The investigation and aetiology of jaundice in a general practice

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JAUNDICE is an unusual sign in general practice as only 42 consecutive cases were seen in 5,400 patients during a five-year period. Neonatal jaundice is not included. The age structure of the practice means that the majority of patients fall into the age groups 0–10 years and 25–35 years and there are relatively few patients over the age of 65.

History

Emphasis in the history is placed on the following points:

1. *Symptoms*

   severe pain, rigors, pruritus, pale stools and dark urine suggest obstructive jaundice especially with gall stones.

2. *Social history*

   contact with infective jaundice especially in the family or school;
   high risk occupations for infective jaundice such as medical and laboratory workers;
   risk of leptospirosis—sewage and farm workers;
   geographical history—infective hepatitis being common on the Mediterranean littoral, the possibility of malaria;
   injections—including tattooing, ear piercing, and main-line addictive drugs.

3. *Drug history*

   includes excessive alcohol, transfusion of blood and blood products, and anaesthetics.

4. *Past medical history*

   of jaundice, gall stones, liver disease, pancreatitis, gastric disorders, operations on the biliary tract;
   removal of tumours such as from bronchus, breast, stomach and gut;
   splenectomy for haemolytic anaemias;
   recurrent mild jaundice might indicate Gilbert's disease or chronic hepatitis.

5. *Family history*

   of jaundice, haemolytic anaemia, alcoholism.

Examination

Emphasis is placed on:

1. abdominal examination—enlargement and tenderness of liver and spleen, presence of ascites.
2. enlargement of lymph nodes.
3. the throat—pharyngitis, tonsillitis, and petechial haemorrhages suggesting glandular fever.
4. the skin—macular exanthem of glandular fever.
5. liver failure—ascites, foetor hepatis, confusion, flapping tremor.

Investigations

If infective virus hepatitis is a possibility, specimens are labelled clearly since there is a danger in handling body fluids. A full blood count (excluding ESR if virus hepatitis is likely) and liver function tests (bilirubin, alkaline phosphatase, SGOT, plasma proteins and electrophoretic strip) requiring 10 ml of blood are done on the first day of presentation to the doctor.

A further blood count, liver function tests (bilirubin, alkaline phosphatase, SGOT, prothrombin time) as well as Paul Bunnell and examination for Australia antigen (usually associated with serum hepatitis) are done in the second week of illness. If the Paul Bunnell test is negative but there is significant atypical mononucleosis (more than 2,000 atypical cells per cmm) paired sera at two-week intervals are examined for cytomegalovirus antibody. If there is a high ESR and a long history of ill health with or without nausea, weight loss and jaundice, an auto-immune profile is requested; the presence of anti-nuclear factor in a titre of more than one in 32 suggests chronic progressive hepatitis (lupoid hepatitis); the presence of mitochondrial antibodies suggests primary biliary cirrhosis. Atypical mononucleosis often with initial leucopenia is seen in infective hepatitis, glandular fever and cytomegalovirus infection. A neutrophil leucocytosis suggests either cholangitis or leptospirosis.

Anaemia and a raised alkaline phosphatase suggest a gut neoplasm with liver secondaries. Anaemia is also a feature of haemolysis or bleeding from either varices, peptic ulcer or leukaemia and is an ominous sign. Occult bloods, reticulocyte count, Coomb's test, platelet count, serum iron and iron binding capacity are requested if marked anaemia is present. In obstructive jaundice an early rise in alkaline phosphatase is seen, sometimes with a secondary rise in the SGOT. In hepato-cellular jaundice due either to drugs or infection, an early rise in SGOT, often to 500 i.u. or more is seen. The later liver function tests are done, the less informative they are.

If abdominal pain is central or radiates to the left hypochondrium, and especially if gall stones are likely, serum should be taken for serum amylase because of the possibility of concurrent acute pancreatitis. Levels of more than 1,000 Somogyi units are almost diagnostic of the latter condition. Levels raised to between 200 and 1,000 units are more difficult to interpret because of their relative lack of specificity for pancreatitis.

