

SHORT REPORTS

Bran in Hypertriglyceridaemia: A Failure of Response

Atheroma is still the major cause of mortality in the Western world, and the difference in prevalence of atheroma in developed and developing countries has caused speculation that absence of a dietary constituent may play a major aetiological part in the production of arterial disease. Interest has recently centred on the possible role of dietary fibre intake in the pathogenesis of atheroma.

Bran reduces the bacterial degradation of bile salts in the colon¹ and may increase colonic transit times, though these results are difficult to interpret because of the variability of these values.²

Several workers have suggested that dietary roughage may play a significant part in lipid metabolism. Moore³ has shown that atheromatous degeneration in rabbits that were fed an atherogenic diet was reduced by the presence of dietary roughage. Recently Heaton and Pomare⁴ showed a significant lowering of serum triglycerides and plasma calcium levels in both normal volunteers and patients with gall bladder disease when unprocessed wheat bran was added to their diet. Connell *et al.*,⁵ however, failed to show any effect of bran on cholesterol or triglyceride levels in a group of normal medical students. The exact place of bran in the management of lipid disorders is therefore uncertain.

In the light of these conflicting reports and because raised triglyceride levels are a significant risk factor in the genesis of atheroma we thought it important to clarify the problem by studying the effect of wheat bran on raised triglyceride levels in patients with primary type IV hyperlipoproteinaemia.

Patients, Methods, and Results

Seven men were selected from patients attending a lipoprotein clinic. Patients were seen in the fasting state and lipoprotein typing was performed initially on three separate occasions. Unprocessed wheat bran 50 g/day in two divided doses was then added to their normal diet. Patients were weighed before entering the study and were reviewed at two, eight, and 12 weeks. On each occasion fasting lipoprotein levels were measured and intravenous fat tolerance tests were performed by injecting 1 ml/kg of 10% Intralipid and sampling blood every 30 minutes for two hours. The results of the fat tolerance tests were expressed as the clearance coefficient (K_2 ; as percentage per minute), this being the fractional removal rate of injected triglyceride. Two patients were withdrawn from the trial, one because of the occurrence of angina associated with an increase in weight and one because of diarrhoea.

Lipid Profiles in Five Patients with Type IV Hypertriglyceridaemia during Bran Treatment. Results are Means \pm S.D.

	Before Bran	Bran Treatment		
		2 Weeks	2 Months	3 Months
Cholesterol (mmol/l):	6.7 \pm 1.2	6.9 \pm 0.8	6.9 \pm 0.8	6.9 \pm 0.8
in low density lipoproteins ..	4.6 \pm 0.9	4.6 \pm 0.9	4.3 \pm 0.6	4.5 \pm 0.8
in very low density lipoproteins ..	1.0 \pm 0.3	1.0 \pm 0.2	1.1 \pm 0.3	1.2 \pm 0.3
in high density lipoproteins ..	1.0 \pm 0.2	1.2 \pm 0.2	1.5 \pm 0.1	1.3 \pm 0.2
Triglyceride (mmol/l)	3.2 \pm 0.9	3.4 \pm 1.8	4.2 \pm 1.5	3.2 \pm 1.3
K_2 (%/min)	3.7 \pm 1.0	3.8 \pm 0.9	4.1 \pm 1.0	
Fasting blood sugar (mmol/l)	5.0 \pm 1.2	5.0 \pm 1.1	5.4 \pm 1.2	4.9 \pm 0.9
Weight (kg)	72 \pm 6	73 \pm 15	72 \pm 14	73 \pm 15

Conversion: SI to Traditional Units—Cholesterol: 1 mmol/l \approx 38.6 mg/100 ml. Triglyceride: 1 mmol/l \approx 88.5 mg/100 ml. Blood sugar: 1 mmol/l \approx 18 mg/100 ml.

The results are summarized in the table. There was no change in the weights of the patients over the 12 weeks. Similarly, there was no change in the serum cholesterol or serum triglyceride levels. Intravenous fat tolerance tests failed to show any effect of bran on the handling of intravenously administered Intralipid.

Discussion

The large amounts of dietary fibre used in this study were enough to greatly increase stool bulk, and all patients completing the study commented on the increased size and frequency of their stools. If stool bulk and intestinal transit time are important factors in the metabolism of fat then we would have expected to see changes in blood lipid levels over the period of the study. The results show clearly, however, that bran in a dose of 50 g/day for 12 weeks does not alter serum cholesterol or serum triglyceride levels.

These results agree with those of Connell *et al.*⁵ but are at variance with those reported by Heaton and Pomare.⁴

Though only a few patients were studied we feel that the comprehensive biochemical profiles show conclusively that primary hypertriglyceridaemia fails to respond to three months' treatment with unprocessed wheat bran.

