Case Report

A Thai Man Present with Skin Rash, Abdominal Pain and Bright Red Stool for 1 Day

Disaya Chavalitdhamrong, M.D.
Sathaporn Manatsathit, M.D.

ABSTRACT

A 26-year-old single Thai man, a messenger living in Bangkok presented with black and bright-red stool with abdominal pain for 1 day. He also had skin rash, abdominal pain and hematochezia. He had history of amphetamine abuse and multiple sexual partners, history of hepatitis B infection.

Key words : abdominal pain, bright-red stool, skin rash

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A 26-year- old single Thai man, a messenger living in Bangkok

Chief complaint He passed black and bright-red stool with abdominal pain for 1 day

Present Illness

He had been healthy prior to this illness.

10 days PTA, he developed erythematous rashes over face and all extremities with mild pruritus and tenderness.

8 days PTA, he went to see a doctor at local hospital and was prescribed dicloxacillin, tramadol, serratiopeptidase, betamethasone cream. He had no fever but the rashes gradually progress and his ankle joints started to become painful.

3 days PTA, he began to have periumbilical colicky pain with nausea and vomiting. He returned to his previous doctor and prednisolone 60 mg /day (divided in 3 doses), omeprazole and amoxicillin-clavulanic acid were added to his medications. Although he got better, he developed pain in his upper thigh and fingers which made him to stop all medications.

2 days PTA, he had two watery diarrhea at amount of a cup each, the stool was not mucous nor bloody.

1 day PTA, he passed black and bright red stool together with periumbilical colicky pain and bilateral lower abdominal pain. He also had nausea and left wrist pain. He then came to Siriraj Hospital and was admitted.

Past History

He never had history of oral and genital ulcers, nor rashes nor injected eyes.

Personal History

He used to drink half a bottle twice a week for 8 years

Gastroenterology Unit , Department of Medicine, Siriraj Hospital, Mahidol University, Bangkok 10700, Thailand

He quit smoking for 2 years and had history of amphetamine use twice a week.

He had 3 sexual partners and did not use condom.

There were no history of drug allergy nor history of TB contact.

Physical Examination

Vital signs: T 36.4˚C, PR 88 /min, RR 16/min, BP 120/80 mmHg

General appearance: good consciousness, not pale, no jaundice, no edema, no signs of chronic liver disease, no superficial lymphadenopathy, no oral thrush

Skin

- few erythematous papules with central necrosis and one pustule at face with multiple confluent erythematous papules, some annular erythematous plaques with central brownish patches and pustular rims were present at both distal part of all extremities (lower > upper).

- presence of multiple non-blanchable erythematous macules and papules at both palms and soles.

Cardiovascular system: PMI at 5th ICS, MCL, no heaving nor thrill, normal S1S2, no murmurs

RS: equal and normal breath sounds , no adventitious sounds

Abdomen: mild tenderness at umbilical region and lower abdomen, no rebound tenderness, no guarding

Liver- not palpable with span of 11 cm, spleen- not palpable

Nervous system: intact

Musculoskeletal: no signs of arthritis

Investigations

CBC: Hb 16.2g/dl, Hct 48.3%, WBC 14,800/mm^3 (N 82%, L 9.3%, M 8.6%, B 0.1%) Platelet count 299,000/mm^3

Blood chemistry: FBS 89 mg/dl, BUN 14 mg/dl, Cr 0.7 mg/dl

Electrolytes (mmol/L)-Na 131, K 3.4, Cl 96, $HCO_3$25

LFT: TB 0.9 mg/dl, DB 0.2 mg/dl, SGOT 13U/L, SGPT 21U/L, AP 63U/L, GGT 24 U/L, Albumin 2.8 g/dl, Globulin 3.9 g/dl

Coagulogram: PT 15.5 seconds (10-13), aPTT 32.8 seconds (23-32)

HBsAg positive, Anti-HCV negative

VDRL negative

ANA negative, ANCA negative

Urine exam: yellow, clear, pH 8.0, sp.gr. 1.015, albumin trace, RBC 0-1/HP, WBC 0-1/HP

Stool examination: no RBC, no WBC, stool occult blood- positive

Stool culture: no growth

Hemoculture: negative

Urethral swab culture: few colonies of group B streptococci

Gram stain (pus from skin lesion): no organisms seen

Colonoscopic finding showed erosive ileitis with transverse shallow ulceration, involving 2/3 of ileal circumference (Figure 1 A, B)

Ileal biopsy: Histopathological findings of Ileal mucosa showed superficial ulceration without well-preserved vascular structure (Figure 2 A, B)

There were numerous neutrophils infiltration together with small vessel vasculitis, AFB stain was negative.

