

ADVERSE DRUG REACTION

Acute ischaemic colitis due to hypotension and amoxicillin allergy

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Postgrad Med J 2004;80:298–299. doi: 10.1136/pgmj.2003.011452

A case of acute ischaemic colitis, confirmed by colonoscopy and colon biopsy, caused by IgE mediated allergy to amoxicillin is presented. The damage to the gut seemed to occur as a result of the hypotension suffered during the anaphylactic episode.

Ischaemic colitis is a well defined entity, almost always of vascular origin, particularly in cases of congestive heart failure, myocardial infarction, acute haemorrhage, sepsis, cardiac arrhythmias, or dehydration.¹ Some cases of ischaemic colitis secondary to oral contraceptive pills,² pseudoephedrine,³ meloxicam,⁴ alosetron,⁵ and sumatriptan⁶ have been reported. It has also been described related to milk allergy.⁷

Amoxicillin is one of the most widely prescribed β -lactams in the world, in both inpatient and outpatient clinics and, for that reason, it is one of the most frequently involved drugs in allergic reactions.⁸ As a result of anaphylactic shock, ischaemic lesions (myocardial infarction) caused by amoxicillin allergy have been described.⁹ A case of an acute ischaemic colitis caused by an IgE mediated allergic reaction to amoxicillin is presented.

CASE REPORT

A 67 year old woman, who neither smoked nor was diabetic, and with no personal or familiar history of atopy, received

amoxicillin 1 g orally as prophylaxis for bacterial endocarditis because of a mild aortic stenosis (following the recommendations of her cardiologist) and before dental surgery. The patient had received amoxicillin previously on many occasions with no problems. One hour later the patient suffered from epigastric pain followed by loss of consciousness and a generalised erythematous reaction. In the emergency room hypotension (systolic blood pressure undetectable) was detected. The patient received intramuscular methylprednisolone with partial recovery (blood pressure, 90/60 mm Hg) but severe lower abdominal pain was still present and accompanied by rectal bleeding. A colonoscopy detected severe mucosal oedema and erythema with friability and petechiae all over her rectum and sigmoid colon, with less intensity on the left and transverse colon (fig 1). A biopsy specimen from the left colon showed mucosal and submucosal oedema with ulcerations, necrosis, and erythrocyte extravasation.

Serum specific IgE antibody levels against amoxicillin, ampicillin, and penicillin were determined by commercial CAP immunoassay (Pharmacia Laboratory, Uppsala, Sweden), and a positive result was obtained against amoxicillin (CAP score of 4.05 IU/ml).

Skin prick tests were carried out using commercially available antigens of penicilloypolylysine, minor determinant mixture containing benzylpenilloate and benzylpenicilloate (Allergopen, Laboratories Merck, Barcelona, Spain),

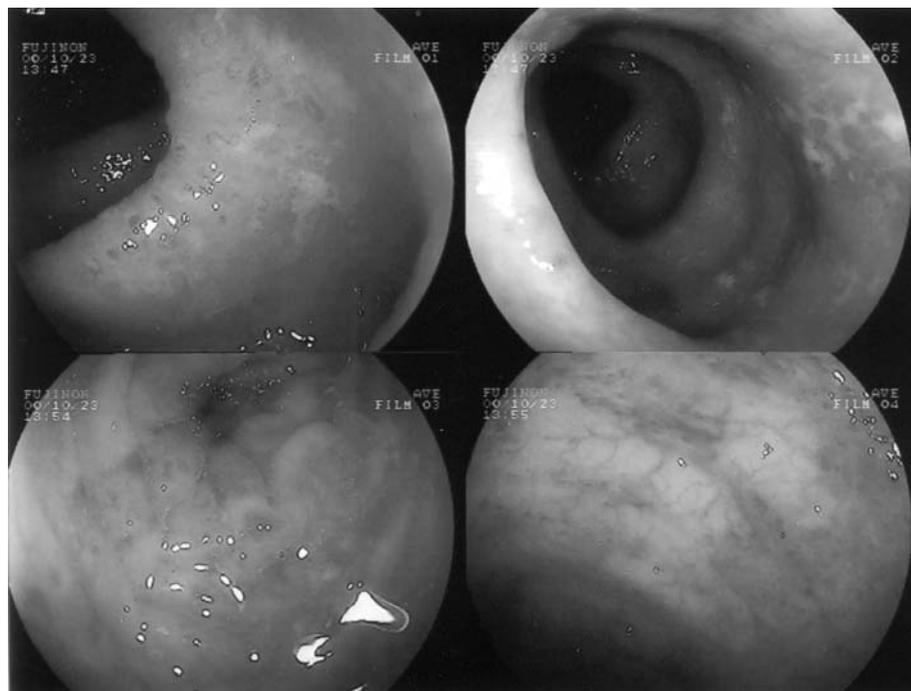


Figure 1 Colonoscopy showing mucosal oedema and erythema with friability and petechiae.

