Carotid stenosis due to clamp injury

We report a case of symptomatic stenosis of the common carotid, which we consider to have been caused by arterial clamping during a previous operation.

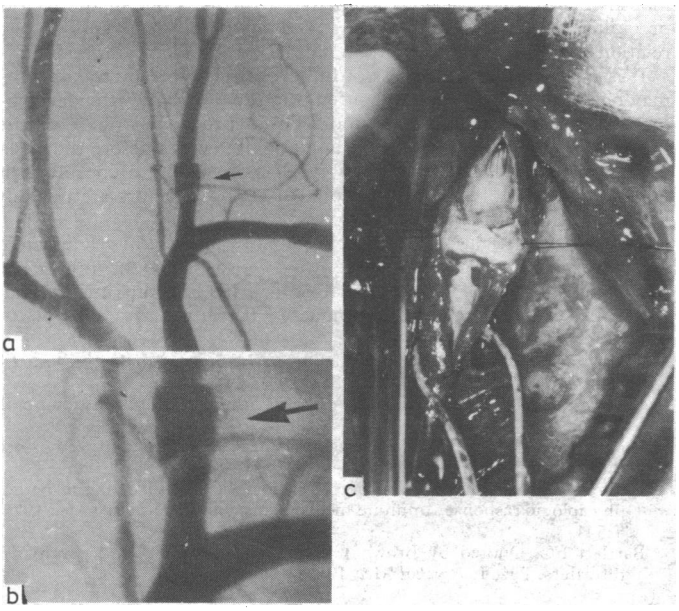
Case report

A 52-year-old hypertensive woman was referred in May 1978 with recurrent transient ischaemic attacks affecting the right arm, usually associated with transient loss of consciousness. Bilateral carotid angiography showed 95% stenosis at the origin of the left internal carotid artery and an atheromatous plaque at the origin of the right internal carotid artery without appreciable stenosis.

An uneventful left carotid endarterectomy using a Brenner shunt was performed; four weeks later she was well but a loud left carotid bruit persisted. Over the next 16 months she suffered further episodes of loss of consciousness, which were associated with headache but no focal signs. In October 1979 these attacks were accompanied by paraesthesia of the left arm and blurred vision, and a right carotid endarterectomy was performed. Three months later further transient ischaemic attacks affecting the right arm occurred, which were thought to be due to restenosis of the left internal carotid artery and release of emboli, but despite treatment with antiplatelet drugs and then with warfarin her symptoms increased in frequency.

An electroencephalogram and brain scan were normal. Spectral analysis of continuous-wave Doppler signals disclosed turbulence in the left common carotid, but normal sonograms were obtained from the internal and external carotid arteries. An arch aortogram showed an ususual stenotic lesion (figure (*a*), (*b*)) in the mid-portion of the left common carotid at about the site where an arterial clamp would have been applied at the time of the left carotid endarterectomy. There was no appreciable restenosis at the carotid bifurcations.

The left common carotid was re-explored and found to contain two circumferential intimal flaps about 1 cm apart (figure (*c*)), which considerably obstructed flow. These were separated by a bare fibrous area but there was no adherent thrombus. The intimal flaps were excised and a vein-patch angioplasty performed. Postoperative Doppler studies indicated improved flow in the common carotid, and a sonogram was normal. She made a satisfactory recovery and did not have any further ischaemic attacks.



Stenosis of left common carotid on arch aortography (*a*), with enlarged view (*b*) showing double stenotic lesion. Double circumferential intimal flaps were found at operation (*c*).

Comment

Intimal injury at the site of arterial clamping is not well documented. Henson and Rob[1] reported a comparative study of the effects of different arterial clamps applied to the gastroepiploic artery during partial gastrectomy and described a case of early occlusion caused by damage by a clamp during repair of a lacerated femoral artery. Slayback *et al*[2] in a study of various clamps on normal and atherosclerotic rabbit arteries reported that varying degrees of intimal damage were almost a constant finding. Harvey and Gough[3] studied the effects of five vascular clamps on dog femoral arteries and found that the degree of vessel-wall damage depended on the type of clamp used and the pressure exerted by the jaws of the clamp.

We have been unable to find any references to clamp-induced carotid stenosis. Thompson[4] did not mention it in his paper on the complications of carotid endarterectomy nor did Callow[5] in a collective review of the incidence of restenosis after 13 470 operations.