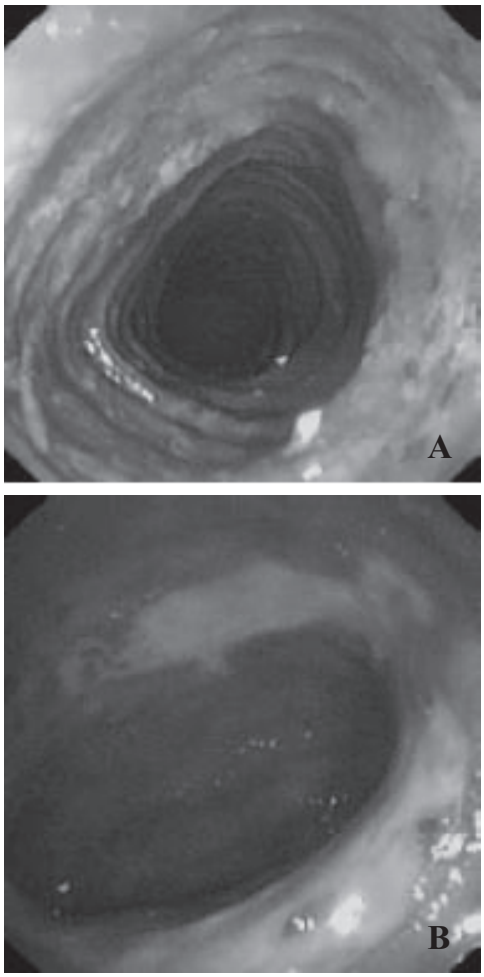

Figure 1

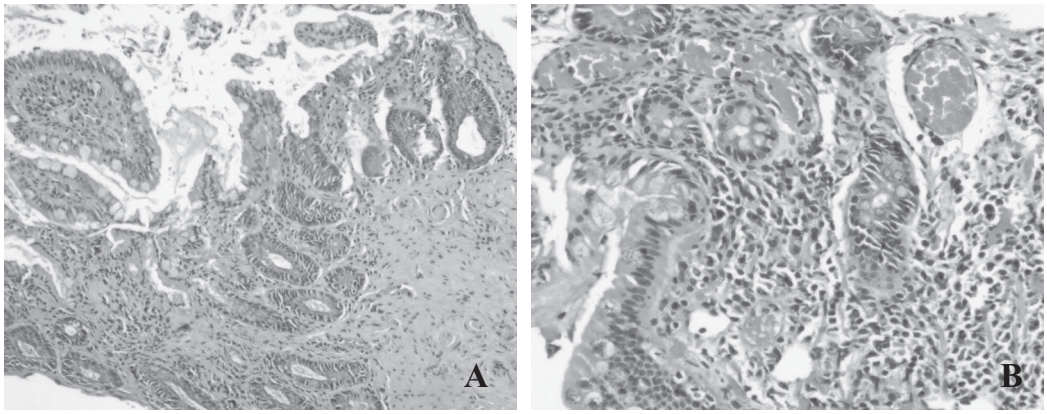

Figure 2

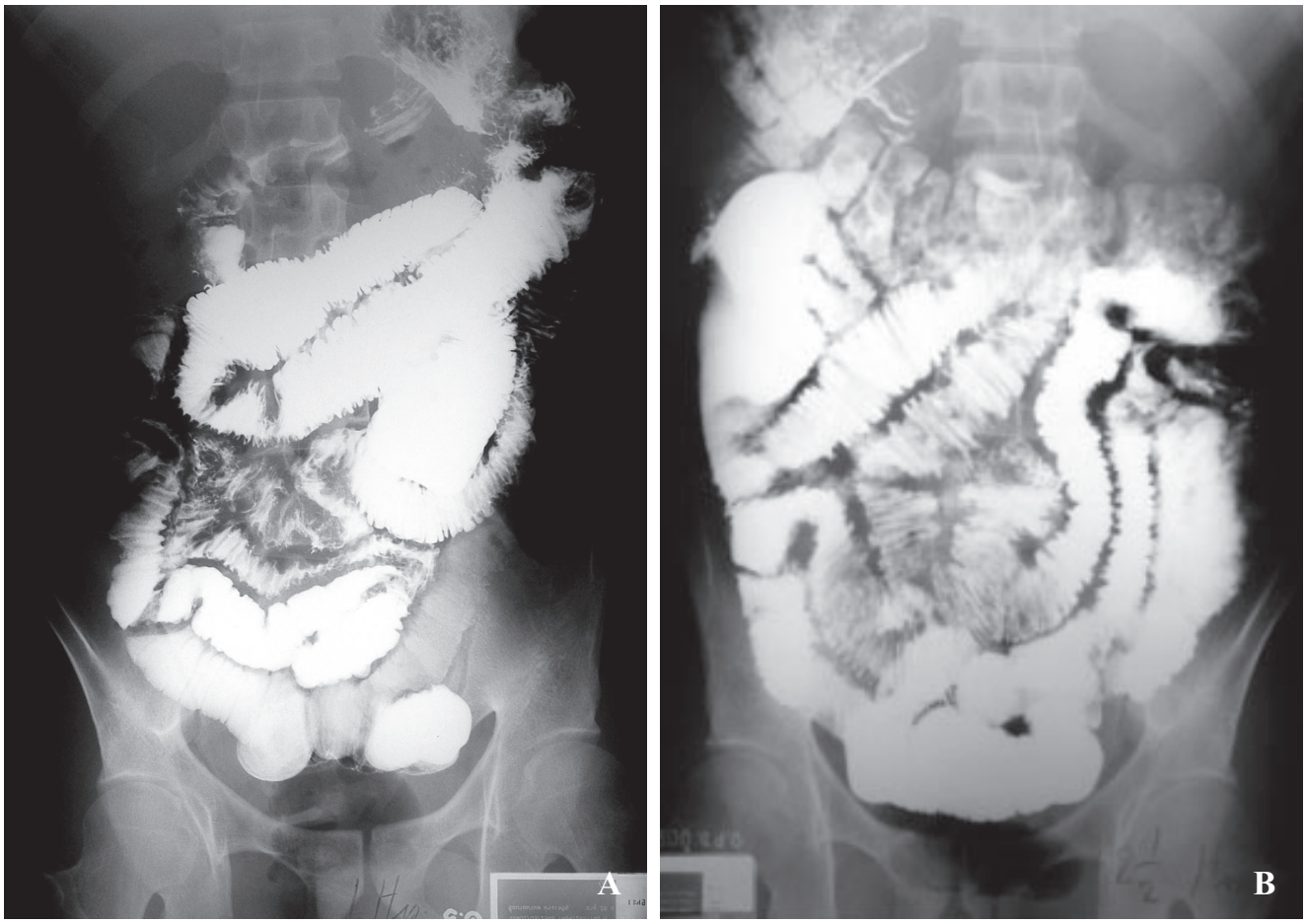

Figure 3

Gastrointestinal follow through showed esophageal, gastric, and duodenal mucosa were normal. There was regular thickening folds of jejunum and ileum (Figure 3 A, B)

Capsule endoscopy showed villous erosions and ulcers scattered in duodenum, jejunum and ileum.

- villous erosions and ulcers scattered in duodenum (Figure 4 A, B)

- Jejunum: villous erosions, ulcers (Figure 5 A, B)

- Terminal ileal ulceration (Figure 6)

Skin biopsy from forearm: Severe spongiosis of blood vessels with fibrinoid change and PMNs infiltrate.