Summary points

- Clinical expression of an allergic reaction might include gastrointestinal symptoms such as ischaemic colitis.
- Skin tests are useful in such cases.

and penicillin G 10 000 IU/ml, ampicillin 20 mg/ml, and amoxicillin 20 mg/ml. Control tests included 10 mg/ml histamine and saline solution. The papule was measured after 15 minutes and was considered positive when it was at least the same size as the histamine control and 3 mm greater than the saline control. Skin prick tests with penicilloyl-polylysine and minor determinant mixture were negative. After 15 minutes, penicillin G, amoxicillin, and ampicillin showed a positive response (papule 5 × 5 mm, 30 × 12 mm, and 11 × 10 mm, respectively), remaining positive 24 hours later.

DISCUSSION

The clinical course and the colonoscopic and histological features were typical of ischaemic colitis. In general, any situation that triggers a shock, regardless of the cause, may induce hypovolaemia, hypoxaemia, and ischaemic lesions. In the patient presented here, colitis occurred as a result of the hypotension suffered during the anaphylactic episode. There was no evidence that the damage to the gut was direct or induced by the immune reaction. However, there was no clinical evidence of any other cause of ischaemic colitis except the penicillin allergy in this patient. It must be noted that the reaction present here is very infrequent, and not everybody who has anaphylaxis develops ischaemic colitis. One possible explanation is that, because of age, a certain degree of atherosclerotic disease could be present. However, no signs of atherosclerosis were found in the biopsy from the left colon and further investigations of the gut vasculature such as angiography were not performed in the patient.

Patients who report a vague history that is difficult to classify, as in the patient presented here, represent a diagnostic problem. Many physicians approach these patients less cautiously than those who have a convincing history suggestive of an allergic reaction. However, it has been shown that up to 33% of patients who were studied to rule out penicillin allergy and who were skin test positive have an irrelevant history of penicillin allergy.¹⁰ Penicillin skin testing

is a reliable tool for investigating penicillin allergy, particularly when intradermal tests are used, and in cases of suspected immediate allergy.¹¹ The presence of an erythematous reaction together with results from skin prick tests support the diagnosis. No similar cases have been described since 1966 when a haemorrhagic colitis located in the rectum was associated with penicillin anaphylactic reaction.¹²

ACKNOWLEDGEMENTS

The authors thank the nurses of our Allergology Unit, Marisa Maseda and Ana Paz, for their excellent technical assistance.

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Submitted 19 June 2003

Accepted 12 September 2003

REFERENCES

- 1 **Bynum TE**, Jacobson ED. Vascular disorder of the large bowel. In: Kirsner JB, Shorter RG, eds. *Disease of the colon, rectum and anal canal*. Rochester: Mayo Foundation, 1988:537–48.
- 2 **Cotton PB**, Thomas ML. Ischaemic colitis and the contraceptive pill. *BMJ* 1971; **iii**:27–8.
- 3 **Lichtenstein GR**, Yee NS. Ischaemic colitis associated with descongostant use. *Ann Intern Med* 2000; **132**:682.
- 4 **García B**, Ramaholimihase F, Diebold MD, et al. Ischaemic colitis in a patient taking meloxicam. *Lancet* 2001; **357**:1619.
- 5 **Friedel D**, Thomas R, Fisher RS. Ischemic colitis during treatment with alosetron. *Gastroenterology* 2001; **121**:231–2.
- 6 **Knudsen JF**, Friedman B, Chen M, et al. Ischemic colitis and sumatriptan use. *Arch Intern Med* 1999; **159**:1141–2.
- 7 **Sacca JD**. Acute ischemic colitis due to milk allergy. *Ann Allergy* 1971; **29**:268–9.
- 8 **Vega JM**, Blanca M, García JJ, et al. Immediate allergic reactions to amoxicillin. *Allergy* 1994; **49**:317–22.
- 9 **Salgado-Fernández J**, Penas-Lado M, Vázquez-González N, et al. Infarto agudo de miocardio tras reacción anafiláctica por amoxicilina. *Rev Esp Cardiol* 1999; **52**:622–4.
- 10 **Solensky R**, Earl HS, Gruchalla RS. Penicillin allergy: prevalence of vague history in skin test-positive patients. *Ann Allergy Asthma Immunol* 2000; **85**:195–9.
- 11 **Torres MJ**, Romano A, Mayorga C, et al. Diagnostic evaluation of a large group of patients with immediate allergy to penicillins: the role of skin testing. *Allergy* 2001; **56**:850–6.
- 12 **Sosa C**, Durán MR, Hans R. Rectocolitis hemorrágica postshock anafilático. *La Prensa Médica Argentina* 1966; **53**:1710–12.