CASE REPORTS

Hyperlipaemic pancreatitis and the Pill

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THE ASSOCIATION between pancreatitis and hyperli-}

paaemia has been recognized for many years (Poul-


In the more common variety, hyperlipaemia

accompanies the attack of acute pancreatitis and

may persist for days, weeks and rarely months

before subsiding. Occasionally a basic abnormality

in serum lipids is uncovered by lipoprotein electro-

phoresis in a non-lipemic phase in between attacks,

although the quantitative lipid values are normal

(Greenberger et al., 1966). Less commonly the

pancreatitis appears to be directly due to the

overlying lipid abnormality as in the familial

or persistent lipoproteinamias of Fredrickson's

type I and V (Fredrickson, Levy & Lees, 1967).

The mechanism of the pancreatitis is not understood

in these latter cases; even more confusing is the

reason why only a small percentage of these people

develop abdominal pain or pancreatitis. Alcohol or

gallstones may occasionally precipitate attacks but

in the vast majority the attacks are spontaneous.

This report presents two patients with hyperli-

paaemia in whom the attacks of pancreatitis appeared

to be related to the administration of oral contra-

ceptive pills.

Case 1

A white female aged 29 years was admitted to a

Military hospital on 30 March, 1963, with severe

abdominal pain. She had started Conovid (nor-

ethinodrel 2.5 mg, ethinylestradiol-3 methyl-ether

0.1 mg) on 11 March, 2 months after a spontaneous

abortion. The abdominal pain radiated through

to the back and was associated with vomiting. A

laparotomy was carried out on 2 April, and a firm,

enlarged pancreas was found. There was no fat

necrosis. A needle biopsy of the gland was done

and the histology showed 'necrotic pancreatic

tissue.' She was discharged on the eighteenth post-

operative day and immediately started on Conovid

again. Six weeks later a second attack of abdominal

pain occurred with all the classical features of

pancreatitis. The serum amylase was found to be

raised to 370 Somogyi units and treatment with

nasogastric suction, intravenous fluids and Trasylol

instituted. She remained in hospital for 32 days. On

this occasion her serum was noted to be 'milky'.

Conovid was recommenced on leaving hospital

and she suffered a third, but milder, attack 2 weeks

later. The attack settled after a few days and she

was referred to the Gastrointestinal Unit for further

investigation. Review of the history suggested a

possible association between the oral contraception

and the attacks of pancreatitis; there was no history

of alcohol, trauma or previous attacks of chole-

cystitis.

On examination: The patient appeared well, and

examination of the heart, chest, abdomen and central

nervous systems was non-contributory. There

were small subcutaneous xanthomatous deposits

at the site of previous venepunctures and the fundi

showed lipaemia retinalis. The following tests were

normal on numerous occasions: barium meal, cholecystogram, intravenous biligrafin, serum calcium,

blood urea, LE cells, liver function tests, serum

magnesium and sweat electrolytes. Protein electro-

phoresis showed a normal albumin and slightly

raised gamma-globulin on one occasion. There was

no pancreatic calcification. The secretin/pancreozy-

min pancreatic function test showed a low volume

and enzyme concentration but the glucose tolerance

test was normal. The oral contraceptive tablets were

stopped and she was advised to continue with

clofibrate and a low fat diet. She has had no further

attacks of abdominal pain during the past 6 years

despite withdrawal of clofibrate therapy after about
Table 1. Fasting lipid values in the two patients.

<table>
<thead>
<tr>
<th></th>
<th>Cholesterol (mg/100 ml)</th>
<th>Triglyceride (mg/100 ml)</th>
<th>Phospholipid (mg/100 ml)</th>
<th>NEFA (µEq/l)</th>
<th>Lipoprotein electrophoresis</th>
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<td>Case 1</td>
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<td>875</td>
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<td>725</td>
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<td>Brother to Case 1</td>
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<tr>
<td>Clofibrate</td>
<td>210</td>
<td>1260</td>
<td>262</td>
<td>290</td>
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<td></td>
<td>346</td>
<td>1558</td>
<td></td>
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<td>β Lipoprotein + +</td>
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<td>No pre β</td>
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<td>Case 2</td>
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<tr>
<td>Low fat diet</td>
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<td>β Lipoprotein + +</td>
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A year and the resumption of a normal diet shortly after.

The family were investigated and two of the members found to be lipaemic. A brother of 28, who was found to be lipaemic, had had several attacks of pancreatitis, many of which were related to previous excessive alcohol intake and had recently developed diabetes and her youngest brother of 11 years also had lipaemic serum. Her mother, father, two sisters and another brother had clear serum before and after a fatty meal.

