CASE REPORT

The first case of Henoch-Schönlein purpura associated with rosuvastatin: colonic involvement coexisting with small intestine

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SUMMARY

Henoch-Schönlein purpura (HSP) is a systemic vasculitis affecting small vessels. It is the most common systemic vasculitis in children, and is rare in adults. Serious gastrointestinal complications are more common in childhood. Infections and drugs are the most prominent factors in the aetiology. Wall thickening in segments of the small intestine is commonly seen in imaging studies in gastrointestinal system (GIS) involvement.
Simultaneous involvement of small intestine and colon is rare. An HSP case involving small intestine and colon in an adult patient due to the use of rosuvastatin, an antihyperlipidaemic agent, is presented, and is first of its kind reported in the literature.

BACKGROUND

Henoch-Schönlein purpura (HSP) is a leukocytoclastic vasculitis, primarily seen in children, with skin, joints, gastrointestinal tract and renal involvement.[1 2] The incidence of HSP in adults varies between 3.4 and 14.3 per million populations.[3] It is more common in men (1.2:1 to 1.8:1).[4] Rate of gastrointestinal involvement in adult patients range from 48% to 78.2%. Small intestine is the most frequently involved part in GIS. It causes severe colicky abdominal pain, and life-threatening complications may occur.[5–7] Secondary HSP may develop due to many drugs, particularly antibiotics. Ultrasonography (US), CT and MRI findings of an HSP case involving small intestine and colon in an adult patient due to the use of cholesterol-lowering drug called rosuvastatin (Reakt, Aset, Istanbul, Turkey), is presented.

CASE PRESENTATION

A 57-year-old male patient with abdominal pain, swelling in the wrist, fingers, knee and rash in legs was admitted to an internal medicine outpatient clinic. The patient used Rosuvastatin 20 mg, an antihyperlipidaemic agent, for 4 days 3 weeks ago; severe abdominal pain and swelling in the joints started 1 week later. The patient had rashes in lower extremities, and physical examination of the patient at admission revealed bilateral purpuric rashes in thighs, pain with passive motion at wrist and metacarpophalangeal joints and voluntary abdominal defence. The patient had intermittent diarrhoea episodes and seemed exhausted and irritable. There was no haematochezia. Laboratory tests revealed leukocytosis (white cell count 19.36 K/μL; normal 4.4–11.5), mild anaemia (haemoglobin 11.6 g/dL; normal 12.3–17.5), increase in erythrocyte sedimentation rate (ESR 53) and C reactive protein value (CRP 114); the presence of red blood cells in urine and faecal occult blood (+3) were detected.

Abdominal US examination (Acuson X 300 Ultrasound Imaging System, Siemens, Mountain View, California, USA) was carried out due to abdominal pain. Increased bowel wall thickness in the small intestines and free fluid between loops were detected in midline and right side of the abdomen. Oral, intravenous and rectal contrast-enhanced whole abdominal CT (Bright Speed 16, General Electric Medical Systems Co, Ltd, Milwaukee, Wisconsin, USA) and whole abdominal MRI (1.5-T unit, Intera; Philips Medical Systems, Best, the Netherlands) examinations were performed. Contrast-enhanced axial CT scan revealed diffuse and uniform wall thickenings (<1 cm) at small intestine segments, especially matching ileum curves at midline and the right lower quadrant of the abdomen (figure 1A,B). There were engorged regional mesenteric vessels, with milimetric mesenteric lymph node and mesenteric oedema (figure 1B). A follow-up oral contrast-enhanced axial CT scan obtained after 1 month of therapy showed dramatic improvement of diffuse bowel-wall involvement (figure 1C). The bowel-wall thickening in rectosigmoid colon was present on contrast-enhanced axial CT scan and axial fat-suppressed T2-weighted imaging (figure 2A,B). There was free intra-abdominal fluid in the right paracolic region and Douglas (figure 2B). After 1 month, unenhanced axial CT scan showed striking improvement in rectosigmoid colon involvement (figure 2C). Early mucosal and serosal uniform enhancement was seen in MRI after intravenous contrast (figure 3A). Axial fat-suppressed T2-weighted imaging revealed circumferential and homogeneous bowel-wall thickening in small bowel loops and mesenteric vascular engorgement (figure 3B). The findings were compatible with non-inflammatory vasculitic bowel involvement.

Punch biopsy of purpuric rashes in the patient's thigh matched leukocytoclastic vasculitis (figure 4) and renal parenchymal biopsy matched endocapillary and extracapillary proliferative GN; IgA nephropathy was confirmed by immunofluorescence analysis.