¹ Pomare, E. W., and Heaton, K. W., *British Medical Journal*, 1973, 4, 262.

² Eastwood, M. A., *et al.*, *Lancet*, 1974, 1, 1029.

³ Moore, J. H., *British Journal of Nutrition*, 1967, 21, 207.

⁴ Heaton, K. W., and Pomare, E. W., *Lancet*, 1974, 1, 49.

⁵ Connell, A. M., Smith, C. L., and Somsel, M., *Lancet*, 1975, 1, 496.

Department of Medical Cardiology, Royal Infirmary, and Centre for Rheumatic Diseases, Glasgow

W. F. BREMNER, M.B., M.R.C.P., Registrar

P. M. BROOKS, F.R.A.C.P., Research Fellow

J. L. H. C. THIRD, M.B., CH.B., Registrar

T. D. V. LAWRIE, M.D., F.R.C.P., Professor of Medical Cardiology

Crohn's Disease and Psoas Abscess

The almost complete eradication of tuberculosis¹ in this country has changed the aetiology of psoas abscess. This type of abscess is now predominantly associated with disease in adjacent organs² or of a "spontaneous" nature.³ Though the formation of a psoas abscess as a complication of Crohn's disease has been described,^{1 2 4} we here report for the first time a case presenting as an acute general surgical emergency.

Case Report

A 19-year-old man was admitted as an emergency in October 1973 with abdominal pain which had become increasingly severe and was localized in the right iliac fossa. There was no history of nausea, vomiting, or change in bowel habit but he had lost four kg over the three months before admission. Physical examination showed a fever of 39°C with an associated tachycardia. He was obviously in pain with severe psoas spasm and signs of local peritonitis in the right iliac fossa. Hip and rectal examination showed nothing abnormal. Appendicitis with psoas irritation was diagnosed and a laparotomy performed. At operation the appendix was normal but a large right psoas abscess was found. The terminal ileum was thickened and adherent to the psoas fascia. These changes were thought to be secondary to the inflammatory lesion. The ileum was freed and the abscess drained. A swab from the pus contained a mixed growth of coliforms, bacteroides, and non-haemolytic streptococci. No acid-fast bacilli were found. Postoperative progress was initially satisfactory, but by the 10th day his condition had deteriorated with vomiting, increasing abdominal pain, and a swinging temperature. An intravenous pyelogram also showed right ureteric obstruction with mild hydronephrosis. Re-exploration was therefore performed on the 14th day after operation. The abscess had reformed and the ileal changes were more extensive and charac-

Biochemical Values

	1st Admission	2nd Admission (Days after)							
		0	1	4	17	30	60	120	360
Bilirubin ($\mu\text{mol/l}$)	170	140	110	140	60	25	20	12	14
Alkaline phosphatase (K.A. units/100 ml)	24	30	31	35	13	10	12	9	8
SGOT (R.T. units/ml)	65	65	55	60	25	27	20	21	20
Eosinophils (% and absolute count)	not done	18/1500	15/1230	58/5974	10/760	14/976	3/162	4/224	3/200

Conversion: SI to Traditional Units—Bilirubin: $1 \mu\text{mol/l} \approx 0.06 \text{ mg/100 ml}$.

teristic of Crohn's disease. The area was resected and the abscess drained. Histological analysis confirmed Crohn's disease of the terminal ileum. Despite a deep vein thrombosis his subsequent progress was satisfactory and he remained well.

Discussion

In north-east Scotland the single most common cause of psoas abscess has been reported to be Crohn's disease.¹ A psoas abscess due to Crohn's disease is the result of direct contact of any fissure in ulcerated intestine which penetrates backwards, on the right from the terminal ileum and on the left from jejunum or sigmoid colon. The pathogens in the abscess, formed by spread from adjacent organs or Crohn's disease, are usually a mixture consisting predominantly of *Escherichia coli* and anaerobic bacteria. This is in direct contrast to the "spontaneous" variety of abscess, where staphylococci predominate.^{3, 5} Bacteriological examination may therefore be useful in differentiating the aetiology,² as may recognition of the fact that over half the spontaneous cases occur in children under 15 years,³ with a predominance in boys. Poor nutrition and socioeconomic background have also been emphasized as being important underlying factors in these spontaneous cases.³

During the last five years we have seen only one other emergency case of psoas abscess, and that was a "spontaneous" staphylococcal abscess. No case of tuberculous psoas abscess has been reported.

Though Crohn's disease presenting as pain in the right iliac fossa is not uncommon, the initial presentation of Crohn's disease as a surgical emergency with a psoas abscess, as in our case, is rare. The change in aetiology of psoas abscess and particularly its association with Crohn's disease should be emphasized. In our case this was not appreciated, and on reflection ileal resection as well as drainage of the abscess at the initial operation would have been the treatment of choice.

