The Ileo-Anal Pouch Operation

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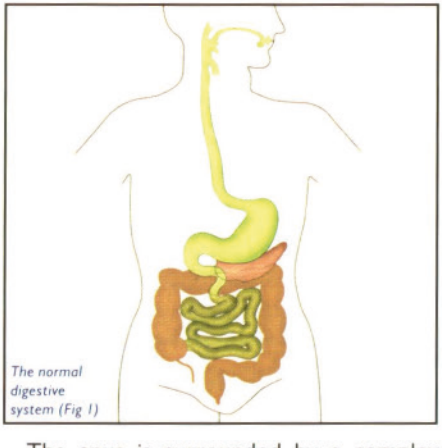
The ileo-anal pouch operation, sometimes called restorative proctocolectomy, which was first described in 1978 has been a major advance in the treatment of patients with ulcerative colitis. The operation has enabled many people requiring surgery for colitis and for some other diseases of the large bowel to avoid a permanent ileostomy.

A large number of these operations have been performed world-wide and, with the benefit of experience, there have been significant improvements. The great majority of patients now achieve a good result, although unfortunately the operation occasionally fails and a permanent ileostomy is required.

It is essential that patients considering this operation have as much information as possible so that they know what to expect. The aim of this article is to supplement the discussions which you will have with your surgeon.

Normal working of the intestines

In order to understand the pouch operation it is necessary to know in simple terms about the structure of the intestine (see Fig 1). Food which is eaten enters the stomach; from there it passes into the small intestine (or bowel) which is about 12 feet long. In the small intestine, digestive juices are added to the food enabling the nourishing parts of it to be absorbed into the blood stream. About one litre (two pints) of green liquid, the residue of bile and other digestive juices which have been added to the food and of the unabsorbed food, passes from the small bowel into the large bowel (or colon). The colon is about three feet long and is of much wider calibre than the small bowel. It begins in the lower right side of the abdomen and ascends towards the right rib cage, then across the top of the abdomen and down the left side to join the rectum. The rectum is the lower 15 centimetres (six inches) of the large bowel and it opens to the exterior via the anus. The main function of the colon is to absorb water back into the body leaving about 100 ml of solid residue or faeces which eventually pass into the rectum. Awareness of the presence of faeces in the rectum gives rise to the urge to empty it.



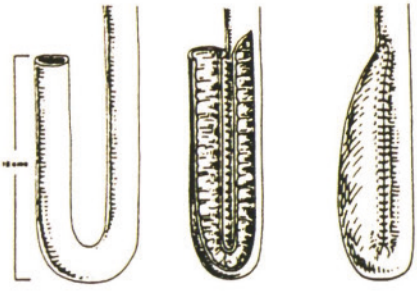
The normal digestive system (Fig 1)

The anus is surrounded by a complex ring of muscle, the anal sphincter, which normally holds it closed, giving control or continence. By contracting the anal sphincter it is possible to defer emptying the rectum until it is socially convenient. When it is convenient, the anal sphincter relaxes and the rectum empties through

the anus. This act of emptying the rectum is called evacuation or defaecation.

The Pouch Operation

In this operation all the large bowel, including most of the rectum, is removed. In the lower part of the rectum, the lining (mucosa) of the bowel is stripped off and removed leaving the sphincter muscles



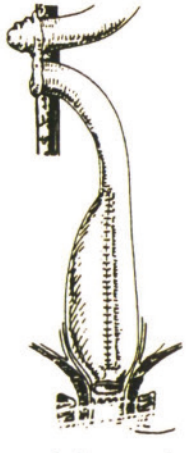
Formation of a pouch (Fig 2)

around the anus intact. The lower part of the small bowel is then used to construct a reservoir or pouch (Fig 2) which forms a substitute for the diseased rectum that has been removed. The new rectum or pouch is joined to the anus. An ileostomy is often made to divert the bowel content away from the newly made pouch until it is healed (Fig 3).

The anal sphincter is usually weaker after the operation and needs time to recover. About two months after the operation, x-rays of the pouch are carried out to check for healing. A small tube is passed through the anus into the pouch, dye is injected and x-rays taken. This is a rapid and painless examination which shows whether the pouch has fully healed. If these x-rays are satisfactory and if the anal sphincter muscles are sufficiently strong, the ileostomy can be closed, usually after two to three months. It is not necessary to open the previous scar at this operation; a small incision around the ileostomy is usually sufficient.

The pouch operation is often performed in two stages as described above. However, in some patients who are very ill, or who are taking high dose steroid drugs, or in whom the diagnosis is in doubt, it may be unwise to make a pouch in the first stage and the procedure is best done in three stages.

The first stage involves removing the colon. An ileostomy is made and the upper end of the rectum is either closed or brought to the surface at the lower end of the abdominal wound. This stage allows the patient to recover to a state of good health for the second stage which is performed at least three months after the first. At the second stage, the ileostomy is



Pouch with temporary ileostomy (Fig 3)

taken down and the pouch constructed. The remaining rectum is removed and the mucosa stripped. The pouch is joined to the anus and a new ileostomy is made at the site of the previous one. Stage three involves closure of the ileostomy. The pouch begins to function a few days after closure of the ileostomy. At first the faeces are very liquid and it is necessary to defaecate frequently, perhaps ten or more times per day. Control may be difficult and some leakage is quite common in the early period after operation. When a normal diet is resumed after several

days, the faeces become thicker, frequency of defaecation decreases and control improves.