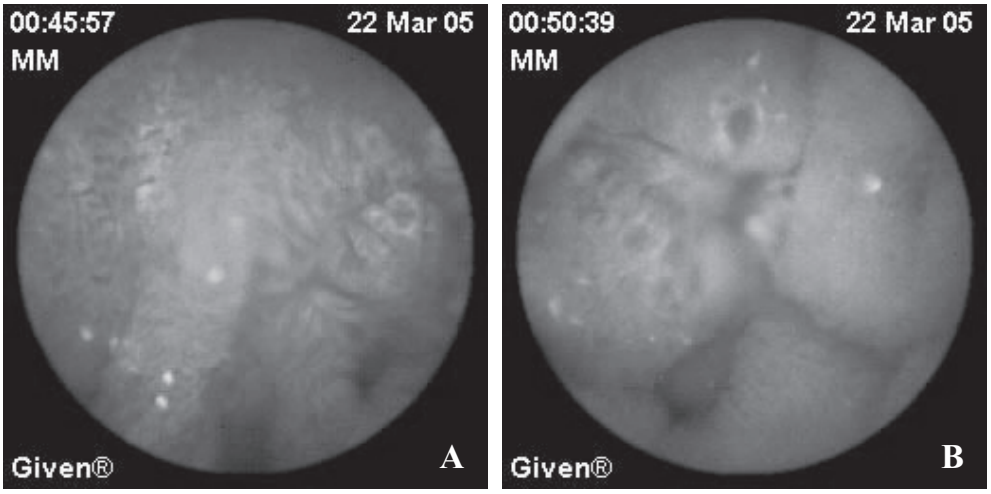

Figure 4

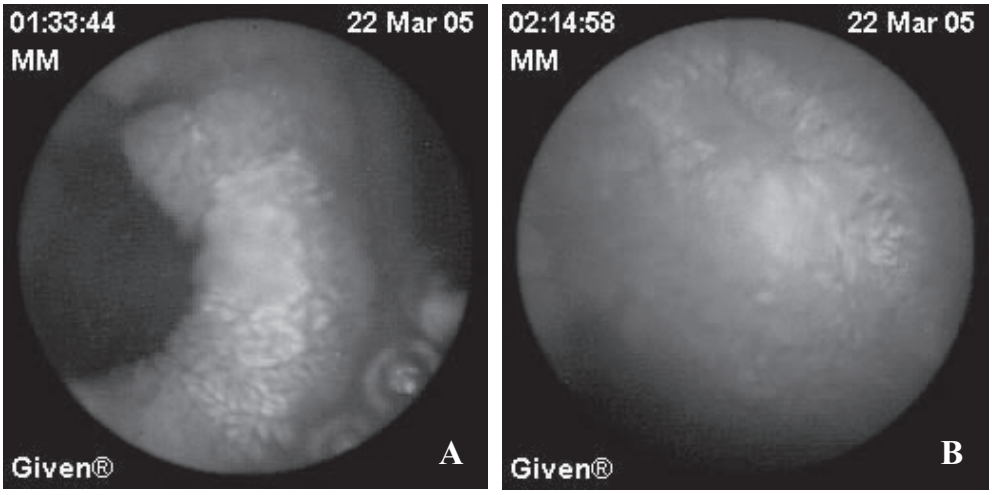

Figure 5

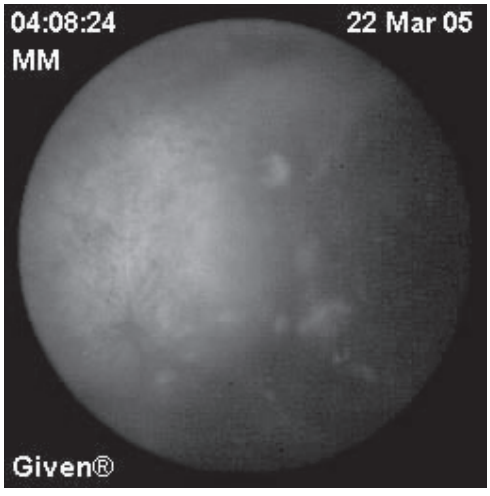

Figure 6

There was leucocytoclastic vasculitis with pustule formation (pustular vasculitis)

Direct immunofluorescence

Presence of C3 complements at superficial and deep blood vessels (few to moderate). IgA was found at superficial blood vessels (Figure 7 A, B)

DISCUSSION

This 26-year-old man presented with rash, abdominal pain and hematochezia. He also had a history of amphetamine abuse and multiple sexual partners, evidence of previous hepatitis B infection was also found.

