

Trichuris Dysentery Syndrome: Evidence that it may be Underdiagnosed in Kelantan

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Summary

The prevalence rate of trichuriasis in children in certain areas of Kelantan is high. However the *Trichuris* Dysentery Syndrome (TDS), a condition in children characterized by chronic diarrhoea, stunting and anaemia is said to be rare. A recent change in policy at our institution to lower the threshold for undertaking colonoscopy in children with chronic diarrhoea resulted in the detection of 6 cases of TDS in less than a year. The median age was 7 years (range 3-13) and the median duration of symptoms before diagnosis was 2 years (range 1-8). The insidious nature of TDS and the low level of awareness of this condition even among health care workers may result in considerable underdiagnosis.

Key Words: Trichuris Dysentery Syndrome, Kelantan, Malaysia

Introduction

The geohelminth *Trichuris trichiuria* is estimated to infect more than 1,000 million people worldwide¹. The prevalence rates in certain communities in Malaysia are as high as 70%-90% in children of primary school going age^{2,3}. Heavy infection can lead to the *Trichuris* Dysentery Syndrome (TDS), an entity characterised by chronic dysentery, growth stunting and anaemia⁴. Although trichiuriosis is very common in certain communities in Kelantan³, TDS is said to be rare. We report here 6 patients with the clinical features of TDS diagnosed in a single institution over a period of just 11 months.

Materials and Methods

Children who presented to our hospital with a history of chronic diarrhoea or who were referred for colonoscopy as part of a work-up for chronic dysentery between May 1999 and March 2000 were evaluated. Height and weight were measured using standard procedures. The initial work-up of patients with chronic diarrhoea was undertaken which included stool microscopic examination, stool culture and sensitivity, stool pH and stool reducing sugar. Subsequent

investigations were carried out depending on the presentation and results of initial investigations. All patients underwent colonoscopy. The diagnosis of *Trichuris* Dysentery Syndrome was made in the presence of chronic diarrhoea, short stature, anaemia and the demonstration of heavy *trichuris* infection by colonoscopy⁴.

All patients were treated with multiple doses of albendazole (Zentel, Smith Kline and Beecham.)

Results

The clinical features at presentation to our institution are summarised in Table I. All 6 patients in this series were Malays. In all patients, colonoscopy revealed numerous worms visible on the mucosal surface of the colon throughout its length from caecum to rectum (Fig 1); an appearance typical of TDS⁶. It is notable that the patients experienced symptoms for between 1 and 8 years before the diagnosis was eventually made. Two children had stopped going to school because of the illness. All patients had been examined before by health

Table I
Summary of the clinical features.

Case	Sex M/F	Age at diagnosis (years)	Duration of illness (years)	Chronic dysentery	Pica	Finger clubbing	Short stature	Wasted	Pallor
1	M	13	8	Yes	No	Yes	Yes	Yes	Yes
2	M	7	1	Yes	Yes	Yes	Yes	Yes	Yes
3	M	4	2	Yes	Yes	Yes	Yes	Yes	Yes
4	M	9	4	Yes	No	No	Yes	Yes	Yes
5	F	6	2	Yes	Yes	No	Yes	Yes	Yes
6	M	3	1	Yes	Yes	Yes	Yes	Yes	Yes

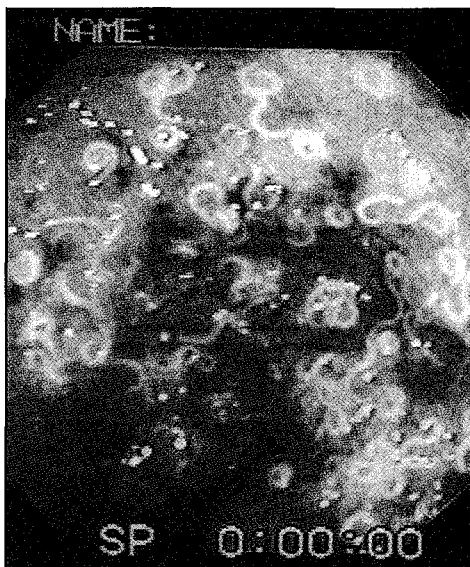


Fig 1: Colonoscopic view of a patient with the Trichuris Dysentery Syndrome showing numerous Trichuris worms on the mucosal surface of the colon.

workers and had been dewormed periodically. The anaemia was serious enough in three of the patients to require repeated blood transfusions. All patients were on vitamins and iron supplementations. Following treatment with the antihelminthic, five patients experienced improvement in symptoms, increase in height velocity (Figs. 2a and 2b) and increase in weight velocity (Figs. 3a and 3b). One patient had persistent symptoms presumably because of reinfection. He was mentally retarded and his personal hygiene was poor.

