Tetracycline sensitivity as a cause of excessive flatus

There has been increased interest in the problem of excessive flatus since Levitt *et al.*¹ analysed the flatus of a patient and found the content of H₂ and CO₂ too high to be accounted for by aerophagy. In their patient some improvement followed restriction of dietary lactose, but the cause of the condition was not identified. I report a case in which sensitisation to a water-soluble metabolite of tetracycline caused a similar syndrome.

Case report

The patient, in her 30s, started to complain of excessive flatus with alternating diarrhoea and constipation 11 years ago, and was treated symptomatically after a barium enema had disclosed no abnormality. The symptoms increased over the next two years and were unaffected by any of the standard diets tried. Symptoms seemed worse after eating pork and chicken.

When all food products from pigs and chickens were avoided because of the known use of antibiotics (mainly penicillin and tetracycline) in the food-stuffs of both species for growth promotion, the patient became virtually symptom free. Since then she has suffered an identical syndrome two days after starting treatment with tetracycline, but has been treated with penicillin without ill effect.

In 1971 Britain barred the addition of therapeutically useful antibiotics to food-stuffs for growth promotion,^{2,3} but they may still be used under veterinary supervision for therapeutic purposes. Infections are frequent under intensive-rearing systems. In Denmark the sale of eggs, milk, or the carcasses of tetracycline-treated animals for human consumption is banned for 30 days after the end of treatment,^{4,5} but no such ban operates in Britain.

The table shows the frequency with which animal products from Britain before and after the 1971 ban and from Denmark during 1976 caused the syndrome. Symptoms have been caused by very small quantities—for example, a tenth of an egg—but the patient can keep symptom-free in Britain with care, and remained so while eating freely in Denmark.

Comment

It seems certain that the syndrome was caused by a water-soluble metabolite of tetracycline, formed in the animal, passed into eggs and milk, and normally eliminated within 30 days. The metabolite was made by the patient within two days of taking tetracycline by mouth. The mechanism is probably one of sensitisation since there is no intolerance to the basic foods. The food responsible is innocuous to normal people, and the patient has a history of hayfever, migraine, and psoriasis with occasional polyarthritides, and a low serum IgA (78 IU/ml) of familial origin. Her sister, also with a low serum IgA (60 IU/ml), had a similar syndrome from acquired gluten sensitivity and an aunt (now dead) had one from an undiscovered cause.

There is no evidence as to whether the original sensitisation was acquired from food or from previous tetracycline treatment: in either case it could be one of a family of sensitisations if other antibiotics give rise in animals to metabolites with similar properties. Sensitisation to a primary constituent of food is relatively easy to detect, but sensitisation

to an intermittent food contaminant is more elusive, and should perhaps be suspected in other cases of unexplained flatulence.

¹ Levitt, M D, *et al*, *New England Journal of Medicine*, 1976, **295**, 260.
² *Veterinary Record*, 1971, **88**, 218.
³ *Veterinary Record*, 1976, **98**, 263.
⁴ Proclamation of the Danish Ministry of Agriculture, 25 August 1972.
⁵ Circular issued by the Danish Veterinary Directorate, 25 September 1972.

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Le Dantec virus infection in a patient who had not been to West Africa

Le Dantec virus was first isolated in 1965 at the Institute Pasteur in Senegal.¹ A 10-year-old girl had fever and hepatosplenomegaly. Since that time the virus has not been known outside West Africa. Our patient had not been to West Africa, but had been bitten by an insect while unloading a ship that had come from Nigeria and had called at other ports along the West African coast. The case raises the problem of containment of viral infections in the face of increasing international travel, and it also suggests that this virus, like others, may occasionally damage basal ganglia in the brain.

Case report

When investigated in 1976, the patient, a docker, was 47. He had not been out of Britain except when in the army from 1948 to 1949 when he had visited Cyprus, Sudan, Eritrea, and Egypt. Since 1949 he had lived in South Wales.

In 1969, while unloading peanuts from a ship that had come from Nigeria, he was bitten by an insect. The bite was on the left lower quadrant of the abdomen, which had been exposed while the patient worked in the ship's hold. He recalled the bite as having caused a stinging pain at the time, but he had not seen the insect. Four days later a red indurated wheal developed at the site of the bite. At that time he felt ill and had fever and headache. He was admitted to hospital, and there became delirious and while in this state jumped out of a hospital window. He remained in hospital for six weeks and four years later developed stiffness of the right arm and hand. After a further two years a tremor of the right hand developed. He was investigated neurologically and Parkinson's disease was diagnosed. From that time he was treated with carbidopa and levodopa (Sinemet). In 1976 he was referred to the Hospital for Tropical Diseases for an opinion as to whether the Parkinsonism could in any way be related to the insect bite received six years earlier.

Investigations for a wide variety of tropically acquired non-viral infections

Frequency of flatulence syndrome after ingesting animal food products from different sources

Species	Product	Source	Country and date of origin		
			Britain pre-1971	Britain post-1972	Denmark (1976)
Chicken	Meat Stock Eggs	General Free range Nature Food*	Frequent	Frequent	None
			Frequent	None	
Pig	Bacon Pork Pork Products	General Special†	None	None	
			Frequent	Frequent	None
Sheep	Stock Lard Lamb	General	None	None	None
			None	None	None
Bovine	Beef Stock	General	None	None	None
			None	None	None
	Milk Cheese	Bulked‡ Limited herd General	Intermittent	Intermittent	None
			Rarely	Rarely	None
			Occasional	Occasional	None

* Guaranteed fed without additives.
† Known not to have been treated with tetracycline.
‡ Mild syndrome presumably because of the inclusion of milk from cows treated for mastitis. Veal has been avoided since the diet was started.