DIFFERENTIAL DIAGNOSIS

We excluded hypersensitivity vasculitis (due to renal involvement and deposition of IgA on skin biopsy), Crohn's disease and rheumatoid arthritis (due to palpable purpura, deposition of IgA on

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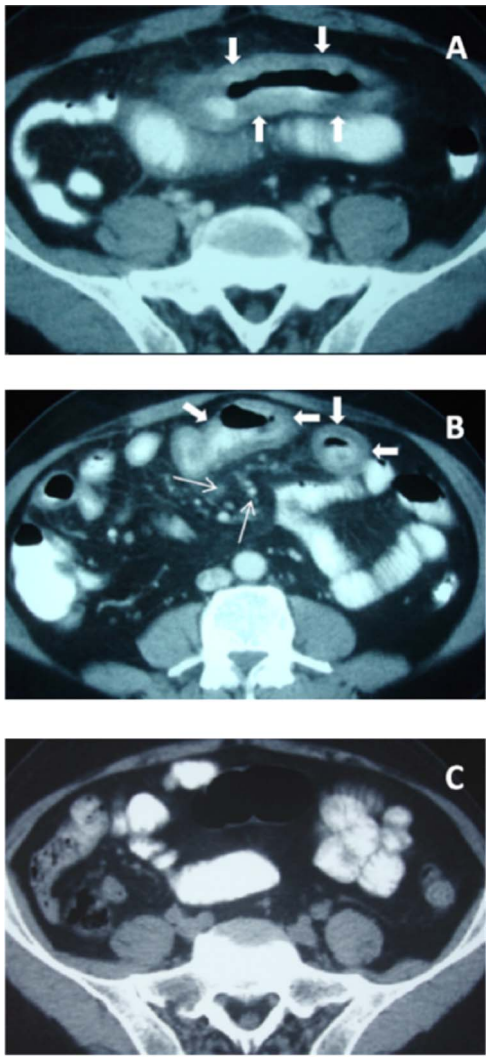

Figure 1 : (A) Oral and intravenous contrast-enhanced axial CT scan showing diffuse bowel-wall thickening of the small intestine (arrow). (B) Contrast-enhanced axial CT scan showing diffuse circumferential bowel-wall thickening with target sign (arrow). Regional mesenteric vessels are engorged, with milimetric mesenteric lymph node and mesenteric oedema (thin arrow). (C) Follow-up oral contrast-enhanced axial CT scan obtained after 1 month of therapy showing dramatic improvement of diffuse bowel-wall involvement.

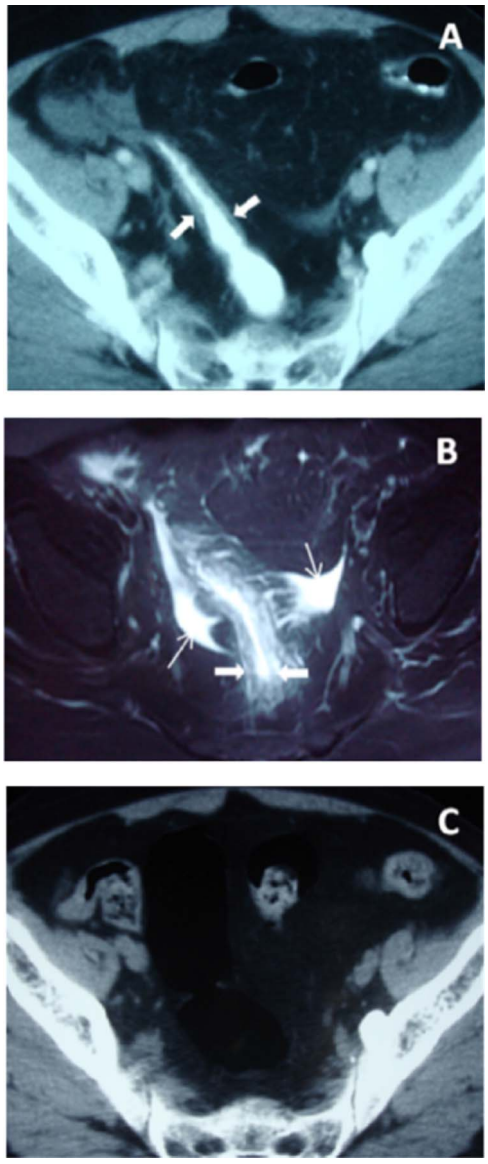

Figure 2 (A) Contrast-enhanced axial CT scan showing bowel-wall thickening in rectosigmoid colon (arrow), (B) axial fat-suppressed T2-weighted image showing bowel-wall thickening in rectosigmoid colon (arrow), free intra-abdominal fluid in the Douglas (thin arrow), (C) follow-up unenhanced axial CT scan obtained after 1 month of therapy showing dramatic improvement in rectosigmoid colon involvement.

biopsy), systemic lupus erythematosus and Wegener's granulomatosis (due to negative antinuclear antibody and antineutrophil cytoplasmic antibody levels, and deposition of IgA on biopsy), IgA nephropathy (due to palpable purpura, abdominal pain and arthritis) and haemolytic uraemic syndrome (due to palpable purpura, normal platelet and reticulocyte counts).

