

RUBBER BAND LIGATION OF HAEMORRHOIDS

Walter T. L. Tan
K. T. Foo

SYNOPSIS

Haemorrhoids have been an affliction of mankind from the dawn of history. As much as 40 — 50% of the population will suffer from haemorrhoids at some time or other in their lives.

In the University Department of Surgery, Singapore General Hospital, an average of approximately 400 new patients are seen and managed yearly for haemorrhoids. The usual practice was to inject 1st degree piles with phenol and to perform haemorrhoidectomy for 2nd and 3rd degree piles.

In 1975 the technique of rubber band ligation of haemorrhoids was introduced into the unit. From 1978 onwards rubber band ligation of haemorrhoids for second degree prolapsed piles was regularly performed in the unit.

This paper discusses the results of the first 100 patients who have had rubber band ligation of haemorrhoids. The technique was found to be simple and effective for treating 2nd degree piles with minimal or no skin involvement. Morbidity was very low, no analgesics were required and little time was lost from work by patients as the ligations were performed as an outpatient procedure.

INTRODUCTION

Although a wide range of methods have been described in the treatment of haemorrhoids, the exact aetiology of this common problem remains uncertain to this day.

Ligation, excision and cautery of haemorrhoids have been practised since antiquity. They were used by Hippocrates in the treatment of piles. Salmon in 1888 introduced the operation of haemorrhoidectomy. Modifications of this operation were subsequently described by Miles (1919), Milligan (1937), Parks (1956) and Ferguson (1959). Lewis (1960) introduced cryosurgery for management of haemorrhoids. Lord (1968) advocated manual anal dilatation for haemorrhoids.

The search for a simple method of ligating haemorrhoids without the need for a general anaesthetic or admission to hospital resulted in the development of the first rubber band ligator by Laisdell in 1954. This method was later refined by Barron in 1963.

The technique requires manipulation of the instrument through a proctoscope held by an assistant. The operator then pulls the haemorrhoid with grasping forceps through the ligating drums and then releases the rubber band. Care should be taken during the

University Department of Surgery
Singapore General Hospital
Outram Road
Singapore 0316.

Walter T. L. Tan,
MBBS, M. Med(Surg), FRCSE, FRCSG
Lecturer

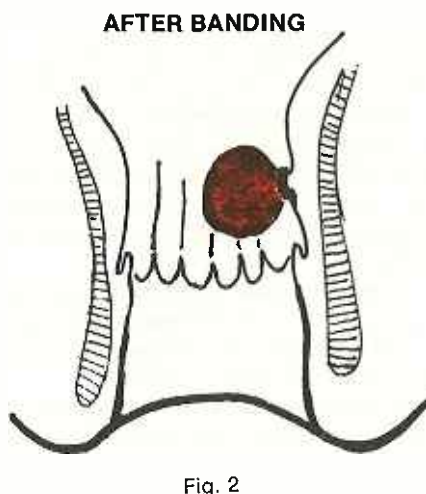
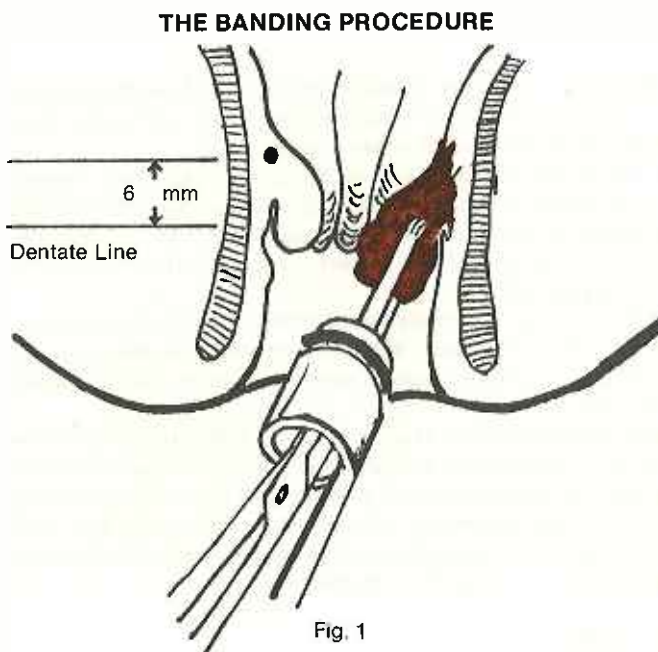
K. T. Foo, MBBS, FRCSE
Assoc. Professor

insertion of the band to ensure that it is applied at least 0.5 cm above the dentate line — otherwise there will be considerable discomfort for the patient. The ligated haemorrhoid will necrose within 48 hours and slough off in about 5 — 7 days. (Fig. 1 & 2).

