniasis has been reported in southern coastal Croatia since 1931. However, we are now concerned about an apparent increase in the incidence of visceral leishmaniasis in southern Croatia⁸. A total of 124 cases of visceral and cutaneous leishmaniasis were reported from 1954 until 2006. During the 1994–2006 period, 35 people become infected: 23 with visceral and 12 with the cutaneous form of the disease⁹.

VL is a chronic infectious disease of the monocyte-macrophage system. Diagnosis relies on visualising parasites in tissue or serology; culture and detection of parasite DNA are useful in the laboratory¹⁰. Commonly, patients with VL present with fever, abdominal pain, splenomegaly, hepatomegaly, cachexia and pancytopenia⁴. When the disease is presented with all of these symptoms, diagnosis is not so hard to establish.

But rarely, such is in our case, the only sign and the symptom of the disease is cervical lymph node enlargement. Large spectrum of diseases are included in the differential diagnosis of cervical lymph node enlargement. Leishmaniasis is just one of them, but since it is rare we were surprised to find, after FNA lymph node specimen, a large number of macrophages infiltrated with leishmanias amastigotes (Figure 2). There have been cases similar to this one described in literature^{11,12}, but this is the first described case of cervical VL diagnosed only by FNA cytology in Croatia. It is particularly interesting because there were no other typical clinical, laboratory or radio-

logical symptoms and signs of disease so FNA cytology was not only the first but also a definitive diagnostic method.

Conclusion

Although localized leishmania lymphadenitis is an uncommon cause of lymphadenopathy, it should be considered in the differential diagnosis of patients presenting with enlargement of a single lymph node, especially

where leishmaniasis is endemic, such as in our Split-Dalmatia County.

FNA cytology is a diagnostic tool scarcely known to the vast number of practising clinicians. It is an atraumatic, quick, cheap and reliable procedure that is acceptable to the patients, and should always be considered as a method of choice in lymph node enlargement.

Demonstration of amastigotes on FNA smears helps with the early diagnosis of VL.

REFERENCES

- MARTIN-SANCHEZ J, NAVARRO-MARI JM, PASQUAU-LIAÑO J, SALOMÓN OD, MARILLAS-MÁRQUEZÁ F, BMC Infect Dis, 4 (2004) 4. — 2. HERWALDT BL, Lancet, 354 (1999) 1191. — 3. GREVELINK SA, LERNER GA, J Am Acad Dermatol, 34 (1996) 257. — 4. REUS M, GARCIA B, VAZQUEZ V, MORALES D, FUSTER MAND SOLA J, Br J Radiol, 78 (2005) 158. — 5. SEVER-PREBILIĆ M, PREBILIĆ I, SEILI-BEKAFIGO I, DOKIĆ S, IVANIS N, NACINOVIĆ-DULETIĆ A, VOJNKOVIĆ B, Coll Antropol, 26 (2002) 545. — 6. BOSNIĆ S, GRADONI L, KHOURY C, MAROLI M, Acta Trop, 99 (2006) 42. — 7. HARMS G, ZENK J, MARTIN S, KOKOZIDOU M, PÜSCHEL W, BIENZLE U, SEIT HM, Infection, 29 (2001) 355. — 8. PUNDA-POLIĆ V, SARDELIĆ S, BRADARIĆ N, Lancet, 351 (1998) 188. — 9. MULIĆ R, CUSTOVIĆ A, ROPAC D, TRIPKOVIĆ I, STOJANOVIĆ D, KLISMANIĆ Z, Mil Med, 174 (2009) 206. — 10. MURRAY HW, BERMAN JD, DAVIES ER, SARAVIA NG, Lancet, 366 (2005) 1561. — 11. GARCIA-GONZALES R, SANZ I, SAUS C, COLLEJA JL, Postgrad Med J, 66 (1990) 326. — 12. TALLADA N, RAVENTÓS A, MARTINEZ S, COMPAÑÓ C, ALMIRANTE B, Diagn Cytopathol, 9 (1993) 673.

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CITOLOŠKA DIJAGNOZA VISCERALNE LIŠMENIJAZE NA IZOLIRANOM CERVIKALNOM LIMFNOM ČVORU: PRIKAZ SLUČAJA

SAŽETAK

61 godišnja pacijentica se javila zbog izoliranog, lagano uvećanog, bezbolnog limfnog čvora na desnoj strani vrata, bez drugih znakova i simptoma bolesti. Laboratorijski testovi, uključujući hematološke i biokemijske parametre su bili uredni. UZ vrata je pokazao jedan limfni čvor na desnoj strani vrata (10 mm) i jedan manji reaktivni limfni čvor na lijevoj strani vrata. Citološkom analizom materijala našla se polimorfna populacija limfocita, histiocita, epiteloidnih stanica, plazma stanica, »tingible body« makrofaga te makrofaga ispunjenih amastigotima lišmenije. Liječenje sa stibogluconat Na (Pentostam) je dovelo do potpunog oporavka.