TREATMENT

The patient was treated with methylprednisolone 60 mg/day.

OUTCOME AND FOLLOW-UP

After the treatment, the patient's clinical and laboratory findings improved and significant regression was observed in control imaging after 1 month.

DISCUSSION

HSP is a leukocytoclastic vasculitis, primarily seen in children, with skin, joints, by non-thrombocytopenic palpable purpura, arthritis, gastrointestinal and renal involvement. The aetiology of the disease is not clear; however, infections, vaccines and α-1-antitrypsin deficiency may lead to HSP.[3] A relationship between HSP associated with gastrointestinal involvement in children and adults and *Helicobacter pylori* infection was identified.[1 8] Rarely, malignancies such as non-small cell lung cancer and prostate cancer have been reported to cause HSP.[1 3 9 10]

HSP may develop due to drugs such as streptokinase, acenocoumarol, clarithromycin, ciprofloxacin, penicillin and vancomycin.[4 11–15] Rosuvastatin, an HMG-CoA reductase inhibitor, is the main drug in the treatment of dyslipidaemia. Kostapanos *et al*[16] identified a series of side effects related to Rosuvastatin, including acute dermatitis, diagnosed as Stevens-Johnson syndrome, autoimmune hepatitis, arthralgias, gastrointestinal effects such as diarrhoea and constipation, nausea, abdominal pain, bleeding, pancreatitis and renal effects such

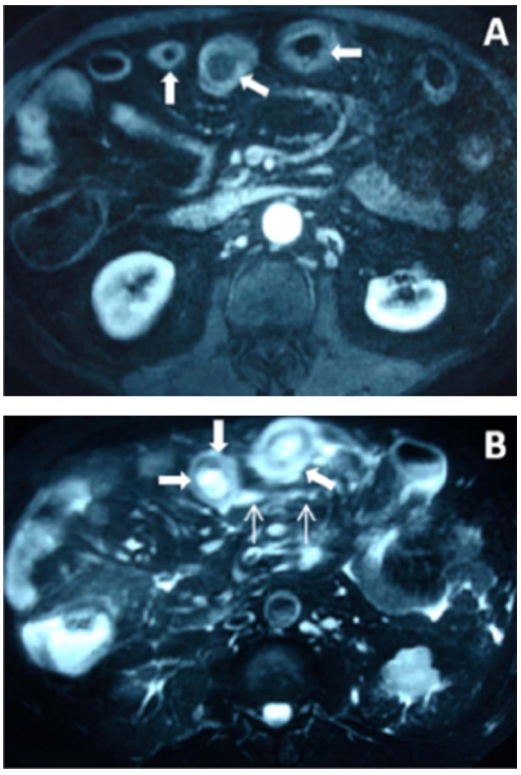

Figure 3 (A) Axial fat-suppressed T1-weighted imaging with gadolinium showing circumferential and homogeneous bowel-wall thickening with early mucosal and serosal uniform enhancement in small bowel loops (arrow), (B) axial fat-suppressed T2-weighted imaging showing circumferential and homogeneous bowel-wall thickening in small bowel loops (arrow). Note vascular engorgement (thin arrow).

as proteinuria and haematuria. As far as we know, this is the first case of HSP associated with intake of rosuvastatin, in the literature.

In HSP, cutaneous involvement is the most common presentation. Purpuric skin lesions are typically localised in the lower extremities, but can also be seen in hip, hands and arms.[3 4] Cutaneous involvement often precedes gastrointestinal involvement, but in quarter of cases, GIS may be involved first,[3] as in our case.

