The clinical significance of raised factor VII levels is not certain, but we have shown increased levels in patients with recent thrombosis (Poller, 1957; Thomson and Poller, 1965). Similar changes during pregnancy and the puerperium have been regarded as evidence of a thrombotic tendency. The worrying feature is that increasing duration of oral contraception appears to result in proportionately raised factor VII levels.

The raised factor X activity confirms the findings of Hougie *et al.* (1965), but did not seem as great in the oral contraceptive groups when compared with pregnancy. So far there is no evidence that the factor X rises are cumulative.

The changes in pregnancy appeared to be more pronounced than in the oral contraceptive group, but factor VII levels rose to a similar extent after two years, and the duration of the cumulative effect is not yet known.

Summary

A further report on coagulation studies on a group of women taking a variety of oral contraceptives confirms the presence of increased factor VII activity from the third month of their course. With the inclusion of results from women who have had longer courses the whole group now shows significantly

increased factor VII activity. There is new evidence that the effects on factor VII may be cumulative. In addition, a significant rise in factor X was detected in the same group from the third month onwards, though the changes were not so great.

A broader spectrum of clotting tests appeared to be accelerated during normal pregnancy than during oral contraception, and both factor VII and X levels were higher when comparing trimesters of pregnancy with a similar period on oral contraceptives. After a two-year course the rise in factor VII levels was of the same order. It is important to determine whether factor VII goes on increasing with more prolonged courses of oral contraception.

We are grateful for the cooperation of the practitioners in the South Manchester Area, and the Manchester Family Planning Clinic. We are indebted to Dr. M. C. G. Israëls for supplies of factor-VIII-deficient plasma used in our assays, and to the Manchester Regional Hospital Board for a grant for thrombosis research.

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Colostomy Management by the Irrigation Technique: Review of 165 Cases

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For many years people have argued over the relative merits of the two main methods of colostomy management—namely, colostomy wash-outs by patients or management by dietetic means. Grier *et al.* (1964) had rather disappointing results from an interrogation of some 50 colostomy patients being managed on the dietetic regimen at a variety of hospitals.

Present Investigation

There seems to have been no comparable survey of patients who have been taught to manage their colostomies by the irrigation technique. It was therefore thought worth while to carry out a survey (in 1963) of all the colostomy cases assumed to be living at this date, and whose abdomino-perineal excisions of rectum had been performed at the Gordon Hospital. For this purpose the following questionnaire was sent to 216 patients:

1. How long have you had your colostomy?
2. How often do you wash it out?
3. What time of day do you do your wash-outs?
4. How long does the wash-out take (including cleaning the apparatus)?
5. Does it work between wash-outs?
6. Are you able to lead a normal life?
7. Are you able to eat normal food?
8. Do you ever wear any form of colostomy bag?
9. Have you ever had any complications with your colostomy?
10. Do you ever take anything for your bowels?

Of the 216 patients three had died within the previous few months, one had emigrated, and 47 could not be traced (13 changed addresses), leaving 165 who replied, some at great length. It is upon the answers of these patients that observations are made.

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Table I shows the number of years that patients have had their colostomies. It soon became apparent that, despite their original training, some patients had ceased to wash out their colostomies altogether for various reasons, ranging from old age to the advice of friends, while others were washing out at various intervals other than daily. Table II shows the distribution

TABLE I.—Number of Years Patients had Colostomies

Years since Operation:	1	2	3	4	5	6	7	8	9	10
No. of patients	6	20	12	17	6	16	9	11	7	13
Years since Operation:	11	12	13	14	15	16	17	18	19	20+
No. of patients	18	7	9	6	3	1	1	0	0	3

TABLE II.—Frequency of Wash-outs

Not at All	Once Daily	Alternate Days	Every Third Day	Once a Week	Five Times a Week (Not at Week-ends)	Rarely
34	113	7	4	3	3	1

of patients according to their frequency of wash-outs. Linked with this is the question of whether the colostomy functions between wash-outs or not. In 47 patients it did not function, in 58 it rarely functioned, and in 23 it occasionally functioned.

This accounts for 128 of the 165 cases reviewed. The remaining 37 cases included 34 who ceased wash-outs either of their own accord, usually because of old age and infirmity, or on the advice of other hospitals, and three who failed to answer this particular question.

Before proceeding further an analysis of the 23 patients whose colostomy "misbehaves" itself is of interest. They were distributed as follows:

Daily wash-out	... 17 (15%) out of 113 cases
Alternate days	... 3 (43%) out of 7 cases
Every third day	... 2 (50%) out of 4 cases
Once a week	... 1 (33%) out of 3 cases

These figures show that a high percentage of those who wash out other than once a day suffer inconvenience compared with those who wash out daily. The hour of the day the colostomy wash-outs were undertaken in 105 out of the 165 cases was: 6 a.m. in 7, 6.30 a.m. in 13, 7 a.m. in 15, 7.30 a.m. in 18, 8 a.m. in 5, 8.30 a.m. in 13, 9 a.m. in 15, 9.30 a.m. in 12, 10 a.m. in 4, and 10.30 a.m. in 3.

