Visceral leishmaniasis misdiagnosed as probable acute lymphoblastic leukaemia

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INTRODUCTION

This article reports a case of visceral leishmaniasis misdiagnosed as probable acute lymphoblastic leukaemia in a 4-year-old girl. Despite reports in the literature highlighting pitfalls in the diagnosis of acute lymphoblastic leukaemia (Chessells, 2001) errors continue to be made, in this case resulting in transfer from the local hospital, delayed treatment and considerable parental anxiety.

CASE REPORT

A 4-year old girl was transferred from a local district general hospital with a presumptive diagnosis of acute lymphoblastic leukaemia. She had been referred with coryzal symptoms and recurrent epistaxes for 6 months. Her parents had noticed pallor, lethargy and anorexia.

Clinical examination revealed fever, widespread lymphadenopathy and splenomegaly of 10–12 cm. Investigations performed at the district general hospital showed a pancytopenia with a haemoglobin level of 5.4 g/dl, white cell count 3.1×10^9/litre (neutrophils 0.2×10^9/litre) and platelets 57×10^9/litre. The blood film was said to show occasional blasts. The diagnosis of probable acute lymphoblastic leukaemia was discussed with her parents and the patient was transferred to the authors' hospital for further investigation and treatment. Following transfer, the patient was reassessed. The massive splenomegaly was thought to be atypical of acute lymphoblastic leukaemia. Bone marrow aspirate and trephine biopsy showed numerous Leishman–Donovan bodies (amastigotes) present (*Figure 1*). There was no evidence of leukaemia and a revised diagnosis of visceral leishmaniasis was made.

Enquiry regarding foreign travel revealed that the family own a house in Spain, their last visit being 6 months before presentation. Liposomal amphotericin B was commenced. *Leishmania* serology was strongly positive and serum immunoglobulins showed a characteristic marked polyclonal increase in immunoglobulin G of 46 g/litre (normal range 4.9–16.1 g/litre).

Serology for cytomegalovirus and human immunodeficiency virus was negative. The blood count gradually normalized and the spleen became impalpable over the next 2 months. *Table 1* summarizes her progress. She remains well 8 months following treatment.

TABLE 1.
Pattern of improvement in haematological parameters

	Spleen	Haemoglobin	White cells	Neutrophils	Platelets
Initial	11 cm	5.4 g/litre	3.1	0.2	37
Day 10	7 cm	9.0 g/litre	3.1	0.3	74
Day 17	4 cm	9.5 g/litre	7.3	0.9	222
Day 31	1 cm	10.0 g/litre	5.5	1.3	167

DISCUSSION

Visceral leishmaniasis is one of three clinical syndromes caused by *Leishmania* spp. Visceral leishmaniasis, or kala-azar, is most commonly caused by *L. donovani* and *L. infantum*, affecting 400 000 people worldwide annually, with children and the immunocompromised at increased risk. The vector is the sandfly, with stray dogs and rodents often acting as reservoirs (Pearson et al, 2000). The parasite infects cells of the reticuloendothelial system, characteristically presenting with fever, anorexia, marked splenomegaly, hepatomegaly and pancytopenia, mimicking the clinical findings in leukaemia.

The incubation period may be very prolonged, varying from 2 weeks to 10 years following exposure. Diagnosis is by bone marrow aspirate and trephine biopsy, demonstrating the typical amastigotes in macrophages, and confirmed by the demonstration of antibodies to the leishmania parasite. There should be little delay in arriving at the correct diagnosis from the bone marrow findings.

Although traditionally considered a tropical disease, there are areas around the Mediterranean, including Spain, where the disease is endemic. With increased tourism to the Mediterranean region, the incidence of imported cases of visceral leishmaniasis in Northern Europe is increasing (Smith et al, 1995). If this possibility is not considered, and in particular, if no adequate travel history is taken, the correct diagnosis may be missed, delaying appropriate treatment (Chessells, 2001).

