VISCERAL LEISHMANIASIS IN A SIX MONTH OLD CHILD: IS CONGENITAL TRANSMISSION OF DISEASE POSSIBLE?

Pages with reference to book, From 191 To 193

Mohammad Abdur Rab, Mohammad Tariq Mahmood (National Institute of Health, Children Hospital, Medical College, Rawalpindi.)
Dhani Bux, Mumtaz Hassan (Pakistan Institute of Medical Sciences, Islamabad.)
Khalid Hassan (Department of Pathology, Rawalpindi Medical College, Rawalpindi.)

Infantile kalaazar is a sppradic disea.se and occurs in many countries of the Mediterranean region, Middle East and China. The causative organism of this disease is L. infanturn and is primarily a zoonosis, occurring in dogs and other wild carnivores which serve as reservoir. Transmission of leishmaniasis occurs by the bite of the female phiebotomine sandfiies and although numerous species are found in endemic areas, only a few have so far been proven as vectors. Pb.alexandri in China, Ph.rnartini in the Sudan and Ph.argentepes in India are the confirmed vectors of L. donovani infections. For L. infanturn infections, Ph.ariasi, Pb.perfeliewi and Pb.perniciosus have thus far been incriminated[1].

First reports of visceral leishmaniasis from Pakistan came in the early sixties[2,3]. Cases mostly children, were described from the valleys of Gilgit and Skurdu situated at a height between 7500 to 8500 feet above sea level. Later studies revealed that the disease was also present in Kashmir and its adjoining regions[4]. The disease is sporadic and clinically resembles the Mediterranean type of visceral leishmaniasis. In at least one isolate obtained from bone marrow of a 2 year old male child from Murree hills the organism was typed as L.infantum s.s. by isoenzyme characterization[5]. Different species of sandifies exist not only in this area[3], but are also found in the neighbouring areas of Kashmir valley[6]. The disease affects mainly children although adults are not entirely immune. In north-west China 95% of cases were children below the age of 10 years[7] and those reported in Pakistan have all been above one year,although the disease does occur occasionally in younger children. We describe a case of 6 month old boy from Bagh in Azad Jammu and Kashmir.

CASE REPORT

A six month old male child was admitted in the hospital with complaints of irregular high grade fever and cough for about a fortnight. Three days prior to admission he developed generalized purpuric rash all over the body. He had severe bleeding tendency especially from puncture sites. He was the first issue of his parents and was immunized upto date. On physical examination he was febrile and pale, with liver enlargement of 3 cm below right costa! margin and a big spleen 5.5 cm below left costal margin. There was no lymphadenopathy, and auscultation of chest revealed occasional scattered crepitations bilaterally. A provisional diagnosis of sep.. ticemia/DIC was made.

Laboratory investigations revealed a total white cell count of 3.7x109/l, with 36% neutrophils and 64% lymphocytes. Total red cell count was 3.7x1012/l, haemoglobin 10.5g/dl, PCV 0.3051/1, MCV 82.7f1, MCH 28.5pg and MCHC 34,4g/dl. The platelet count was 23x109/l and his bleeding and clotting times were measured as 10 and 6 minutes respectively. Although his serum albumin: globulin ratio was reversed, the serum immunoglobulins were within normal limits. Bone marrow examination revealed moderate depression of all the normal cell lines, with slight increase in the number of histiocytes. Scanty amstigote forms, mostly extracellular were seen. Aspirate from bone marrow was also inocu-

lated on NNN medium and leishmania promastigotes were grown after 11 days.
The child was treated with sodium stibogluconate (pentostam), 20 mg/kg intramuscular, once daily for thirty days. During his hospital stay the patient developed series of complications such as bronchopneumonia,
gastroenteritis, epistaxis and bleeding from puncture sites. He was managed with intravenous broad spectrum antibiotics, intravenous fluids, blood and platelet infusions and nasogastric feeding. He finally made a full recovery and was discharged from the hospital after a stay of 44 days.