The banded haemorrhoid may be injected with 1% lignocaine to increase tension and speed up the necrotising process or it may be treated with cryosurgery. Barron has stated that the haemorrhoidal banding interrupts the blood supply and allows for the freezing process to take place more certainly and the frozen tissue is confined to the banded area. The procedure of rubber band ligation can of course be combined with other accepted procedures for the complete management of the patient.

MATERIALS & METHODS

A prospective study of 100 patients treated by rubber band ligation over the 2-year period 1978 to 1979 was made. All patients were from the University Department of Surgery, Singapore General Hospital.



All patients had second degree haemorrhoids with no or minimal skin involvement. One or two haemorrhoids were ligated at each visit and all patients were reviewed at 3 weekly intervals for repeat ligations and updating of the questionnaire until their discharge.

Most patients had the procedure performed as an outpatient procedure in the minor O.T. or Surgical Out-patients Department.

In this series, rubber band ligation alone was used in the treatment of all cases. The technique was not combined with any other procedure e.g. injection or cryosurgery. Analgesics were not prescribed as a whole and most patients were told to return to work after the procedure. Laxatives like agarol were prescribed only if patients were constipated.

RESULTS & DISCUSSION

Of the 100 cases studied, 69 were males and 31 were females giving a M : F ratio of 2.2 : 1. (Table 1).

TABLE 1
RUBBER BAND LIGATION OF HAEMORRHOIDS
— distribution by sex

SEX	NO.
MALE	69
FEMALE	31
TOTAL	100

88% of cases were over 20 years of age with the majority of cases being in the economically productive period of life. (Table 2).

TABLE 2
RUBBER BAND LIGATION OF HAEMORRHOIDS
— distribution by age

AGE GROUP	NO.
* < 20 yrs	12
20 — 40 yrs	56
** > 40 yrs	32
TOTAL	100

*Youngest 16 yrs
**Oldest 75 yrs

The two commonest symptoms were bleeding (96% of cases) and prolapse (60% of cases). Most had ignored symptoms initially but sought treatment when attacks became frequent and severe. This is evident because 68% of cases had symptoms for more than 1 year before seeking treatment. 17% of cases in fact had symptoms for more than 5 years. (Tables 3 & 4).

80% of cases required only one or two ligations to relieve symptoms. 20% of cases required 3 or more ligations. Some haemorrhoids required more than 1

TABLE 3
RUBBER BAND LIGATION OF HAEMORRHOIDS
— symptoms before ligation

SYMPTOM	NO.
Bleeding	96
Prolapse	60
Pain	7
Discharge	2
Irritation	1

TABLE 4
RUBBER BAND LIGATION OF HAEMORRHOIDS
— duration of main symptom

DURATION	NO.
<1 year	32
1 — 5 years	51
>5 years	17
TOTAL	100

ligation and repeated ligations had to be carried out for the same haemorrhoid. In other cases the authors noted that the 2nd and 3rd haemorrhoids seemed to have subsided after ligation of the first. Whether this is attributed to spreading thrombosis after the initial ligation or natural history of the disease itself, remains to be proven. Hence the total number of haemorrhoids per patient that required to be ligated eventually was one in 58%, two in 24%, and three or more in 18% of cases. (Tables 5 & 6).