By about four weeks after ileostomy closure, average frequency of defaecation is around six times per day and once at night. Improvement usually continues over many months so that after a year most people defaecate three to five times per day. About one third of people will need to evacuate at night. The faeces always remain soft. There is considerable variation in the result of the operation and some people will achieve a less good result than this whilst others will fare better.

Points to consider:

Which conditions are suitable for treatment by the pouch operation?

Most pouch operations are carried out for ulcerative colitis. The operation may be used for patients with familial adenomatous polyposis (familial polyposis coli). It has also been rarely used for patients with very severe constipation for which they would otherwise have required an ileostomy.

Are some people not suitable for the pouch operation?

Yes, there are several circumstances where the pouch operation is not advisable:

- The operation is not advised in someone with Crohn's disease because the risks of complications and failure are increased. One of the difficulties in selecting who is suitable for the pouch operation is excluding Crohn's disease. This can be very difficult even when samples of tissue from the bowel are examined under the microscope in the laboratory, hence the reason for undertaking a preliminary colectomy in some patients.
- If the anal sphincter is weak.
- Age: There are no hard and fast rules about age, but the operation is not usually advised in people over 55 years. In older patients, the sphincter muscles may be weaker and control more difficult. Also, the total amount of surgery required is less for the alternative operation of procto-colectomy and ileostomy than for the pouch operation.
- Obesity: The pouch operation is technically more difficult in overweight patients.
- Patient choice: Some patients prefer to have their disease treated in one operation and to have a permanent ileostomy rather than have two or three operations and accept the small risk of failure of the pouch operation. The ultimate decision on whether to opt for a permanent ileostomy or a pouch rests with the patient. The great majority of people who are suitable now choose the pouch operation.

Are all pouch operations the same?

No, whilst the principle of making a reservoir and joining it to the anus is always the same, there are some variations. The pouch shown in Fig 2 uses two limbs of small bowel and is sometimes described as a "J" pouch. Three ("S" pouch) or even four ("W") limbs may be used. Pouches may be made using sutures (stitches) or by means of a sophisticated mechanical device which uses fine metal staples. Similarly, the pouch may be joined to the anus either by suturing or by using a stapling device. Your surgeon will select the procedure which is most suitable in your case.

Is there an alternative to the pouch operation?

Yes, total proctocolectomy and permanent ileostomy. All of the colon and rectum and the anus together with the sphincter muscle are removed. The anal opening is closed and a permanent ileostomy is made.

What is an ileostomy?

An ileostomy is an opening of the small bowel on to the skin of the abdomen, usually on the right side just below the waist line. The bowel is turned inside out so that the bowel lining faces outwards and a small spout about one inch long is created. The faeces are liquid and drain continuously into a bag which sticks to the skin of the abdomen. A clip at the lower end of the bag allows it to be drained, usually about five times a day. The whole appliance is changed every three to five days. The skin around an ileostomy needs particular care to avoid contact with the faeces which are very irritant. Modern appliances are light and easy to wear and, with practice, most patients become very adept at managing their ileostomy.

Is a temporary ileostomy essential with the pouch operation?

The pouch operation is sometimes done without using a temporary ileostomy. However, this should only be undertaken under ideal conditions where the surgeon is confident that the pouch is well constructed and unlikely to leak. The ileostomy protects the pouch whilst it is healing. If there should be any leakage, exposure to faeces may lead to infection around the pouch and, possibly, even loss of the pouch. Also, if no ileostomy is used, the patient will have diarrhoea following the major operation of pouch construction and this may be more difficult to cope with than after the smaller operation of ileostomy closure. In addition, it is helpful to have had experience of an ileostomy which is the alternative to the pouch operation.

What are the results of the pouch operation?

Function of the pouch usually continues to improve over many months. Average bowel frequency is three to five per day after about one year. Some people, probably about a third, will need to get up at night. The great majority have full control of the bowel, although some leakage is not uncommon in the early period after ileostomy closure. In the long term only few patients need to wear a pad in their clothing because of soiling.

It is important to realise that the pouch operation does not restore completely normal function. It is an alternative to ileostomy, rather than an entirely normal bowel. Patients with an ileostomy empty their appliance with about the same frequency as pouch patients defaecate. People who have an ileostomy often need to empty their appliances at night and some may have an occasional leak.

Are there any long term ill-effects?

The pouch operation was first described in 1978. There is not, therefore, any experience of patients who have had a pouch for longer than this. So far there is no indication of late ill effects.

Can I get complications?