All patients were anaemic at presentation with haemoglobin levels of less than 7gm/dl. Two patients had concomitant *Ascaris lumbricoides* infection but none had *Giardia lamblia* infection or amoebiasis. Serum immunoglobulin level and immunophenotyping done in two patients were within normal limits. Histological examination done in two of the patients revealed non-specific colitis.

Discussion

The ubiquitous geohelminth *Trichuris trichiura* is among the most common human parasites in the world¹. The majority of infected individuals have light infections and are asymptomatic but heavy infection in children can lead to chronic and severe illness. In the majority of individuals with light or moderately intense infection, the worms are relatively few in number and confined to the caecum⁶. The presence of numerous worms throughout the length of the colon from caecum to rectum on the other hand is a typical feature of TDS⁶. The diagnosis of TDS rests on finding worms in the rectum coupled with the clinical syndrome of chronic diarrhoea, anaemia and growth retardation⁴. Clubbing and rectal prolapse are not invariable. Although trichuriasis is common, TDS is said to be uncommon. The often cited morbidity rate from trichuriasis is 0.2 per 1000 population⁵. Hence trichuriasis has been accorded a low priority in terms of public health importance. However there is evidence to suggest that in areas where the prevalence of *Trichuris* infection is high, TDS might not be as uncommon as is generally thought. Cooper and Bundy calculated the morbidity rate for trichuriasis in St Lucia, Jamaica (where the prevalence of trichuriasis was 84%) to be in the order of 100 per 1000 infected children. However the morbidity rate as assessed by

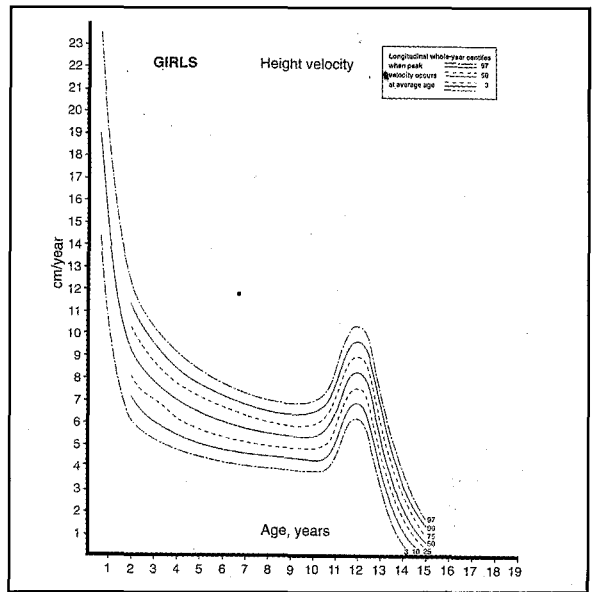
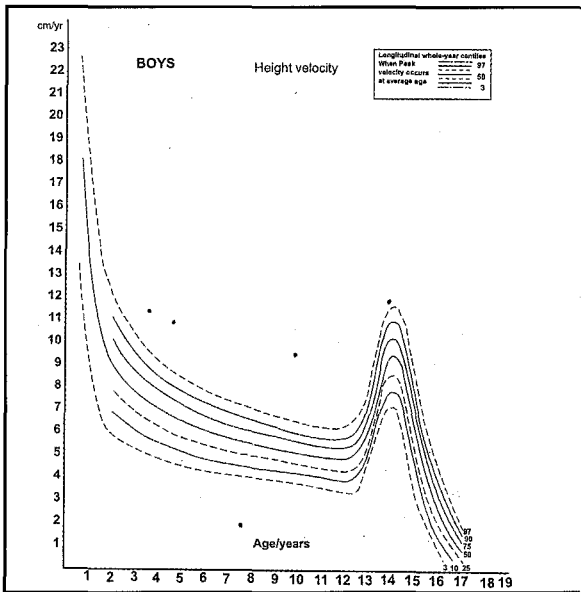


Fig 2: Growth curves after treatment showing increased height velocity in a) boys and b) girls.