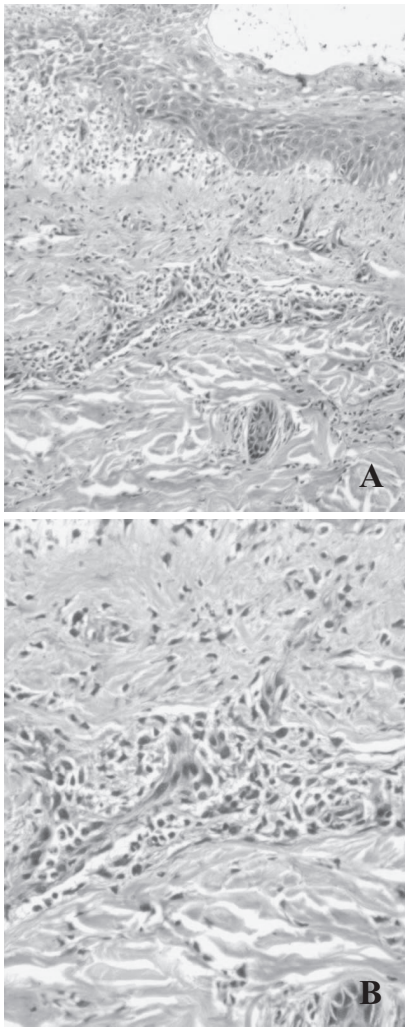

Figure 7

Although 7 percent of patients with hematochezia have disorders of the upper gastrointestinal tract[1] but the presence of hematochezia without hematemesis and normal BUN/Cr ratio in this patient suggest a source of bleeding from lower gastrointestinal tract.

In adults, arteriovenous malformation, diverticulosis, neoplasms, and internal hemorrhoids account for the vast majority of cases of lower intestinal bleeding. Less frequent causes of lower gastrointestinal bleeding include solitary rectal ulcer syndrome, colonic varices, mesenteric vascular insufficiency, small bowel diverticula, Meckel's diverticulum, aortoenteric fistula, vasculitis, small intestinal ulceration, endometriosis, radiation-induced injury and intussusception.[2] However, the causes of rectal bleeding in this 26-years-old man are less likely to be arteriovenous malformation, diverticulosis, neoplasms, or internal hemorrhoids because of his young age. In a consecutive series of 103

Table1 Differential Diagnosis of Ileitis and ileal ulcers

Infection
Yersinia enterocolitica
Yersinia pseudotuberculosis
Mycobacterium tuberculosis
Mycobacterium avium-intracellulare complex
Typhlitis
Histoplasma capsulatum
Salmonella
Cryptococcosis
Anisakiasis
Actinomycosis israelii
Inflammation
Appendicitis
Appendiceal abscess
Cecal diverticulitis
Gynecologic
Pelvic inflammatory disease
Tuboovarian abscess
Ovarian cyst or tumor
Endometriosis
Ovarian torsion
Ectopic pregnancy
Neoplasm
Cecal or small bowel (ileal) adenocarcinoma
Lymphoma
Lymphosarcoma
Carcinoid tumor
Metastatic cancer
Drug-related
Nonsteroidal anti-inflammatory drug-related ulcer or stricture
Ischemic: oral contraceptives, ergotamine, digoxin, diuretics, Antihypertensives
Vascular
Ischemia
Vasculitides: polyarteritis nodosa, Churg-Strauss syndrome, Takayasu's arteritis, Wegener's granulomatosis, lymphomatoid granulomatosis, giant cell arteritis, rheumatoid arthritis vasculitis, thromboangiitis obliterans Henoch-Scönlein purpura, Systemic lupus erythematosus
Behcet's syndrome
Infiltrative
Eosinophilic gastroenteritis
Amyloidosis
Lymphoid nodular hyperplasia (normal or suggestive of IgG deficiency)
Torsion of the appendiceal epiploica
Ileitis associated with spondyloarthropathy
Backwash ileitis arising in ulcerative colitis
Radiation enteritis

Modified from Sands BE.[4]

Italian children (age range from 1 month to 12 years), nearly 40 percent had either infectious or allergic colitis, almost 20 percent had colonic polyps, 13 percent had ulcerative colitis, 12 percent had anal fissures, 9 percent had lymphonodular hyperplasia, 2 percent had Meckel's diverticulum, and 1 percent had angiodysplasia.[3] The colonoscopic and capsule endoscopic findings in this patient confirmed that bleeding was from ileal ulcers which have diverse etiology. (Table 1)[4]

The patient was described as having presented with multiple confluent erythematous papules and annular erythematous plaques with central brownish patches and pustular rims on both distal part of all extremities which were more prominent at lower extremities. The skin lesions was diagnosed as small and medium vessel vasculitis by dermatologist.

