CASE REPORT

A ghost covered in lice: a case of severe blood loss with long-standing heavy pediculosis capitis infestation

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SUMMARY

An 11-year-old child presented with poor school attendance, and signs and symptoms of severe anaemia. He was heavily covered in lice. He was investigated for other causes of anaemia. Following treatment for head lice and also iron supplementation, he was back in full-time education. This case highlights the link between head lice (pediculosis capitis) infestation and iron-deficiency anaemia.

BACKGROUND

Pediculosis capitis (head lice) is common in the paediatric population, affecting up to 1/3 of children in the UK.¹ There have been documented cases of head lice infestation associated with iron-deficiency anaemia. A search on MEDLINE and EMBASE revealed only a handful of cases of severe lice infestation with anaemia in humans. We present another case of a child brought to our attention with the two associations and the importance of early recognition and treatment to prevent adverse effects on health and schooling.

CASE PRESENTATION

An 11-year-old child had undergone multiple attendances to the general practitioner with illness and he also had poor school attendance. He was referred into the acute assessment unit following a child protection meeting. He is an only child and had been requiring extra help at school. He lived in a basement flat with his parents who were both unemployed. His mother has learning disabilities and his father has mental health problems. In the preceding 3 months, his family was receiving input from the school nurse regarding head lice management and nutrition. As he became more unwell, the child spent more time indoors and the week prior to presentation at the hospital he had been unable to attend school.

On presentation, the child was noted to be extremely pale, dirty and thin. His head and body were covered in lice. He was weak, unable to walk unsupported and reported of feeling lightheaded. His heart rate was 127 bpm and his blood pressure was 90/50 mm Hg. A grade 2/6 systolic murmur was present. His height and weight were both on the 9th centile on the growth chart, and stable compared to previous recordings. There was no history of gastrointestinal or other source of bleeding.

INVESTIGATIONS

The child's blood test revealed a haemoglobin level of 4.2 g/dL with a mean cell volume of 61.8 fL. Serum iron was <1.8 µmol/L and ferritin was 2 ng/mL. His serum 25-OH vitamin D level was <8 nmol/L. Faecal occult blood and coeliac screen were negative.

TREATMENT

During his 6 days of admission, the child was treated with dimeticone (Hedrin 4% lotion) and given an intramuscular dose of vitamin D. Following discussion with the consultant haematologist, in view of the child's symptomatic anaemia, a decision was made to raise his haemoglobin to 7 g/dL. He received 250 mL of packed red cells, which was transfused over 4 h.

OUTCOME AND FOLLOW-UP

Post-transfusion, the child's haemoglobin improved to 8.9 g/dL. He was discharged home on oral sodium feredetate (5 mg/kg/day three times a day, which he received for 5 months) and followed up in clinic. His haemoglobin normalised to 12.4 g/dL 6 weeks later. A year on he is doing well, is lice free, in full-time education and is off iron supplementation. This was achieved through extensive support from the school nurse to the family given his social circumstances.

DISCUSSION

The cause of the child's anaemia cannot be solely attributed to dietary insufficiency. Although malnutrition is a known cause of iron deficiency, anaemia, in this case, the child's home circumstances and diet had not changed during his primary school years. It was following chronic head lice infestation that his health deteriorated. As a result, he spent more time indoors and lack of sunlight exposure due to this would have contributed to his vitamin D deficiency.

Looking at the association between head lice and anaemia, Speare *et al*² conducted a study to quantify the blood intake of head lice by weighing individual louse before and after a meal. They estimated that with heavy infestation, blood loss of 0.7 mL/day or 20.8 mL/month could potentially occur and concluded that heavy infections with head lice could contribute to iron-deficiency anaemia. One American study in an adult emergency department looked retrospectively at admissions involving lice infestation and severe anaemia

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Learning points

- ▶ Pediculosis capitis and iron-deficiency anaemia are common in childhood.
- ▶ The possibility of iron-deficiency anaemia should be considered in children with recurrent/prolonged/severe lice infestation.
- ▶ Chronic lice infestation and anaemia can cause a significant negative impact on a child's health and education.

(<6 g/dL) over 4 years.³ The resulting six patients were all homeless, had documented or reported lice infection and no symptoms of gastrointestinal or other blood loss. Investigations including upper and lower endoscopies were carried out but failed to find a significant cause for the iron-deficiency anaemia in these patients. No studies have been performed in children but two case reports and a poster presentation have described this phenomenon.^{1 4 5} Investigations made in these cases for the severe anaemia concluded that lice infestation was the cause.

Guss *et al*³ noted that their search only looked into severe anaemia and not mild/moderate anaemia, in which case the

number of affected individuals may be higher. Also, as blood tests are not routinely performed on patients infected with lice, the actual prevalence of anaemia in lice infestation may be higher.³ Given this association, in cases of prolonged or recurrent pediculosis, performing a full blood count or starting iron supplementation should be taken into consideration.

Contributors NM-I informed VH of this case.

Competing interests None.

Patient consent Obtained.

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