

Case Report

Tropical Sprue: Two Cases Report and Review of Literature. Has Anything Changed in the Past 40 Years?

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Background: Tropical sprue is an acquired condition seldom reported in travelers from tropical countries including Thailand. Only one case report from Thailand was reported in 1969.

Case report: The authors report two cases of American residents living in Thailand and Vietnam who had been suffering from chronic diarrhea, weight loss, being easily fatigued and nutritional deficiency and who dramatically responded after treatment for tropical sprue. However, a relapsed episode was seen in one case and somewhat permanent damage was detected in another case.

Conclusion: Tropical sprue is currently which a rare condition for which the diagnosis is obtained by clinical presentation, laboratory tests which show evidence of mal-absorption, endoscopic findings and clinical response to antimicrobial treatment.

Keywords: Tropical sprue, Clinical manifestation, Treatment, Thailand, Tropical enteropathy

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“Tropical sprue or tropical mal-absorption syndrome” is the acquired condition characterized by chronic diarrhea and some evidences of nutritional mal-absorption such as fat, iron or vitamin B12 deficiency. This term was firstly reported in 1880 by Manson, described the patients who presented with glossitis and mouth ulcers. Most of those were the visitors to tropical countries. For Thai’s data, there was the only one case report of tropical sprue in 1969 by Juttijudata P et al⁽¹⁾ mentioned about a 16 year-old boy with chronic diarrhea for 2 years with abnormal D-xylose excretion test. He dramatically responded after taking folic acid supplement for a month. There were also a few articles about sub-clinical mal-absorption detected by D-xylose test in healthy Thai volunteers and also in the American military working in Thailand during 1967-1972^(2,3). After that, there were no further case report or series with regard of this condition while there were a handful reports related to this particular condition worldwide.

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Thus, the authors reported two cases of the American officers who lived in Southeast Asia and presented with chronic diarrhea.

Case Reports

Case 1

A 43 years old American lady had been living in Thailand for one year after spending 2-3 years in India. She had been suffering from recurrent asthmatic attack, easily fatigue, suffered weight loss of 10% in 6 months and had chronic watery diarrhea with sometime abdominal cramps for 9 months. She underwent many investigations, such as blood work and stool examination in few local hospitals, which showed negative results. She recognized that diarrhea was getting better for a while whenever she took antibiotics such as Trimethoprim or Fluoroquinolones. Nevertheless, all the symptoms, including watery diarrhea, would recurred within one week. Physical examinations, indicated she was mild anemia and had no definite clinical signs of mal-nutrition. Her blood work showed normochromic anemia 11.3 g/dL (12.2-16.2), albumin 4.18 g/dL (3.4-4.8), ferritin 13 ug/dL (13-150), B12 112 pg/mL (211-911). The stool examination showed no white blood cell and stool concentration

technique also showed no parasites. She underwent Esophagogastro duodenoscopy (EGD) and colonoscopy which revealed negative finding. However, randomized biopsy of the stomach, duodenum, ileum and colon was done. The histopathology showed mild chronic non specific enteritis and colitis without atrophic change of villi. She was treated as tropical sprue according to the some evidence of nutritional deficiency and her symptoms improved after taking antibiotics. Therefore, tetracycline 1 gm per day was prescribed. She dramatically responded after one week of the treatment with no more diarrhea and abdominal cramps and reported less fatigue. The blood work during followed-up period was done with satisfactory results. The treatment was stopped after 6 months. She had been doing well for few months but the diarrhea and abdominal pain recurred, without any abnormal blood tests. She was treated with another 4 months of tetracycline and has been doing good without any recurrent symptoms at the last followed-up episode.

Case 2

A 56 year old American business man who had been living in Vietnam for more than 10 years presented with chronic diarrhea following an acute episode of severe gastroenteritis. He had chronic watery diarrhea without abdominal cramps and fever. The floating mushy stools were observed. He was easily fatigued and lost 7-8 kg in few months. He had visited many local hospitals in Vietnam and all the blood works showed negative finding. He was treated as post infectious irritable bowel syndrome for a month but he was not getting better. So, he came to Thailand for further investigations. All the general physical examination were unremarkable. His blood works showed normal hemoglobin 14.8 g/dL (14.1-18.2), albumin 4.3 g/dL (3.4-4.8), ferritin 57 ng/mL (30-400), B12 186 pg/mL (211-911). The stool examination and stool concentration technique showed negative results. The stool fat was 112 gm per day. He underwent EGD and colonoscopy with randomized biopsy and the histopathology showed unremarkable results. He was prescribed with doxycycline 200 mg/day for totally 6 months. His symptoms were getting better within few weeks, his body weight returned to normal three months later and all the blood work done was within normal limits. His only abnormal residual symptom was floating well-formed stools. He requested for the stool fat test which reported 70 gm per day. He refused to re-start the treatment with antibiotics. He was in a good conditions without any recurrent symptoms at 4 years

follow-up.