A straight x-ray of the abdomen with a coned-down view of the right hypochondrium is used if gall stones are a possibility. If this is negative a cholecystogram is requested. The demonstration of calculi or a non-functioning gall bladder are probable indications for surgery.

If there is a history of recurrent jaundice and of skin photosensitivity, porphyria cutanea tarda is a strong possibility and the urine should be examined for excess of porphyrins; making this diagnosis means limitation of drug prescribing.

If there is a big liver and malignant disease is possible, the search for a primary site includes the use of a chest x-ray and sputum cytology for cancer of the bronchus, barium meal and occult bloods (and usually the presence of anaemia) for intestinal cancer, serum acid phosphatase for cancer of the prostate, and mammography for cancer of the breast.

Liver function tests are checked one month after the onset of jaundice—a slightly raised bilirubin with or without slightly raised SGOT is sometimes found in cases of infective hepatitis. Their persistence for three months suggests either chronic progressive hepatitis (serious prognosis), residual chronic persistent hepatitis (good prognosis) or Gilbert's disease. In this latter disorder most of the serum bilirubin level is provided by unconjugated bilirubin; in the presence of this finding a reticulocyte count should be done in order to exclude haemolytic anaemia as a cause of the raised unconjugated bilirubin.

Management

Gamma globulin is not given for household cases of infective hepatitis. The treatment advised is bed rest until the bilirubin level falls, frequent small meals with dominance of carbohydrate, and ('Stemetil') prochlorperazine for nausea. Alcohol is prohibited for at least three months.

Great care is needed in prescribing all drugs, not only because many drugs are toxic to the liver but also serum levels of drugs may be raised to dangerous levels as a consequence of the inability of the liver to detoxicate and excrete them. Particular care is needed in the use of anticoagulants, barbiturates, digoxin, diuretics, and major narcotics. These drugs should either be avoided or used in reduced dosage.

The great majority of patients with infective hepatitis are making subjective and objective improvement at the end of the second week of the illness. If the patient is ill at this time, hospital admission should be considered, because of both the possibility of multiple disease (e.g. infective hepatitis and acute leukaemia) and of liver failure.

Results

Table 1 shows the aetiology of the 42 cases. The diagnosis of infective hepatitis is usually made on epidemiological grounds, absence of Australia antigens, and by exclusion.

TABLE 1

AETIOLOGY OF 42 CONSECUTIVE CASES OF JAUNDICE IN A SINGLE GENERAL PRACTICE OF 5200 PATIENTS FROM 1967 TO 1972
(Excluding neonatal jaundice)

Infections		21
Virus		
Infective hepatitis (A)	13	
Serum hepatitis (B)	2	
Infectious mononucleosis	1	
Cytomegalovirus	1	
Coxsackie B5	1	
Bacterial		
E.coli cholangitis	1	
E.coli pyelonephritis	1	
Disseminated tuberculosis	1	
Drugs		5
PAS	1	
Rifampicin	1	
Chlorpromazine	1	
phenelzine ('Nardil')	1	
phenindione ('Dindevan')	1	
Gall stones		5
Malignancy		5
Metastatic enlargement of liver	3	
Carcinoma of pancreas	1	
Carcinoma of bile duct	1	
Cirrhosis		4
Alcoholic	2	
Cryptogenic	1	
Fibrocystic disease of the pancreas	1	
Others		
Thalassaemia in an Englishman	1	
Duodenal ulcer (second part of duodenum)	1	

Because of the age structure of the practice, the dominance of infective causes over drug, calculous and neoplastic causes is to be expected. Contact with possible infective hepatitis was described in seven cases (54 per cent) of those diagnosed as infective hepatitis. Occasional examples of nausea, liver tenderness, weight loss, fever and pale stools have been seen but with normal liver function tests—such patients have been excluded from this series.

Summary

The aetiology of 42 consecutive cases of jaundice in a single general practice is tabulated. Infective cases were dominant, and jaundice due to drugs, biliary calculi, and neoplastic disease were relatively unusual. An emphasis on drugs and occupational history is made, and investigation demands the use of blood counts and liver function tests in the first and second week of the illness. More sophisticated tests are ordered depending on pointers given by clinical examination and history, or by the simple blood tests.