

# Study of Hemorrhoid Disease in the Department of General Surgery of the Cs Ref of the Commune I Bamako

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## Abstract

This work was a retrospective prospective study carried out in the general surgery department of the Cs ref of commune I from January 2009 to December 2012. Our study aimed to determine the hospital frequency of hemorrhoidal disease, to identify the contributing factors, describe the clinical and therapeutic aspects and analyze the surgical consequences. We collected 73 patients with an average age of 37.8 years (range: 19 years and 77 years) with a sex ratio of 2.5 in favor of men. We operated on 49 patients or 67.1% of cases. 71.2% of our patients were married and lived in Bamako. School-children and middle managers made up 39.8% of cases. 82.2% of patients were seen in ordinary consultation and 69.9% complained of progressive anal pain in 66.7% of cases. This pain was triggered by defecation in 88.2% of our patients. The contributing factors were dominated by constipation (53.4%), working in a seated position (41.1%) and a sedentary lifestyle (16.4%) of cases. Stage IV external hemorrhoids and hemorrhoidal thrombosis represented 53.8% of surgical indications. The most used surgical technique was that of Milligan-Morgan, *i.e.* 51.9% of cases and 45.2% of patients treated medically received a combination of transit regulator, venotonics and analgesics. The surgical aftermath was marked by hemorrhage (3 cases), delayed healing (5 cases), urinary retention (1 case) and scarring anal stenosis (1 case). The morbidity rate was 5.48% of cases and a zero mortality rate. The average length of hospitalization was 2 days with extremes of 1 and 5 days.

## Keywords

Hemorrhoid, Surgery, Cs Ref C I, Bamako, Mali

## 1. Introduction

Hemorrhoids from the Greek “Hemorrhoids” are ectasias of the capillaries of the corpus cavernosum recti [1]. Hemorrhoidal disease appears to be the most common terminal intestinal pathology but remains difficult to assess [2].

In the USA, Hyams and Philpot found a prevalence of 27% of the population [3].

In France, its prevalence is 25% of the adult population and a hospital frequency of 6 to 18% among HIV patients in 2001 according to the French national society of colo-proctology [4].

In Australia, 4 to 34% of the general population according to the Australian National Institute in 2003 [5].

In the Central African Republic, 58.8% of all Ano-rectal pathologies in 2004 [6].

In Ivory Coast, 30.5% of lesions observed during colonoscopy in 2006 [7].

In Mali, 10.7% of outpatient consultations in surgery department “B” at Point G hospital in 2003 [8]; 40.15% of lower endoscopies and 6.35% of consultations in the Gastroenterology department of the Gabriel Touré University Hospital in 1993 [9].

Hemorrhoidal disease exists physiologically in humans and becomes pathological with the appearance of clinical manifestations, the main ones of which are anal pain, rectal bleeding, and hemorrhoidal prolapse. It is considered by the population as a shameful disease, responsible for school and professional absenteeism, aesthetic discomfort, but with little to no mortality. The contributing factors are multiple and varied, but all have in common the increase, with the most common being constipation [8] [9] [10] [11].

The confirmatory diagnosis is made by Ano rectoscopy. Complications are thrombosis and hemorrhage. Treatment is medical, instrumental and surgical. The main postoperative complications are anal stenosis, anal incontinence, hemorrhage, acute urinary retention and pain [12].

Several studies carried out on hemorrhoidal disease in our hospitals have shown a certain mastery of surgical management [8] [9] [10] [11] [12].

Our health structure constitutes the first level of patient referral according to the health pyramid in Mali. Hemorrhoidal disease is considered a shameful disease generally treated by traditional therapists or self-medication, factors favoring complications. The frequency was high during our ordinary consultations and surgical emergencies during on-call. No study has been carried out on hemorrhoidal disease in our Cs Ref in Bamako despite the decentralization of skills in the field of surgery. This is why we carried out this work to better understand the management of this proctological pathology at the level of the reference health center of the commune I of the district of Bamako in Mali.

## 2. Research Methodology

This work was carried out in the Reference Health Center of Commune I of the

District of Bamako which has a general surgery department. This was a retro-prospective cross-sectional study spanning from January 2009 to December 2012. We collected 73 cases of hemorrhoidal disease. We carried out a systematic recruitment of all patients.

- Inclusion criteria: Any patient admitted for hemorrhoidal disease, treated and followed in the general surgery department.
- Non-inclusion criteria: Any patient admitted for other proctological pathologies and/or hemorrhoidal disease not treated and followed in the department.

The variables studied were sociodemographic (age, sex, profession, residence); physical examination (general, functional, physical signs); additional examinations (systematic rectoscopy except in cases of hemorrhoidal thrombosis); emergency biological assessment (Hemoglobin level, Hematocrit, Rhesus group, TP, TCK, Blood sugar) and surgical treatment: techniques (Milligan Morgan and Thrombectomy) and short and medium term operative consequences.

