

THE TREATMENT OF PILONIDAL SINUS BY PHENOL INJECTION

By **TERENCE J. STEWART** and **MILLAR BELL**
Belfast City Hospital

INTRODUCTION

THE purpose of this survey was to establish whether the treatment of pilonidal sinus by a conservative method, viz. by the injection of phenol, was sufficiently successful to warrant using it routinely.

Pilonidal sinus is a relatively minor surgical condition, although not all patients would regard it in this light. It is most often treated by radical operation which usually involves a lengthy stay in hospital and considerable time off work. While not quite analogous to using a 'sledge-hammer to crack a nut', it still would appear to be a time consuming method for the routine treatment of the condition.

Many different techniques have been tried but the most usual way of dealing with this condition is by excision and saucerization, leaving the wound to slowly granulate; more recently, excision followed by primary suturing has also been popular. While these methods can be very successful post-operative treatment is prolonged and a surgical hospital bed is blocked perhaps for several weeks. Mainly for this reason it was decided that a more conservative procedure should be tried which would mean a much shorter stay in hospital, early return to work and also, one hoped, give equally good results.

AETIOLOGY

Pilonidal sinus is still generally agreed to be acquired. The condition was first described in 1847 (according to Dwight and Maloy, 1953), but did not receive its name, 'pilonidal', until Hodge so referred to it in 1880. Many different theories have been held concerning its origin. Following the work by Raffman (1959) however, evidence for an acquired aetiology was convincing; also Breatly (1955, 1959) and Palmer (1959) offered impressive theories as to how the hairs gain entrance to the skin and lead to the formation of a sinus. The findings of Patey and Scarff (1946, 1955) and Currie, Gibson and Goodall (1953) in the study of pilonidal sinuses occurring in barber's hands also stimulated this belief. However, Weale (1955) ascribes to the development theory of origin and in a more recent communication (1964) concluded that the post-anal variety is a sequestration dermoid whereas the barber's sinus is an implantation dermoid. Indeed, he also points out that healing, following phenol injection into post-anal sinuses, is most likely due to epithelial destruction and that hair extraction is not essential to cure, arguing therefore, that hair is hardly the prime cause of the condition.

METHOD

The method adopted was one first described by Maurice and Greenwood in 1964. It consists of injecting phenol without pressure into the main sinus tract in order to cause destruction of the lining epithelium and the sterilization of infected contents,

together with removal of any embedded hair or debris. This technique had been used before by Mimpriss (1961) as a prelude to laying open the sinus tract and leaving it to granulate. The results of Maurice and Greenwood had indicated that this method might fulfil the conditions mentioned above.

TECHNIQUE

The patient is placed in the prone position after anaesthesia is induced with endotracheal intubation. The legs are then lowered to about 45° below the horizontal so as to expose the sacral area. The skin of the area is cleansed first with Savlon and Hibitane, following which it is dried. The skin around the sinus is protected by smearing liberally with vaseline and the anus protected by covering with vaseline gauze. After gentle probing the main sinus tract is injected with phenol using a blunt-nosed needle or an angiocath cannula, which should be a good fit in the sinus opening. Eighty per cent phenol is used and the injection is done slowly using the minimum of pressure. The injection is stopped when phenol is seen to issue from any side openings and any excess is quickly wiped away. After one minute, pressure around the sinus tract expresses the phenol and also usually brings loose hair to the surface, which is then picked out. This whole procedure is repeated twice, each time leaving the phenol in situ for one minute before expression and removal of any hair or debris; a total exposure time of 3 minutes is thereby obtained. Vaseline gauze is then applied to the injected area and a light dressing applied. Strict precautions are necessary throughout the procedure, especially in the handling of the phenol, to ensure it does not come into contact with the skin or eyes. Following injection the patient should have frequent baths and strict hygiene of the area is emphasized during the healing stage.

SURVEY AND RESULTS

A survey was undertaken of the cases treated by injection so far and also included were cases treated surgically at this hospital within the last five years. A total of 73 patients were reviewed made up as follows:

TABLE I

<i>Procedure</i>	<i>No. of Cases</i>
Phenol Injection	30
Excision and Saucerization	32
Excision and Primary Closure	8
Incision and Curettage	2
Phenol Injection and laying open	1

Out of the 43 cases dealt with surgically, 6 recurred – i.e. developed a discharging sinus again – and required further surgery; this means a cure rate of 86 per cent was attained. The patients in this group were followed up for approximately 9 months after operation but were largely reviewed again for this series; a few could not attend and were sent questionnaires. The length of time spent in hospital on average was 20.6 *days* for this group. The average time off work was calculated and this was 33.6 *days*.

Thirty cases were treated by injection. These patients were unselected but it was explained to them that surgery could still become necessary should conservative treatment fail. The cases had originally presented as follows:

TABLE II

<i>Presenting Features</i>	<i>Cases (Number)</i>
(i) Discharging sinus	13
(ii) Recurrent sacral abscesses	8
(iii) Sacral abscess which had required incision at Casualty	6
(iv) Recurrence of sinus following surgery	2
(v) Bleeding P.R.	1

The series consisted of 20 males and 10 females. The average age was 27 years, the range being 18–43 years.