We believe that this lesion was caused either by the application of an arterial clamp (deBakey type) before and after shunting or by the pressure of a silk ligature snare used to maintain the position of the Brenner shunt, resulting in an intimal fracture. Perhaps surprisingly, the distal flap did not dissect and produce a carotid occlusion. Fortunately, this appears to be rare, but our case illustrates one of the hazards of arterial compression by clamps and snares.

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2 Slayback JB, Bowen WW, Hinshaw DB. Intimal injury from arterial clamps. *Am J Surg* 1976;**132**:183-8.
3 Harvey JG, Gough M. The traumatic effect of the vascular clamp. *Br J Surg* 1981;**68**:267-72.
4 Thompson JE. Complications of carotid endarterectomy and their prevention. *World J Surg* 1979;**3**:155-65.
5 Callow AD. An overview of the stroke problem in the carotid territory. *Am J Surg* 1980;**140**:181-91.

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Recurrent abdominal pain and lactose intolerance in childhood

Recurrent abdominal pain is one of the most common ailments seen in paediatric practice, affecting about 10% of schoolage children. The aetiology of this problem remains ill defined. Two recent studies from the USA, using tests for lactose malabsorption and elimination diets, incriminated lactose intolerance as the cause of the abdominal pain in over 25% of children.[1 2] In contrast, Christensen, in a study of 50 children with recurrent abdominal pain in Denmark, detected only one case fulfilling the criteria of lactose intolerance.[3] Not surprisingly, the American findings do not have worldwide validity in view of ethnic and regional variations in the age of onset of lactose malabsorption.[4] The purpose of our study was to establish the incidence of lactose intolerance in Caucasian children with recurrent abdominal pain in the north of England.

Patients, methods, and results

A lactose-hydrogen breath test was performed in 26 Caucasian children with a history of recurrent abdominal pain (age range 4-14 years, mean 9 years). Recurrent abdominal pain was defined as three or more episodes of unexplained pain severe enough to affect activity and occurring over a period of three months. Before inclusion in the study each child underwent a thorough physical examination and full blood count and urine analysis were carried out. In most children an attempt to find an organic cause led to more extensive investigation and included radiological studies.

The hydrogen breath test is a measure of the change in breath hydrogen concentration caused by bacterial fermentation of unabsorbed sugar in the colon after a sugar load. It has the advantage of being non-invasive and more sensitive than the conventional lactose tolerance test, in which blood sampling is required and the results are affected by the rate of stomach emptying.

After an overnight fast the children were given lemon-flavoured lactose (2 g/kg; maximum 50 g) as a 20% aqueous solution. Breath samples were collected by the nasal prong technique at 30-minute intervals for two hours.[5] A rise in hydrogen concentration of 10 parts per million above the baseline value at 90 or 120 minutes was regarded as indicating lactose malabsorption.[2] Breath samples were analysed for hydrogen by gas chromatography. No child was taking antibiotics when tested.

A result indicating lactose malabsorption was obtained in three of the 26 (12%) children, two of whom experienced pain after ingesting the lactose. In one of these two children a six-week lactose-free diet resulted in an appreciable improvement in symptoms. Thus only one of the 26 children (3·8%) had the combined features of lactose malabsorption with abdominal pain, which was induced by ingestion of lactose and relieved by withdrawal of it.

Comment

Lactose intolerance should not be diagnosed by breath test alone: a positive breath test should be accompanied by symptoms that are induced by ingestion of a lactose load and relieved by removal of lactose from the diet. Using these criteria our results suggest that lactose intolerance is an uncommon cause of recurrent abdominal pain in white children in the north of England. The routine use of the hydrogen breath test for investigating recurrent abdominal pain is debatable. If full investigation is considered to be desirable by virtue of the duration or severity of the symptoms, however, lactose intolerance represents one of the treatable causes and should therefore be excluded, and the hydrogen breath test is a convenient non-invasive method.

We thank Staff Nurse T Robinson and Miss H Galley for technical help.

[1] Liebman WM. Recurrent abdominal pain in children: lactose and sucrose intolerance, a prospective study. *Pediatrics* 1979;**64**:43-5.
[2] Bart RG, Levine MD, Watkins JB. Recurrent abdominal pain of childhood due to lactose intolerance. *N Engl J Med* 1979;**300**:1449-52.
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Rheumatoid arthritis: a psychiatric assessment

Although rheumatoid arthritis is regarded by many psychiatrists as a psychosomatic disease,[1] the importance of psychological factors has not achieved wide acceptance among rheumatologists.[2] No controlled study has been published of emotional events preceding onset in new cases.