Despite various causes of bleeding, the combination of ileal ulcers and vasculitis skin lesion should narrow the list of differential diagnosis. Some small and medium vessel vasculitides commonly involve both skin and gastrointestinal tract. (Table 2)[5] Polyarteritis nodosa (PAN) and mixed cryoglobulinemia are associated with chronic hepatitis B viral (HBV) infection. PAN is considered a rare complication of chronic HBV infection, occurring in only about 1-5%, but 40-50% of patients with PAN had positive HBsAg. Mixed cryoglobulinemia is observed in 15% of 40 patients with chronic HBV.[6] Absence of allergic symptoms makes the possibility of Churg-Strauss syndrome less likely. Negative serum ANCA does not support the diagnosis of microscopic polyangiiitis, Wegener's granulomatosis, and Churg-Strauss syndrome. In this patient the combination of abdominal pain, rashes, and arthralgia are common features of Henoch-Schönlein purpura. Although a typical palpable purpura was not present, the possibility of this condition is still likely.

The skin biopsy which revealed leucocytoclastic vasculitis with pustule formation, direct immunofluorescence stain which demonstrated deposition of IgA at superficial blood vessels and deposition of C3 at superficial and deep blood vessels (few to moderate), and ileal biopsy which showed superficial ulcers with neutrophil infiltration seen in LP of small vessels, these findings are compatible with Henoch-Schönlein purpura with ileal ulceration.

Henoch-Schönlein Purpura (HSP) and Gastrointestinal Involvement

HSP is an IgA-mediated autoimmune small vessel vasculitis, the highest cause of GI vasculitis among connective tissue diseases, named after two 19th-century German physicians Lucas Schönlein first described the clinical entity of arthritis and purpuric rash in 1837 and Eduard Henoch later recognized the association with gastrointestinal symptoms.[1] All ages can be affected but typically found in children. 90% of cases are under10 years old with peak incidence between 2 - 5 years. Male: female ratio = 2-6:1

Pathogenesis of HSP is deposition of immune complexes, mainly IgA and C3 (abnormalities involving IgA1, not IgA2). Increased serum IgA concentrations and IgA-containing circulating immune complexes are also noted. Biopsies reveal characteristic leucocytoclastic vasculitis (inflammation of the small blood vessels).[8-13]

HSP: The American College of Rheumatology 1990 criteria:14)

1 Age of onset ≤20 years

2 Palpable purpura

3 Acute abdominal pain

4 Biopsy : granulocytes in walls of small arterioles or venules

≥2 criteria can distinguish HSP from other vasculitis

Sensitivity and specificity = 87.1 and 87.7%

Table 2 Approximate frequency of organ-system manifestations in several forms of small-vessel vasculitis (%)

Organ System	Henoch-Schonlein Purpura	Cryoglobulinemic Vasculitis	Microscopic Polyangiiitis	Wegener's Granulomatosis	Churg-Strauss Syndrome
Cutaneous	90	90	40	40	60
GI	60	30	50	50	50
Musculo- skeletal	75	70	60	60	50
Renal	50	55	90	80	45

Modified from Jennette JC.[5]

Clinical Manifestations

An acute, self-limited illness (few weeks) but one-third of patients will have recurrences of symptoms.[13]

It is characterized by the classic TETRAD of

Purpura up to 100%[15,16]

GI involvement up to 60-70%[15-17]

Arthritis or arthralgia 20-70%

Renal involvement 20-100% (hematuria, proteinuria, renal insufficiency)

These findings can occur in any order over several days to weeks.[13]

Other manifestations are pulmonary, cardiac or CNS involvement, orchitis, edema (renal or intestinal protein loss), intramuscular bleeding and coagulation disorder.[15-18]

Laboratory Findings

Leucocytosis, thrombocytosis, CRP elevation, ANCA and reduction of factor XIII have been found but there are no diagnostic laboratory tests specific for HSP.