TABLE 5
RUBBER BAND LIGATION OF HAEMORRHOIDS
— no. of ligations performed per patient

NO. OF LIGATIONS	NO.
ONE	50
TWO	30
THREE	14
FOUR OR MORE	6
TOTAL	100

TABLE 6
RUBBER BAND LIGATION OF HAEMORRHOIDS
— no. of haemorrhoids ligated per patient

NO. OF HAEMORRHOIDS LIGATED	NO.
ONE	58
TWO	24
THREE	17
FOUR OR MORE	1
TOTAL	100

After each ligation and during follow-up the patients were each asked whether they experienced any post-ligation problems like discomfort, bleeding and prolapse. 87% experienced no discomfort at all. In fact most found the insertion of the proctoscope more uncomfortable than the banding procedure itself! 7% of cases complained of a mild ache after ligation. 1 patient was in severe pain after the ligation because the band was accidentally applied too close to the dentate line. (Table 7 (A)).

85% of cases did not notice any further bleeding after completion of the course of ligation(s). 9% still had occasional bleeding after defaecation but did add that it was less than before. One patient found no improvement and continued to bleed regularly. (Table 7(B)).

TABLE 7 (A)
RUBBER BAND LIGATION OF HAEMORRHOIDS
— post-ligation problems: discomfort

DISCOMFORT	NO.
No.	87
Minimal	7
Severe	1
No follow up	5
TOTAL	100

TABLE 7 (B)
RUBBER BAND LIGATION OF HAEMORRHOIDS
— post-ligation problems: residual bleeding

RESIDUAL BLEEDING	NO.
No.	85
Occasional	9
Regular	1
No follow up	5
TOTAL	100

90% of patients did not notice any further prolapse of piles after completion of the course. 5% still reported prolapse after defaecation occasionally. (Table 7(C)).

The total time lost from work was less than a day for 82% of cases. These were able to return to work immediately after ligation. 18% of cases required 1 — 3 days off for some reason or other. In no case was the patient off from work for more than 3 days. This contrasts sharply with patients admitted for haemorrhoidectomy when a minimum of 4 working days were lost. (Table 8).

89% of cases were successfully treated. 5% of cases did not complete the course of treatment and absconded follow-up. 6% of cases required subsequent haemorrhoidectomy because of failure of treatment or complications. (Table 9).

79% of patients were happy with the results of treatment. 12% found some improvement after treatment and 4% found it of little help. (Table 10).

The authors found the results of rubber band ligation excellent in 77% of cases treated. This reflects only the short term success rate as most patients have been followed up for less than a year after the last ligation. In the series by Steinberg et al⁴ where the long term review of results of rubber band ligation (mean 4.8 years) of haemorrhoids were made, 44% of patients remained symptom free after rubber band ligation. (Table 11).

TABLE 7 (C)
RUBBER BAND LIGATION OF HAEMORRHOIDS
— post-ligation problems: residual prolapse

RESIDUAL PROLAPSE	NO.
No	90
Occasional	5
Regular	0
No Follow Up	5
TOTAL	100

TABLE 8
RUBBER BAND LIGATION OF HAEMORRHOIDS
— total time off from treatment

TIME OFF	NO.
<1 day	82
1 — 3 days	18
>3 days	0
TOTAL	100

TABLE 9
RUBBER BAND LIGATION OF HAEMORRHOIDS
— reason why treatment stopped

REASON	NO.
Treatment successful	89
Treatment failed	4
Complication	2
No follow up	5
TOTAL	100

TABLE 10
RUBBER BAND LIGATION OF HAEMORRHOIDS
— patients' assessment of treatment

ASSESSMENT	NO.
Excellent	79
Moderate success	12
Little help	4
No follow up	5
TOTAL	100

TABLE 11
RUBBER BAND LIGATION OF HAEMORRHOIDS
— surgeons' assessment of treatment

ASSESSMENT	NO.
Excellent	77
Moderate success	14
Little help	4
No follow up	5
TOTAL	100

CONCLUSION

In conclusion rubber band ligation of haemorrhoids was found to be a simple and effective method of treating second degree prolapsed piles with excellent results in 77% of cases.

The total time loss from work by patients undergoing ligation was minimal compared with patients admitted for haemorrhoidectomy.

The morbidity rate of the procedure is very low.

The procedure itself does not require an anaesthetic and most patients do not require analgesics after ligation.

This method of treatment of haemorrhoids is well accepted by all patients.

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