As with any major operation, complications sometimes occur. With all surgery involving the large bowel, there is a risk of infection. Antibiotics are always given at the time of surgery and help reduce this risk, but do not completely eliminate it. Some degree of narrowing quite commonly occurs at the area

where the pouch is joined to the anus. This sometimes needs to be stretched in the early period after the ileostomy has been closed. Bowel obstruction due to adhesions can occur after any abdominal operation. The frequency with which this occurs is similar for the pouch operation and for the alternative of proctocolectomy and ileostomy.

Some patients develop a condition called pouchitis, which is a type of inflammation in the pouch. It causes the pouch function to be less good with increased frequency of defaecation, urgency and sometimes bleeding. It is usually controlled with medication.

Can the operation fail?

Failures have become less frequent with increasing experience of the operation. Around 10% of operations fail, half of these within the first year. Failure may occur for a variety of reasons. If the operation is carried out on unrecognised Crohn's disease, the risk of failure is higher. For this reason great care is taken to avoid the pouch operation in Crohn's disease, but occasionally it is impossible to distinguish between ulcerative colitis and Crohn's disease. Other reasons for pouch failure include frequency, incontinence, uncontrolled pouchitis or infection. Each of these is an uncommon cause of failure, but taken together they account for most of the failures. Complete failure means returning to a permanent ileostomy. The risk of dying from the operation is very low; it is less than for most other major abdominal operations.

How long shall I be in hospital?

As with any operation, the length of hospital stay depends on progress and the avoidance of any set-backs. When the operation is carried out in one stage, without a covering ileostomy, it is usual to spend ten to twelve days in hospital. For the two stage procedure, ten to twelve days for the first stage and seven to ten days for the second stage would be usual.

The three stage operation requires a longer total stay. After the first operation, the removal of the colon and construction of an ileostomy, about two weeks in hospital is required. Ten to twelve days would be normal for the second stage, construction of the pouch. Closure of the ileostomy requires seven to ten days in hospital.

How long shall I be off work/school/college?

There are no rigid rules about the time required off work. It will depend upon the type of work and speed of the recovery of the individual. For the two stage procedure, most remain off work in the two to three months interval between the first stage and closure of the ileostomy. Some, particularly those at school or college, may wish to return between the operations. The timing of the second stage is not critical and it can usually be adjusted around school holidays to minimise the loss of time during term.

The three stage procedure requires a longer time off work. Patients are usually ill when the first stage is carried out and would be unlikely to return to work in less than two to three months. After this, timing of the other stages is not critical and can usually be adjusted to the patient's requirements.

However, after the second stage, most would take two to three months off work. The period of convalescence after closure of the ileostomy is variable depending on how quickly the pouch settles down to good function and upon the type of work. Obviously someone with a desk job and easy access to a toilet will be able to return to work earlier than a long-distance lorry driver. For most occupations, a recovery

period of about two months is necessary between ileostomy closure and return to work. The total time lost from work is usually several months. This is longer by about four months than for the alternative operation of proctocolectomy and permanent ileostomy. However, most patients feel this is an acceptable price to pay for the opportunity to avoid a permanent ileostomy.

Will I have to alter my diet?

Most people find that a small number of foods make the faeces more fluid. The same is true for patients with colitis or an ileostomy. Spicy foods, oranges and alcohol are common culprits. If you think a particular type of food has upset you, try it again cautiously at a later date. If it produces the ill-effect the second time, then it is unlikely to be coincidence and you may wish to avoid that particular food for the future. Most people with either an ileostomy or pouch make some, usually minor, alteration to the diet.

Can I drink alcohol?

Yes, in moderation. If taken in excess, particularly beer or red wine, it is likely to give you diarrhoea.

Will sexual activity be affected?

Both men and women almost always achieve normal function after the operation. However, after any major operation in this region, it may take some time before the inclination returns and for women there may be discomfort with intercourse in the first couple of months.

Can I travel abroad?

Yes, but take care if travelling to countries where you are likely to get diarrhoea. You will be susceptible to infective diarrhoea, so drink only bottled water and be careful with your diet. It is wise to take some anti-diarrhoea pills with you. Never travel abroad without adequate health insurance just in case you are unlucky enough to be ill.

Can I play sport?

Yes, virtually no sports are excluded.

Can I have children?

Some women have had children following the pouch operation. During pregnancy and for about three months after delivery, the frequency of night defaecation increased. Otherwise there was not much change in pouch function. Sometimes delivery is by caesarean section to avoid the risk of any damage to the anal sphincter. However, this is not always necessary and your obstetrician will advise about the safest method of delivery.

How can I obtain further information?

This article will not have answered all your questions. It is intended to complement, not replace, discussion of the operation with your surgeon and stoma care nurse. Please do not hesitate to ask if you are unsure about any aspect of the operation. Write your questions down beforehand so that you do not forget.

You may wish to talk to someone of your own sex and age group who has already had the operation and this can be usually arranged. ***ia*** has members who either have an ileostomy or have had pouch surgery and are willing to visit new patients, both before or after their operation.

The insight and experience of these 'visitors' is of enormous value and reassurance to patients facing life with an ileostomy and to those deciding whether to have an ileo-anal pouch operation or a permanent ileostomy.