In one report of 47 Thai children with HSP, the most common age at presentation ranged from 3-5 years. The organ involvements included skin (100%), gastrointestinal tract (74.5%), renal (46.8%) and joint (42.6%). Recurrent episodes of abdominal pain and skin purpura were found in a few cases during the first year.[19]

Differences Between HSP in Children and Adults

In adulthood, HSP represents a more severe clinical syndrome, with a higher frequency of renal involvement, more common in males, lower frequency of abdominal pain and fever, higher frequency of joint symptoms and more frequent in increased ESR.[20,21]

Triggering Factors

Infections especially URI. Viral ,bacterial :throat culture positive for Streptococcus pyogenes in 16-75%[22,23] or parasite. Drugs (ATB, analgesics), toxins, systemic diseases, cancer.[20,24]

Gastrointestinal Manifestations of HSP

GI manifestations occur in up to 60-70% of patients.[8] GI symptoms occurred before skin manifestation in 10-25%. Course can be wax and wane over several weeks.[16,25]

The most common gastrointestinal symptom is periumbilical and colicky abdominal pain, increased after eating, which is occurred more than 50% of cases due to inflammation, edema, or hemorrhage in the intestinal wall.[7,26]

Patients may also have nausea, vomiting, diarrhea, constipation, and occult or overt intestinal bleeding.[25-28]

Serious gastrointestinal complications include intestinal ischemia/infarction (necrotizing vasculitis), ileus, perforation,small bowel obstruction (ischemic stricture, edema) and intussusception, which is the most common.[1,8,25-29]

HSP can involve any portion of bowel; duodenum is the most frequently involved.

Other rare manifestations are protein-losing enteropathy, ischemic cholangiopathies, ischemic necrosis of bile ducts, biliary cirrhosis, entero-enteric fistulae, esophageal stenosis, late ileal stricture[1] and pancreatitis.[30-36]

Investigations

- **Endoscopy** Esophagogastroduodenoscopy (EGD) appears to have the greatest diagnostic utility in HSP with GI involvement, because duodenum is predominantly affected.[29]

Location: (mostly in small bowel; duodenum) stomach, duodenum, jejunum, ileum, sigmoid colon and rectum.

Endoscopic findings include hemorrhage, erosion, ulceration, edema, hemorrhage, apthous lesions, petechiae, ecchymosis, redness, coin-like elevated lesions.[8,29,35]

- Contrast radiography of small intestine demonstrated thickened mucosal folds or small barium flecks.[29]
- Ultrasound (intestinal sonography) can detect dilatation of intestinal segments, mural thickness, mural hematoma, hypomotility, ileus, intussusception, and peritoneal fluid.[8,36-39]
- CT abdomen findings include bowel-wall thickening, dilated intestinal loops, mesenteric edema, vascular engorgement and regional lymphadenopathy.[36-39]

Treatment

Dapsone has beneficial effects on cutaneous, gastrointestinal and articular manifestations in adults, especially those with chronic forms.[24]

Corticosteroids are used for refractory/severe ab-

dominal pain[40], protein losing enteropathy[41], arthritis and decreased risk of developing renal disease.[30]

Combination of colchicine and aspirin have been used for chronic rash and arthritis.

The joint pain and painful cutaneous lesions are effectively treated with analgesics, nonsteroidal anti-inflammatory agents, and corticosteroids.[40]

Methylprednisolone pulse therapy, immunosuppressive drugs (e.g. cyclophosphamide and azathioprine), plasma exchange and polyclonal immunoglobulin therapy are beneficial in very rare life-threatening forms of the disease.[24]

Prognosis

Overall outcome is good in most patients. Complete recovery 94% of children and 89% of adults. All manifestations of active HSP usually resolve spontaneously.[20]

Morbidity from HSP is almost exclusively due to renal involvement.[19] Renal impairment, proteinuria at presentation, the degree of interstitial fibrosis, percentage of sclerotic glomeruli, and presence of glomeruli with fibrinoid necrosis are associated with a poor renal prognosis.[42]

HSP in adults is severe and its outcome is relatively poor, worse than in children.[42]

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