Although presentation was typical of visceral leishmaniasis occurring in an endemic region, the diagnosis was less straightforward out of that setting. No travel history was taken initially in this case, but in all cases a detailed travel record is necessary since an enquiry

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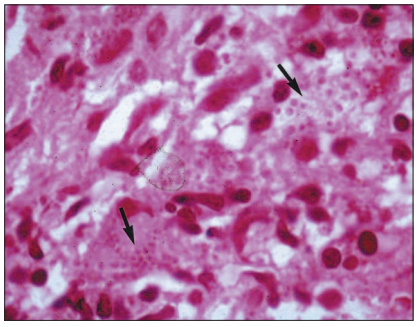
regarding 'recent' travel is inadequate for a condition which potentially has a very long incubation period. If, as in this case, the family has a holiday home, they may not even consider visiting it as foreign travel (Grech et al, 2000; Révész et al, 2001). An additional point is the importance of critical assessment of signs and symptoms when a patient is transferred with a 'diagnostic label' from another hospital, this patient being atypical for a provisional diagnosis of acute lymphoblastic leukaemia since she had massive splenomegaly.

Figure 1. Bone marrow trephine showing Leishman–Donovan bodies (arrowed).



CONCLUSION

Although the diagnosis of acute lymphoblastic leukaemia was not sustained for long in this case, the patient and her family would have been spared the distress of interhospital transfer, repeat procedures and the anxiety of being advised of a probable malignant disorder in a 4-year-old child. The diagnosis should be considered in a child or adult presenting with pancytopenia, especially if the spleen size is large. The case also illustrates the importance of taking a detailed travel history. HM

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IN THE PUBLIC'S VIEW...

Not encouraging change, enforcing it

Peter Homa, chief executive of CHI (Commission for Health Improvement) and latterly of CHAI (Commission for Healthcare Audit and Inspection), has resigned. The story made only the inside pages of the broadsheets, but should give us pause.

In the slew of bodies and authorities set up by the government to wrest control of health care once and for all from the incompetent doctors who persist in thinking they know better, CHI was one that seemed genuinely to be helpful to frontline staff. This was largely because Peter Homa and his team knew how to get the best out of people: don't be judgmental, help them to realize their deficiencies and problems, give them advice and encouragement to enable improvements.

Sure, when CHI (originally and foolishly CHIMP, but sensibly the MP was dropped) was first announced it was unclear what it would do and how. It was an example of what Michael Loughlin describes as 'the buzzword approach to management', in which the classic tactic is to 'operationalise before you conceptualise'. This leaves staff frightened of what might happen if they don't comply, and bemused because they don't actually know how to. There's never anyone brave enough to tell those in charge that the schemes won't work and are largely a distraction from real problems. The staff wrestle with the platitudinous outpourings from above ('we must have strong leadership and a no-blame culture') and devise ways of trying to make it work.

CHI did just that, and despite some early reports that got it wrong, they really did seem to have a way of working that was appreciated by the hospitals they visited. Yes, CHI visits were stressful and time-consuming, but the visitors learned how to get the best from the hospitals they visited and there was a feeling among staff that real problems were at last being recognized.

This was not what Alan Milburn had in mind. CHI was clearly going native. You might think that 3 years, in the 55-year history of the NHS, was barely time to get a complicated body such as CHI up and running. Not in the short-term view of a Secretary of State with a mission. A few months ago, CHI mutated to CHAI – again without any explicit description of how it would operate, but with the avowed intention of introducing what Milburn has intended all along. He doesn't want a CHI that will help hospitals get along; he wants a CHAI that wields a big stick when hospitals, clinics and staff don't do what the centre wants them to do.

To give CHAI some force, Milburn appointed Professor Sir Ian Kennedy to be its new chair. The given reason for Peter Homa's stepping down is that he and Kennedy cannot work together. Kennedy chaired the Bristol heart inquiry. His report was thorough and – rightly – critical, and impressed Milburn, but its nearly 300 recommendations are unrealistic. It took just 3 weeks for Homa to find he couldn't work with Kennedy, and it is Homa who has gone.

According to the *Guardian*'s report (12 April), Milburn wants CHAI to be more like Ofsted. We've got a lot to look forward to. HM

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