Case 2

A white female aged 46 years was admitted for the investigation of the cause of recurrent attacks of pancreatitis. The first attack had occurred four and a half years previously and 2 months after starting oral contraception with 'Lyndiol' (lynestrenol 5 mg, methoxy-ethinyloestradiol 0.15 mg). She continued to have recurrent episodes of abdominal pain at 3-monthly intervals and was operated on elsewhere during a particularly severe episode. At laparotomy fat necrosis and an enlarged, oedematous pancreas was found and a cholecysto-enterostomy was done. The gallbladder was normal. She stopped the oral contraceptives for 9 months after the operation during which time she had no further attacks of abdominal pain. She suffered a further attack 2 months after recommencing her oral contraceptive, and continued having recurrent mild attacks at 3- or 4-monthly intervals. A further severe attack in January 1969, prompted her readmission to hospital. The attack settled on conservative measures and she was referred to the Gastrointestinal Unit for further investigation. There was no history of alcohol or trauma or family history of pancreatitis.

Examination showed a well-looking, somewhat obese female. The vital signs were normal and physical examination was non-contributory. The barium meal, intravenous cholangiogram, serum electrolytes, calcium, magnesium, blood urea, liver function tests, serum amylase, sweat electrolytes and protein electrophoresis were normal, but the serum appeared turbid and a random cholesterol was 326 mg/100 ml. Gastric acid secretion was low. The pancreatic function tests showed a low volume and enzyme response to secretin/pancreozymin stimulation and a borderline bicarbonate concentration and the glucose tolerance test was found to be abnormal. No members of her family were available for investigation. The oral contraceptive tablets were discontinued and a low fat diet instituted. There have been no further attacks of abdominal pain for the past 12 months. Her serum lipids at this stage were: cholesterol 299 mg/100 ml, triglycerides 543 mg/100 ml and phospholipids 337 mg/100 ml.

Discussion

In both patients the development of clinical pancreatitis occurred within days or weeks of commencing oral contraceptives. It seems unlikely that this was a chance association as recurrent attacks continued while the Pill was being taken and prolonged remissions occurred when these were discontinued. The marked triglyceridaemia and hypercholesterolaemia in the first patient was unquestionably familial in origin and it is likely that the disturbances in fat metabolism were present for many years preceding her attacks of pancreatitis. The nature of the hyperlipaemia in the second patient is less clear as none of her family was available for examination. However, the finding of
high triglyceride and cholesterol levels some months after the attacks in the absence of overt diabetes suggests a primary hyperlipoproteinaemia rather than a pancreatitis or hormone-induced abnormality. The mechanism of development of pancreatitis in hyperlipaemic states is obscure, the most favoured explanation being vascular sludging due to the chylomicronaemia. It is possible that oral contraceptives, which have been claimed to increase the tendency to vascular thrombosis and also to elevate the serum levels of certain blood clotting factors, may set the foundation for enhanced chylomicron aggregation and clustering. Alternatively the hormonal effect of the Pill may aggravate one or more of the mechanisms suggested for the development of secondary pancreatitis-induced hyperlipaemia, viz., acute diabetes, the release of triglycerides from areas of fat necrosis, pancreatic α cell damage, increased release of glycerides from the liver into the plasma, defective intravascular clearing of glycerides due to lipoprotein lipase inhibition or indeed, the aggravation of the pre-existing defect in lipid metabolism (Marks, Bank & Louw, 1968). Fredrickson has found that oestrogens tend to raise and progesterone to reduce serum glyceride levels (Glueck et al., 1969).

The findings in the cases represented in the present paper suggest that pancreatitis be considered in patients on oral contraceptives who develop abdominal pain. While there is no evidence that oral contraceptives precipitate pancreatitis in patients with normal serum lipids, it is possible that pancreatitis may be a real hazard in patients with a pre-existing hyperlipaemia.

Acknowledgments

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References


Complete agenesis of the lung

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Schneider (1909-1913) divided pulmonary agenesis into three main degrees:

(a) True agenesis—a group in which there is complete absence of bronchi, alveolar tissue and their blood supply.

(b) A group in which a rudimentary bronchus arose from the trachea with no pulmonary tissue investing its tip.

(c) A group with a poorly developed main bronchus invested by a fleshy mass of ill-developed pulmonary tissue.

Agenesis may be unilateral or bilateral, involve the whole lung, or be lobar or segmental. The diagnosis is usually made accidentally in asymptomatic patients by X-ray or by physical signs of mediastinal shift. Recognition of the true nature of the lesion is important, so that unnecessary interference is avoided.

Cases of isolated pulmonary agenesis are relatively rare as the condition is more commonly associated with serious malformations of other organs that do not permit prolonged life. Oyamada, Gasul & Holinger (1953) found a high association between pulmonary agenesis and anomalies of musculo-skeletal, cardio-vascular, gastro-intestinal and urogenital systems. Bronchography and angiography may be required to establish the diagnosis.
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