We thank Mr. W. K. Eltringham for permitting us to report details of a patient under his care.

¹ Kyle, J., *Gastroenterology*, 1971, 61, 144.

² Hardcastle, J. D., *British Journal of Surgery*, 1970, 57, 103.

³ Firor, H. V., *Clinical Paediatrics*, 1972, 11, 228.

⁴ Van Patter, W. N., et al., *Gastroenterology*, 1954, 26, 347.

⁵ Lam, S. F., and Hodgson, A. R., *Journal of Bone and Joint Surgery*, 1966, 48A, 867.

The Surgical Unit, Bristol Royal Infirmary

N. I. RAMUS, F.R.C.S., Senior House Officer

B. A. SHOREY, F.R.C.S., Senior Registrar

A Case of Clonorchiasis in England

Infection with the Chinese liver fluke, *Clonorchis sinensis*, is endemic in the Far East, where it is responsible for considerable morbidity and mortality.¹ The adult flukes live in the bile ducts and produce eggs which are passed in the stools. The life cycle involves two intermediate hosts: a freshwater snail and then a fish, often of the carp family. Man becomes infected by eating the cysts present in the flesh of raw or partially cooked fish. Patients with clonorchiasis seen in the

West are usually immigrants who have recently left endemic areas. The following case occurred in a man who had been in Great Britain for 12 years before clonorchiasis was diagnosed.

Case History

The patient, a 38-year-old man from Hong Kong, came to Britain in 1961. In 1967 he began to have recurrent attacks of epigastric pain, lasting for a day and associated with vomiting. These recurred about every two months. In October 1973 a more severe episode lasting for several weeks and in which the pain radiated to the back necessitated admission to another hospital. He noticed for the first time that his sclerae were yellow and infective hepatitis was diagnosed. Biochemical values obtained are shown in the table. He improved spontaneously, left hospital, but was then admitted almost immediately as an emergency to the Newcastle General Hospital with a recurrence of his symptoms.

He was afebrile (and remained so), his liver was palpable 4 cm below the costal margin, and his spleen was slightly enlarged (see table). Serum amylase was normal. A clinical diagnosis of clonorchiasis was made, but repeated stool specimens were examined for parasite eggs without success. A week after admission duodenal aspiration was performed and the fluid was found to contain a few ova of *C. sinensis*. The complement fixation test for *C. sinensis* (available later) was positive at 1/160.

Intravenous cholangiography showed filling defects in the common bile duct, and the gallbladder. Because of these, and the continuing evidence of obstruction, surgical exploration was undertaken (day 13). Adult flukes were found in the left and right hepatic ducts and there was slight stenosis of the right hepatic duct. Chronic pancreatitis was present. A liver biopsy showed bile stasis, and an inflammatory infiltrate of lymphocytes and eosinophils. There was no bile duct proliferation, cirrhosis, or malignancy. After cholecystectomy, a T-tube was inserted and many ova were found in the bile draining from this, until it was removed uneventfully on the seventh post-operative day. He was treated with bithionol, in a dose of 50 mg/kg on alternate days, to a total dose of 42 g, suffering transient nausea initially but no other side effects.

Comment

Parasitic disease must be considered in any immigrant. The diagnosis of clonorchiasis may be easy if sufficient eggs are produced to appear in the stools, but duodenal aspiration is often more helpful. Eosinophilia is a valuable clue when it occurs, though in some cases a polymorphonuclear leucocytosis is more common.²

Infection is frequently symptomless, but there are many complications, of which the most common are bacterial cholangitis, cholelithiasis, acute pancreatitis,³ and cholangiocarcinoma.⁴ It is estimated that 15% of the cases of liver carcinoma in Hong Kong are directly due to clonorchiasis.⁴

Bithionol (2,2'-thiobis 4,6-dichlorophenol) has replaced chloroquine as the drug of choice in the treatment of clonorchiasis. The treatment remains unsatisfactory and surgical intervention is often required in the management of obstruction, recurrent infection, or carcinoma.

Our patient has now been asymptomatic for one year and repeated duodenal aspirations have shown no ova. Cholangiography now shows a normal duct system, and all liver function tests are normal (table).

¹ Viranuvatti, V., et al., *Progress in Liver Disease*, 1972, 4, 537.

² Cartwright, A., *American Journal of Medicine*, 1949, 6, 259.

³ McFadzean, A. J., and Young, R. T., *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 1966, 60, 466.

⁴ Hou, P. C., *Journal of Pathology and Bacteriology*, 1965, 72, 239.

Newcastle University Hospitals, Newcastle upon Tyne

J. P. R. HARTLEY, B.M., M.R.C.P., Registrar in Medicine

ADRIAN P. DOUGLAS, M.B., M.R.C.P., Consultant Physician (Gastroenterology)