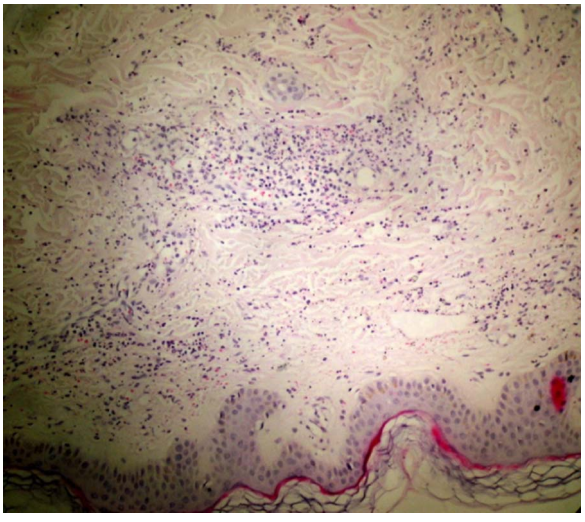

Figure 4 Punch biopsy of purpuric rashes in the patient's thigh showing neutrophil-rich inflammation, leucocytoclasia, endothelial swelling and fibrin deposition in the vessel wall at dermis.

The most common symptom of GIS involvement is colicky periumbilical pain. The pain, defined as 'Bowel angina', typically develops after meals and may be accompanied by bloody diarrhoea.[4] Other symptoms include nausea, vomiting, haematemesis, melena and abdominal distension.[1 3] Vasculitis of the mesenteric circulation is the cause of the symptoms. Sometimes symptoms may be severe enough to require laparotomy. Rarely, intestinal perforation, invagination, pancreatitis, pseudomembranous colitis, oesophageal ulcers, appendicitis and massive bowel necrosis may develop.[1 3]

Small intestine is the most commonly involved region in GIS, especially the second part of the duodenum is affected.[3 17] However, involvement of the ileum is more severe than other regions.[3] Colonic involvement is rare, and the findings are similar to those found in the small intestine.[18] There are a few cases reported in the literature about only colonic involvement.[19–21] Burger *et al*[22] reported, in a 62-year-old female patient, the involvement of small intestine together with colon, as in our case.

In HSP, primary diagnosis is based on clinical signs and symptoms.[3 4] Biochemical findings are not specific.[23] Demonstration of IgA-deposited lekocytoclastic vasculitis confirms the diagnosis of HSP in patients with atypical presentation by biopsy from affected organs such as skin and kidney.[3 4] Although new criteria are proposed by the European League Against Rheumatism (EuLAR) and Paediatric Rheumatology Society (PReS), most of the studies used old criteria proposed by American College of Rheumatology.[3] Laparotomy may be required, if GIS symptoms develop before appearance of skin lesions.[23] In our patient, laparotomy was not performed; radiological findings were demonstrative and the diagnosis was confirmed by biopsy.

US may visualise generalised intestinal wall thickening, bowel dilation, ascites and ileus of affected loops.[21] A CT or MRI can identify multifocal bowel-wall thickening with skipped areas, bowel dilation, vascular engorgement and oedema in the mesentery and non-specific lymphadenopathy. James *et al*[23] indicated that mesenteric changes such as vascular engorgement and mesenteric oedema are characteristic findings for mesenteric vascular diseases rather than neoplastic or inflammatory bowel diseases. Skip lesions between intestinal segments distinguishes HSP-induced vasculitis from mesenteric ischaemia caused by vascular occlusion or hypovolemia. The distinguishing feature between neoplastic and non-neoplastic diseases is bowel-wall thickness; the limit value is 1.5 cm.[23] In our patient, bowel-wall thickening of less than 1 cm at its maximal dimension was found. Regional lymphadenopathies are non-specific findings which can also be seen in inflammatory and neoplastic conditions and are not helpful in the differential diagnosis. In our patient, there were vascular engorgement, mesenteric oedema and regional lymphadenopathies less than 1 cm in diameter. Although CT findings are often sufficient for the diagnosis of surgical conditions in HSP; patient's history and clinical evaluation should not be ignored.[23]

Age at onset, degree of renal and skin involvement and neurological involvement are determinant factors for prognosis.[3] The percentage of glomeruli showing crescent is the most important prognostic indicator.[4] In our case, neurological examination was normal, but renal involvement was present in addition to GIS.

Rosuvastatin, widely used in the treatment of hyperlipidaemia, can cause severe HSP associated with gastrointestinal involvement; small intestine and colonic involvement are easily demonstrated by radiological methods.

Learning points

- This case is the first case of Henoch-Schönlein purpura (HSP) associated with rosuvastatin.
- Small intestine is the most frequently involved part in gastrointestinal system (GIS) and colonic involvement coexisting with small intestine is rare.
- GIS involvement in HSP may cause life-threatening complications and can be easily demonstrated by radiological methods such as CT and MRI.

Contributors KAG drafted the article and approved the final version. GE reviewed the literature, contributed to the conception and design. MO prepared the paper initially. CE revised the manuscript critically for important intellectual content.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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