DISCUSSION

Infantile visceral leishmaniasis may be of insidious or acute onset with irregular febrile episodes, anaemia, cachexia, hepatic and splenic enlargement .as main symptoms. Malnourished children are more prone to acquire active infection[8] Majority of the cases reported from the northern areas of Pakistan are under the age of 10 years[3], although in the wilderness of northwestern China almost 90% of the diseased children are under'2 years[7]. The incubation period of this disease averages between 3-5 months, although it can vary and be very long. In two cases following voluntary inoculation of promastigotes isolated from dogs, the incubation period was 3.5 and 5 mnths respectively[7]. The same was observed in two cases who acquired their infection through blood transfusion[9]. Experimental infection in volunteer following bites of infected sandfly is reported to occur between 134 to 166 days[10].
Congenital transmission of disease was first suspected in 1926[11], but no clear evidence of this is documented. Napier and Das Gupta reported infection in a new born child where the incubation period was clearly under 3 months[12]. Two children in China developed disease at the age of 3 and 3.5 months7. Another report describes the disease in a four month old child born prematurely in Kenya who was sick from the sixth day of his life[13]. It has been postulated that the mode of infection the baby can be (i) direct transmission from mother to offspring, or (ii) acquired at the time of birth from perineal hemorrhages with swallowing of maternal blood or secretions or through abraded skin. This case report describes the youngest victim of infantile kala-azar in Pakistan thus far reported. The mother of the child was healthy before and during her pregnancy and at no time complained of symptoms suggestive of visceral leishmaniasis. She was negative for anti-leishmania antibodies when tested by indirect fluorescent antibody technique. In this case the infection was probably acquired postnatally.

ACKNOWLEDGEMENTS

The authors wish to thank Dr. David A. Evans, Department of Medical Parasitology, London School of Hygiene and Tropical Medicine, for providing guidance and training in culture and isolation techniques of leishmania parasites.

REFERENCES

1. Killick-Kendrick,R. Phlebotomine vectors of the leishmaniasis: a review. Med. Veteri. nary Entomol., 1990; 4:1.
2. Ahmed,N., Burney,M.I. and Wazir,Y.A preliminary report on the studyof Kala-Azar in Baltistan (West Pakistan). Pakistan Armed Forces Med.)., 1960; 10:1.
3. Ahmed, N. and Burney,M.L Leishmaniasis in Northern areas of Pakistan (Baltistan). Pakistan Armed

Forces Med. 3., 1962; 12:1.
4. Saleem,M., Anwar.C.M. and Malik,LA. Visceral leishmaniasis in children, a new focus in Azad Kashmir. JPMA., 1986; 36:230.
5. Rah,M.A., Iqbal,J.,Azmi,F.H.,Munir,M.A. and Saleem, M. Visceral leishmaniasis. A seroepidemiological study of 289 children from endemic foci in Azad Jammu and Kashmir by indirect fluorescernantibody technique.JPMA., 1989; 39:225.
6. Jacob, V.P. and Kalra, S.L Kala-azar in Kashmir. Indian J.Med.Res., 1951; 39:323.
7. Chung,H.L. and Chang,N.C. Studies on leishmaniasis in China. Historical background, epidemiology, clinical aspect, legislature and control program. Chin. Med.J., 1986: 99:281.
8. Cerf,B.G., Jones, T.C., Badaro,R, Sampio,D., Texiera,R. and Johnson, W.D.Jr. Malnutrition is a risk factor for severe visceral leishmaniasis. J.lnfecti. Dis., 1987: 156:1030.
9. Chung,H.L, Chow,H. and Lu. J.F. The first two cases of transfusion, Kala-azar. Chin. Med. 3., 1948; 116:325.
10. Swamynath,C.S., Shol,H.E and Anderson,LA.P. Transmission of Indian Kala-aztr by bites ofPh.argentipes. Indian). Med. Res., 1942; 30:473.
11. Low,G,.C. and Cooke. W.A. Congenital caseof Kala Azar. Lancet, 1926; 2:1209,
12. Napier,L.E. and Das Gupta.C.R. Indian kala-azar ins new born. Indian Med. Gazette, 1928; 62:199.
13. Nyakundi,P.M.. Muigui,R.. Were, J.B.O Oster,C.N., Gachihi, OS. and Kirigi, J. Congenital visceral leishmaniasis: case report. Trans. R. Soc. Trop. Med. Hyg., 1988; 82:564.