If patients are expected to go to the trouble of performing this procedure there must be very distinct advantages. One has already been clearly shown. The other advantages linked with this are the ability to lead a normal life, to eat normal food, and to avoid wearing any apparatus. Such apparatus is bulky, at times offensive, and often difficult to clean; or it is fitted with bags the disposal of which is not easy.

With regard to living a normal life, only 10 said they could not, and three of these were over 80 years of age and three were travellers who found it difficult to manage their wash-outs when on the road. Obviously one has to bear in mind the enormous individual variation in what some people would term normal life.

Dietary restrictions did not seem to be much of a problem; 44 patients listed items of food they had to avoid, and 19 of these listed onions only; so, excluding these, that left 25 patients out of the 165 who had, in addition to onions, to avoid such items as green vegetables, fresh or dried fruit, and tomatoes. Laxatives when required usually consisted of liquid paraffin or Milpar, though many patients found beer or fresh fruit quite adequate for this purpose.

The chief disadvantage of the above method of colostomy control lies, of course, in the technique itself. It can usually be practised only in one's own home and is time-consuming. Table III shows length of time wash-outs take, including cleaning the apparatus (usually 25% of the total time).

TABLE III

Time in hours	$\frac{1}{12}$	$\frac{1}{35}$	$\frac{1}{48}$	$\frac{1}{10}$	$\frac{1}{18}$	$\frac{1}{1}$	$\frac{2}{7}$
No. of patients							

The main complication of this irrigation technique is the fear of perforation; therefore a reasonable degree of intelligence is required on the part of the patient, and probably, what is more important, adequate training in hospital. This must begin from the day the colostomy is first washed out to the day of discharge, when the following instruction sheet is given to each patient.

INSTRUCTIONS FOR COLOSTOMY MANAGEMENT

Apparatus for Daily Treatment

Finger-stall
2-pint douche-can
Length of rubber tubing attached, 4 feet long
Glass connexion
Soft rubber catheter, size 14-16
Spring clip
Horn with belt
Bucket or lavatory pan for drainage.

General Instructions

The wash-out should be done at the same hour each day or as near as possible. Arrange to do the wash-out in a warm place and sitting comfortably on lavatory pan or chair.

1. Pass first finger above knuckle *once* daily into colostomy.
2. Fill douche-can with 2 pints of tepid tap-water, spring clip in position on tubing.
3. Suspend douche-can to hook 4-5 feet high on wall or suitable stand.
4. Adjust belt and horn over colostomy.
5. Apply a little petroleum jelly to end of catheter.
6. Release spring clip to expel all air from tubing and catheter by running water through it.
7. Introduce catheter through small hole in rubber cap covering horn and into colostomy. Allow catheter to go in easily. NEVER

PUSH. The bowel wall is very easily injured if force is used. If catheter is hard to pass after first inch or so into colostomy, allow a little water through by releasing spring clip, then introduce catheter a little further. This may be repeated until the catheter is about 6-8 inches inside the colostomy.

8. Holding the catheter in place with one hand, release clip with the other and allow all the water to run in.
9. Remove catheter.
10. Allow 20 to 30 minutes for colostomy to act. Meantime, read or knit or otherwise occupy your mind. Do not try to rush it. Using the horn, you have both hands free and need not concentrate on holding anything over the colostomy.
11. If the bowel is stubborn and does not give a good action, a further pint of COLD tap-water may be introduced.

A dose of liquid paraffin (1 tablespoon may be taken the previous evening if constipated); *strong aperients should not be taken.*

If constipation is persistent a little olive oil (3-4 oz.) may be run slowly into colostomy in the evening, following by the usual wash-out next morning. The wash-out apparatus may be used to introduce the oil with a small catheter attached, size 10-12.

Diet

A perfectly normal diet may be taken.

An occasional day missed with no evacuation is not harmful.

Discussion

In the series under review there were only three cases in which perforation occurred for which a temporary transverse colostomy had to be performed, these subsequently being closed after the sigmoid colostomy had been refashioned.

The advantages of the irrigation technique are numerous and largely self-evident, the main ones being freedom from wearing any particular apparatus with the consequent smell, and the ability to lead a much more normal life. In the present series 113 patients never wore a bag, 22 rarely, and 30 occasionally. Also, 151 out of the 165 patients said that they were able to lead a normal life. Obviously it requires a certain amount of time spent in carrying out the procedure, but against this any apparatus that is worn requires a certain amount of time each day to be cleaned out, and the lack of a bathroom, which was quoted in 30% of hospital patients' homes, will affect both groups of patients equally.

Summary

A series of 165 cases of abdomino-perineal excisions of rectum have been reviewed, all of these patients having been taught to control their colostomies by daily wash-out. An attempt has been made to assess the efficiency of this method. It appears that the majority have continued to do their wash-outs as taught, though at varying intervals. The majority of those who ceased to wash them out did so because of old age or infirmity.

The results on the whole are very satisfactory in that most of the patients are able to lead a normal life and eat normal food without the encumbrance of wearing any apparatus, though some dietary restrictions were necessary on a few occasions in a small percentage of cases. The only serious complication, that of perforation of the colostomy, occurred in three of the cases reviewed, all three surviving further reconstructive surgery and two of them continuing to practise the wash-out method of control—such was their faith in it. It does not appear that the time spent in performing the wash-out is any greater than the total time spent by non-wash-out patients either changing their bags or washing them out.

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