Discussion

“Tropical sprue or Tropical enteropathy” was a condition which commonly reported in the Western travellers who visited the tropical countries such as India, Sri Lanka, Tanzania and countries in Southeast Asia including Thailand or among those were the residents in the countries mentioned above including also Australia (indigenous patients living in remote indigenous communities)⁽⁴⁻⁸⁾. The patients usually presented with chronic diarrhea, nutritional deficiency, being easily fatigue and significant weight loss which no bacteria, viral or parasitic infections can be detected. Endemic tropical sprue was reported in villagers living in southern India in 1960s and 1980s⁽⁹⁾. Some studies noted the endemic jejunal anatomical abnormalities in Thai subjects with sub-clinical mal-absorption detected by D-xylose test and in the American military and the Peace Corps personnel who had been working in Hawaii and Philippines before moving to live in Thailand in 1972^(2,3) and these were also reported. The etiology of tropical sprue was still not well established, but most of the hypotheses associated with some pathophysiology changed after gastrointestinal tract infection including some protozoa or parasitic infestations. The hypotheses of enterocyte dysfunction and bacterial overgrowth leading to bile salt related diarrhea and fat mal-absorption were postulated. The diagnosis consists of the history, clinical manifestations, abnormal D-xylose test and some evidence of nutritional deficiency. The main treatment that was recommended 40 years earlier was only folic acid supplement without any antimicrobials. However, long term outcomes were not reported. The disappearance of epidemic and endemic tropical sprue, including the decline of sporadic cases of tropical sprue might be related to wide spread use of antibiotics and improvement in hygiene and water quality in those tropical countries. However, the two patients reported here maintained a good standard of living and both of them live in the center of capital cities. Thus personal hygiene might not always play an important role. The diagnosis of tropical sprue was made by clinical presentations and abnormal laboratories such as fat mal-absorption, vitamin B12 deficiency, abnormal D-xylose excretion or histological abnormalities of small bowel biopsy which showed shortening of villi, crypt hypertrophy and infiltration of mononuclear cell in the lamina propria while total villous atrophy which was reported in Celiac disease was very rare in Tropical sprue. However,

histological change is not the gold standard for diagnosis of tropical sprue, for the patients in the present series showed no histological abnormalities detected. The authors presumed that during the early phase of the disease, histological change might not be of a distinctive character. The celiac sprue which was a gluten related enteropathy frequently reported in the Americas and Europe should be one of the differential diagnoses in all cases of suspected tropical sprue^(10,11). The celiac profiles were all negative in both of the patients in this series. The main treatment for tropical sprue was antimicrobial agents such as tetracycline 250 mg four times daily or Doxycycline 100 mg once or twice per day for 3-6 months with recurrent rate 20-40% of the cases⁽¹¹⁻¹³⁾. The folic acid and B12 supplement also improve the nutritional status. The diarrhea usually disappeared within a few weeks after treatment initiation, followed by weight gain and intestinal absorption will be gradually improved. However, there was a study regarding the permanent damage of small intestine permeability even after successful treatment of tropical sprue⁽¹³⁾ which demonstrated abnormal D-xylose test and more stool fat than the healthy volunteer (median urine D-xylose 0.57 g/5g/5/hr versus 1.08 g/5g/hr; $p < 0.0001$ and median fecal fat 10.1 gm/day versus 4.4 gm/day respectively; $p < 0.00001$). Tentatively, the male case which showed continuation of fat mal-absorption could be explained by this study. The benefit of re-treatment in the patient with sub-clinical mal-absorption remains doubtful.

Conclusion

In the past 40 years, the knowledge about tropical sprue is still limited, partly because the decline of cases, which might be a secondary effect from worldwide usage of anti-microbials. The small numbers of case series usually showed similar clinical characteristics with some evidence of nutritional deficiency from the blood tests; most of the patients dramatically responded after treatment with antibiotics. The relapsed cases and some other permanent damage of the small intestine function should be further investigated in a prospective study.

Potential conflicts of interest

None.

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ทรอปิคอล สปรู: รายงานผู้ป่วย 2 ราย และบททวนวรรณกรรม มีข้อมูลอะไรเปลี่ยนแปลง
ในระยะเวลา 40 ปีที่ผ่านมา ?

ปีตุลลักษณ์ อัสวกุล, วราวุธ ประชุมกุล

ภูมิหลัง: ทรอปิคอล สปรู เป็นโรคที่มีอาการท้องเสียเรื้อรัง ซึ่งมักพบในผู้ป่วยที่มีประวัติเดินทางท่องเที่ยว
ในแถบประเทศเขตร้อน สำหรับประเทศไทยเคยมีรายงานผู้ป่วยโรคนี้เพียงครั้งเดียวเมื่อปี พ.ศ. 2512

รายงานผู้ป่วย: รายงานผู้ป่วยชาวอเมริกัน 2 ราย ซึ่งอาศัยอยู่ในประเทศไทยและประเทศเวียดนาม มีอาการท้องเสีย
เรื้อรัง, น้ำหนักลด, อ่อนเพลีย และทุพโภชนาการ โดยผู้ป่วยทั้ง 2 รายตอบสนองอย่างดียิ่งต่อการรักษาด้วยยาปฏิชีวนะ
แบบโรคทรอปิคอล สปรู อย่างไรก็ตามผู้ป่วย 1 ราย มีอาการกลับเป็นซ้ำ และผู้ป่วยอีกรายยังคงมีการติดเชื้อซ้ำ
ผิดปกติเล็กน้อยหลังจากหยุดการรักษาแล้ว

สรุป: ทรอปิคอล สปรู ยังคงเป็นโรคที่พบไม่บ่อยในปัจจุบัน การวินิจฉัยต้องอาศัยอาการทางคลินิก ผลการตรวจ
ทางห้องปฏิบัติการที่บ่งถึงการติดเชื้อที่ผิดปกติ รวมไปถึงผลการส่องกล้อง และการตอบสนองต่อการรักษา
ด้วยยาปฏิชีวนะด้วย