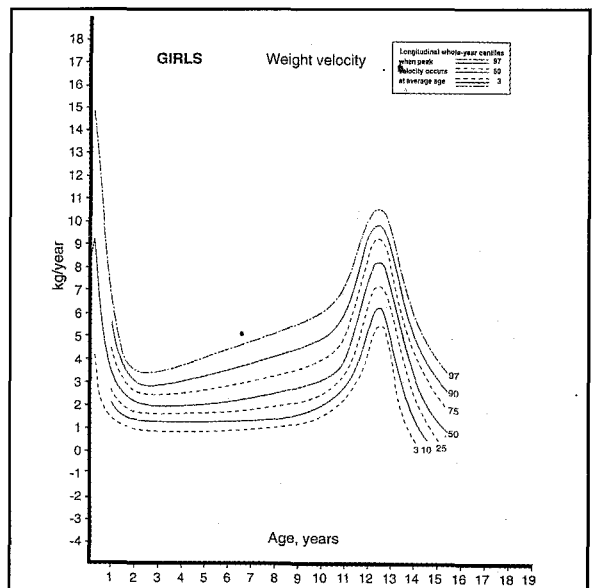
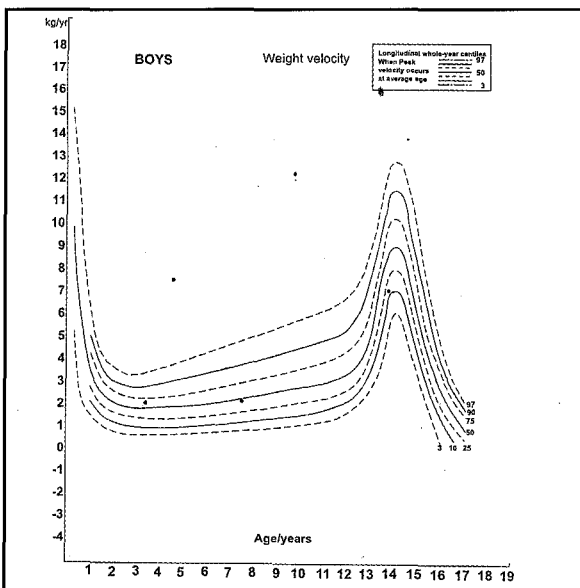


Fig 3: Growth curves after treatment showing increased weight velocity in a) boys and b) girls.

self-presentation to medical services was only 10 per 1000 infected children⁶. The morbidity of the disease is therefore likely to be grossly underestimated if measured by self-presentation alone. Perhaps this is not surprising as the illness itself is insidious, diminishing the urgency in seeking medical attention. This phenomenon was observed in the patients in our series who had been suffering for between 1 and 8 years before the diagnosis was made. It is poignant that while no cases of TDS were reported in Kelantan during the 5 years preceding 1999, the 6 cases in this series were detected in a single institution in less than one year. Clearly a heightened awareness of this condition among healthcare workers has a major influence on the number of cases diagnosed. It is quite possible that even the six cases diagnosed in our series represent the tip of the iceberg as parental consent for colonoscopy or even just sigmoidoscopy is not universally obtained.

Children with TDS tend to have growth and nutritional deficits as shown by their consistently short stature and variable amount of wasting⁷. Cooper and Bundy hypothesised that there is a causative link between *trichuris*-associate

dysentery and growth stunting⁶. This association is further strengthened by the observation of increased growth and improvement in nutritional status after worm expulsion⁸⁻¹⁰. Some improvement in cognitive function after treatment has also been documented¹⁰. Five of our patients were cured of their diarrhoeal symptoms, experienced improved appetite, gained weight and showed increased height velocity after treatment. The pathogenesis of TDS however remains unclear. Despite the striking similarity of clinical picture to inflammatory bowel disease in children, conventional histology of colonic mucosa in TDS shows little if any inflammation¹¹. Immunohistochemistry of the colonic mucosa however has shown increased numbers of tissue infiltrating monocytes and increased local production of tumour necrosis factor α (TNF α)¹². The *Trichuris* Dysentery Syndrome is a severe condition that causes considerable morbidity but if treated adequately has a favourable outcome. It is imperative for health workers to recognise this condition promptly.

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