Out of the 30 cases, 8 were not satisfactory and were counted as failures. The length of the follow-up period in this series was over 18 months for the majority, but a few cases which were reviewed had been injected within the last year. However, they were subjected to the same rigid criteria for success or failure. Cessation of discharge was adjudged the most important single factor, with the absence of pain or swelling, and closure of the sinus tract also essential criteria for success. This meant a cure rate of 73 per cent was attained. Three of the successful cases required a further 2nd injection of phenol before complete healing was obtained. The average length of hospitalisation for this group was 2.9 days while time off work on average amounted to 11.6 days.

COMMENT

The figure for the length of time spent in hospital is slightly higher than it should be as most patients came into hospital the day prior to operation and were discharged the morning of the day after. However, some of them stayed a day longer than was strictly necessary following injection; also one patient who developed an abscess following injection had a prolonged stay. Following discharge the patients were encouraged to return to work as soon as possible but a few stayed off until

TABLE III

<i>Method</i>	<i>Average Hospitalisation</i>	<i>Average Time Off Work</i>	<i>Longest Hospitalisation</i>	<i>Longest Time Off Work</i>
Injection	20.6	33.6	49	105
Surgery	2.9	11.6	9	90 x

(The above figures were calculated in days)

the end of a week or else took 2 weeks holiday as a matter of course – this rather spoiled the figure for the average time off work in this group. Another factor which affected this latter figure was again the prolonged convalescence of one (x) of the patients who developed the abscess.

Following injection, most patients had slight discomfort for a few days. The majority of the cases took 3–4 weeks for complete healing to take place and during this time there was usually a little serious discharge from the sinus. One patient had intermittent discharge and discomfort in the sacral region for nearly eleven months, before it finally healed.

It was noticeable that of the failures, 3 cases had 3 or more sinus openings present in the sacral area and all had been discharging heavily prior to injection. In two of these cases more than one main sinus tract was found. Another case had still some residual inflammation present at the time of injection, following a recent flare-up. A further case was discovered during the phenol injection to have a small abscess cavity in continuity with the main sinus tract. It was incised and drained at this time. One wonders what effect a pre-injection course of an appropriate antibiotic (after culturing and determining the sensitivity of the responsible organism), might have had in these five cases.

Two cases had undergone previous surgery. It has been accepted that this type of case is difficult to treat, mainly because of scar formation and poor blood supply, and probably is best dealt with by open surgery. The remaining case, already mentioned, developed a painful swelling after the injection; this became an abscess which was heavily infected. The necrotic area separated spontaneously leaving an ulcer which healed slowly by granulation. This was undoubtedly caused by leakage of phenol into the surrounding tissues due to either too much pressure at the time of injection, or to opening up a false tract by too vigorous probing.

Three of the cases which failed had subsequent excision and saucerization of the sinus performed, two with a good result; the other case has still not fully healed.

TABLE IV

<i>Method</i>	<i>Number of Cases</i>	<i>Number of Cases Recurred</i>	<i>% Success</i>
Surgery	43	6	86
Injection	30	8	73

Although the percentage cure rate was slightly below that for surgical methods, the method is thought to be sufficiently successful to warrant using it as a routine for most cases of pilonidal sinus. Ideally, the injection should be done at a quiescent phase. A pre-injection course of the appropriate antibiotic might be useful in some cases. Cases which have had previous surgery are probably best dealt with surgically again. Taking the above into consideration this success rate could probably be improved upon.

The very short period of hospitalisation and early return to work, together with a cure rate of over 70 per cent must make this method an attractive proposition for dealing with this troublesome condition.

SUMMARY

The results of 30 cases of pilonidal sinus treated by phenol injection are presented. A cure rate of 73 per cent was obtained. Hospitalisation and convalescence were significantly reduced in comparison with those treated by operation.

REFERENCES

- BREARLY, R. (1955). *Brit. J. Surg.*, **43**, 62.
- CURRIE, A. R., GIBSON, and GOODALL, A. L. (1953). *Brit. J. Surg.*, **41**, 278.
- DWIGHT, R. W. and MALOY, J. K. (1953). *New Eng. J. Med.*, **249**, 926.
- HODGE, A. M. (1880). *Boston Med. Surg. J.*, **103**, 465.
- MAURICE, B. A. and GREENWOOD (1964). *Brit. J. Surg.*, **51**, 510.
- MIMPRISS, T. W. (1961). *Personal communication*.
- PALMER, W. H. (1959). *Diseases of the Colon and Rectum*, Vol. 2, p.303, Philadelphia.
- PATEY, D. H. and SCARF, R. S. (1946). *Lancet*, **2**, 484.
- PATEY, D. H. and SCARF, R. S. (1948). *Lancet*, **2**, 13.
- PATEY, D. H. and SCARF, R. S. (1955). *Lancet*, **1**, 772.
- RAFFMAN, T. A. (1959). *Ann. Surg.*, **150**, 895.
- WEALE, F. E. (1964). *Brit. J. Surg.*, **51**, 513.