We interviewed all women with rheumatoid arthritis seen within one year after the onset of symptoms and control women matched for age, and report here our results.

Subjects, methods, and results

All patients were investigated by a rheumatologist (DAB). Those with symptoms of more than one year's duration were excluded. Patients believed to be developing early rheumatoid arthritis were referred for psychiatric interview. One year later they were reviewed and 13 were withdrawn because the diagnosis was not certain. The 22 patients remaining in the study had definite or probable rheumatoid arthritis (criteria of the American Rheumatism Association).

Each control was selected from women with the same initial as the patient in a GP's case index, the first woman with the same year of birth being selected.

The psychiatric interviews (by GHBB) of patients and controls lasted 45 to 60 minutes. Inquiry was made about the history of joint symptoms (or any recent illness in controls); and about the subject's family history, including her relationship with her parents, and her personal history, including her school career, work, and relationships with men. She was asked about her pre-existing personality and previous illnesses. Her psychological reactions to rheumatic symptoms and her present mental state were assessed. Lastly, specific inquiry was made about important life events during the year before the onset of symptoms (or the equivalent year in controls). After a general inquiry specific questions were asked about events affecting close relationships, jobs, accommodation, and financial security. Fisher's exact probability test (one-tailed) was used throughout.

Twenty-two patients with rheumatoid arthritis and controls aged 22 to 76 (mean 52) years were studied. The patients were seen on average seven and a half months after the onset of symptoms.

Twelve of the patients reported a bad relationship in childhood with their mothers compared with five controls ($p = 0.03$). Three of the patients and none of the controls described serious mental illness in their mothers. Fifteen patients reported life events in the year before the onset of arthritis, compared with eight controls ($p = 0.03$) (table). In 12 of the 15 patients

Life events reported

In patients	In controls
Events carrying moderate or considerable long-term emotional threat	
Husband's firm bankrupt	Learnt husband not paying mortgage
Moved to disliked job and had to move flat	Son (aged 20) in court
Unhappy second marriage with many stormy scenes	Husband very ill
Important relationship broken. Made redundant	
Transfer from much loved job	
Decided to terminate 20-year relationship	
Her severely depressed mother came to live with her	
Started college late; socially isolated	
Recent cohabitee (of seven years) moved in with another girl	
Only daughter getting married abroad	
New disliked job. Closest friend died	
New job, hostile manager; job threatened	
Events carrying less serious emotional threat	
Pleasant change in work	Close friend moved away
Widowed sister very ill	New, pleasant job
Death of cat ("most upsetting event")	Daughter had acute appendicitis
	Daughter moved away. Gave up job
	Retired. Son's wife left him

(compared with three of the controls) the events were assessed as carrying a moderate or considerable long-term emotional threat[3] ($p = 0.005$). In 11 of the 12 patients the interval between the event (or latest event) and the onset of symptoms was less than three months. Only three patients with rheumatoid arthritis did not report a bad relationship with their mother or a life event. They were the three oldest in the study (aged 68, 73, and 76 years).

Comment

These findings suggest the possibility that emotional stress in the months before the onset of rheumatoid arthritis is one of the factors precipitating the disease process[4] and that women who report a bad relationship with their mothers in childhood are more vulnerable.

It is unlikely that the excess of life events reported by the patients may be accounted for by their attempting to "explain"[5] the development of the illness or by an undiagnosed prodromal phase of the illness. Patients who experience traumatic life events before the onset of rheumatoid arthritis may possibly be more likely to consult their doctors and to be referred to hospital; but these factors are unlikely to explain the discrepancy found.

Further investigation of psychosomatic factors in rheumatoid arthritis is necessary and now under way. One aspect is the importance in the management of early rheumatoid arthritis of taking into account recent life events as well as the impact of the disease.

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Correction

Ketotifen overdose: surveillance of the toxicity of a new drug

An error occurred in the table of this paper by Drs D B Jefferys and G N Volans (30 May, p 1775). The plasma concentrations of ketotifen should have been expressed in μg/l, not mg/l.