Case 3 was an 83-year-old widow who had alarmed her family by increasing signs of depression after her husband's death. She was found one morning in a very disorientated state by her niece and was rushed to the accident and emergency department and admitted as a case of self-induced poisoning with aminophylline; two empty prescription bottles for the substance were found in her house. She showed disinhibition, aggressiveness, suspicious feelings, lack of attention and concentration, and a lack of retention; she was also disorientated. She had fever and a fine tremor. These symptoms continued despite the use of thioridazine 25 mg as required (about 75 mg used) and then four days after admission her state suddenly cleared completely, leaving a remarkably well-orientated, articulate, elderly lady, who described her feelings of grief over the death of her husband and who has since responded to psychiatric help.

Comment

These cases all have a remarkably similar presentation, but it must be noted also that they mimic closely organic reactions to such things as urinary infection or hypoglycemia and also the most common chronic organic syndromes such as multi-infarct dementia. The problem is, of course, that serum concentrations of aminophylline may be difficult to obtain, so if there is any suspicion of toxicity by aminophylline it might be best simply to give supportive treatment and observe for three or four days and delay any investigations. There are few published reports on aminophylline toxicity[3] and no previous description of what appears to be a discrete and specific response, at least in the elderly.

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Department of Psychiatry, University of Leicester, Leicester Royal Infirmary, Leicester LE2 7LX

IAIN DRUMMOND, MB, MRCPSYCH, lecturer and honorary senior registrar

Steatorrhoea after tetracycline

Tetracycline is regularly used to label the bone mineralisation front before bone biopsy.[1] Having observed transient steatorrhoea in several patients undergoing bone biopsy, we investigated the relationship between steatorrhoea and oral tetracyclines by measuring faecal fats shortly after the patients had received oral tetracycline.

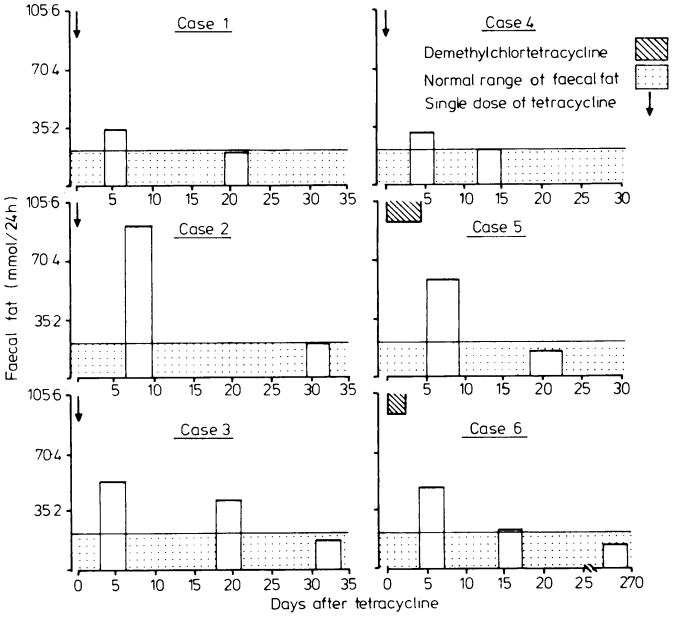
Subjects, methods, and results

All 27 patients studied were under investigation in a metabolic ward for either osteoporosis or osteomalacia. Of these, four were Asian and 23 white; 12 were men and 15 women, aged 19-68. All individual diet and drug regimens except tetracycline were kept unchanged. Daily fat content of the diets was maintained between 176 mmol/day (50 g/day) and 246 mmol/day (70 g/day) for all patients. None complained of bowel disturbance, and renal function was normal in all patients. Oral tetracycline or demethylchlortetracycline were given as bone markers. Thirteen patients were given single doses of 2 g tetracycline; 14 were given demethylchlortetracycline in doses of 150 mg six hourly for between two and four days.

Faecal fats were collected over either three or four days and estimated from 10 ml of homogenates using the method of King,[2] the normal faecal fat per 24 hours being up to 21·1 mmol (6 g). Collections were started between one and six days after tetracycline or demethylchlortetracycline had been given, and at least one collection was made again subsequently in those patients showing steatorrhoea. Nineteen patients had faecal fat estimations within normal limits. Six patients had pronounced steatorrhoea, which subsequently disappeared (figure). Two further patients had borderline steatorrhoea (24 mmol/day, 6·8 g/day and 22·9 mmol/day, 6·5 g/day), which disappeared (not shown in the figure). Other tests of malabsorption including estimation of vitamin B12 concentrations, jejunal biopsy, glucose tolerance test, measurement of serum amylase activity, and faecal cultures gave normal results.

Comment

At least six (22%) of 27 patients undergoing investigation for osteoporosis or osteomalacia had transient steatorrhoea after taking a tetracycline drug for the purpose of bone biopsy. The effect persisted for variable periods after the drug had been discontinued. The cause is uncertain. Tetracyclines are absorbed irregularly from the gastrointestinal tract owing to their low solubility and to chelation with calcium; a large proportion of oral tetracycline remains in the gut causing a high local concentration which may modify the gut flora or may cause direct toxicity to the gut wall. Since in most patients with blind loop syndrome, however, the steatorrhoea improves after a course of tetracycline,[3] the effect in our patients may possibly have been due to a direct toxic effect rather than to an alteration in flora. Administration of the drug to rats has impaired fat absorption.[4] In man tetracycline can cause oesophageal ulcers,[5] but steatorrhoea has not been reported. If our findings in patients with a healthy small bowel apply to patients with blind loop syndrome then tetracycline may actually produce the steatorrhoea for which it was intended as treatment.



Faecal fat estimations in six patients after single dose of 2 g tetracycline (cases 1-4) or demethylchlortetracycline 150 mg six hourly for four days (case 5), or demethylchlortetracycline 150 mg six hourly for two days (case 6).

Conversion: SI to traditional units—Faecal fat: 1 g/24 hr = 3·52 mmol/24 hr.

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Royal National Orthopaedic Hospital, Stanmore, Middlesex HA7 4LP

T H MITCHELL, MA, MRCP, senior medical registrar
T C B STAMP, MD, FRCP, consultant physician
M V JENKINS, PHD, biochemist