Two main techniques were used in our work: hemorrhoidectomy according to Milligan Morgan and simple thrombectomy in cases of hemorrhoidal thrombosis.

The supports used were the patients' medical files, the outpatient consultation and hospitalization registers, recording the patients' reports, the individual investigation sheet and the anesthesia protocol.

Data entry and analysis were carried out on SPSS version 19.

The Student's statistical comparison tests and the Chi square were calculated on Epi info 6.4 with  $p < 0.05$ .

### 3. Results

In four years we have carried out 5210 consultations, an average of 1302 consultations per year; 992 surgical interventions or 248 interventions on average per year and 1070 hospitalizations. Hemorrhoidal disease: 1.4% of consultations; 5.2% of interventions and 4.9% of hospitalizations.

The average age was 37.8 years (extreme 19 years and 77 years) with a sex ratio of 2.5 (52/21) in favor of the male sex (**Table 1**). The reasons for consultation were anal pain, hemorrhoidal prolapse and rectal bleeding, 82% of patients were seen in ordinary consultation and 18% in emergency (**Table 2**). Pain was present in 71.2%, rectal bleeding 23.3% and hemorrhoidal prolapse 56.2%. The pain was moderate without radiation (45.1%), burning (47.1%), intermittent (74.5%) (**Table 3**). The prolapse was progressive (90.9%), irreducible (63.6%). Comorbidities were hypertension (2.7%), diabetes (5.5%) and sickle cell disease (1.4%).

Surgical history was hemorrhoidectomy (2.7%). The general condition was maintained in all our patients.

The contributing factors were constipation (53.4%), diarrhea (15.1%), prostate adenoma (10.9%), sedentary lifestyle (16.4%), working in a sitting position (41.1%), pregnancy (4.1%).

Inspection of the anal verge found hemorrhoidal prolapse in 47.9% of our patients, hemorrhoidal marisques (19.2%), anal ulceration (1.4%), fistulous orifices

(2.7%), and anal fissures (11%). Rectal examination was done in 82.2% of patients, 17.8% not possible due to pain and hemorrhage (1.7%). The anal sphincter

**Table 1.** Sociodemographic data.

| Sociodemographic data |                   | Effective | Frequency |
|-----------------------|-------------------|-----------|-----------|
| Age                   | 19 - 45 years old | 36        | 49.30     |
|                       | 46 - 60 years old | 24        | 32.90     |
|                       | Over 60 years old | 13        | 17.80     |
| Sex                   | Male              | 52        | 71.20     |
|                       | Feminine          | 21        | 28.80     |
| Marital status        | Bride)            | 52        | 71.20     |
|                       | Bachelor          | 18        | 24.70     |
|                       | Widower           | 1         | 1.40      |
|                       | Divorced          | 2         | 2.70      |
| Occupation            | Senior            | 9         | 12.30     |
|                       | Middle management | 14        | 19.20     |
|                       | Lower frame       | 9         | 12.30     |
|                       | School            | 15        | 20.60     |
|                       | Peasant           | 3         | 4.10      |
|                       | Household         | 7         | 9.60      |
|                       | Military          | 6         | 8.20      |
|                       | Worker            | 4         | 5.50      |
|                       | Trader            | 4         | 5.50      |
| Others                | 2                 | 2.70      |           |
| Origin                | Kayes             | 2         | 7.20      |
|                       | Koulikoro         | 8         | 11        |
|                       | Sikasso           | 4         | 5.50      |
|                       | Segou             | 3         | 4.10      |
|                       | Timbuktu          | 1         | 1.40      |
|                       | Kidal             | 1         | 1.40      |
|                       | Bamako            | 52        | 71.20     |
|                       | Others            | 2         | 2.70      |
| Total                 |                   | 73        | 100       |

The age group of 19 - 45 years was the most represented, *i.e.* 49.30% of cases (65% of our patients were under 50 years old). The average age was 37.8 years; the extremes of 19 years and 77 years. The sex ratio was 2.5 with the predominance of males. Married people represented 71.20% of our patients and 71.20% resided in Bamako. Schoolchildren and middle managers made up 39.80% of our patients.

**Table 2.** Distribution of patients according to recruitment method and work position.

| Method of recruitment/Position of work |                       | Effective | Percentage |
|--|-----------------------|-----------|------------|
| Method of recruitment                  | Emergency             | 13        | 17.80      |
|  | Ordinary consultation | 60        | 82.20      |
| Work position                          | Standing              | 16        | 22.90      |
|  | Seated                | 30        | 40.10      |
|  | Standing seated       | 27        | 37         |
| Total                                  |                       | 73        | 100        |

82.20% of our patients were seen in ordinary consultation and the sitting position constituted 40.10% of cases.

**Table 3.** Characteristics of pain.

| Pain characteristics                              |                                  | Effective | Percentage |
|---|----------------------------------|-----------|------------|
| Installation mode                                 | Brutal                           | 17        | 33.30      |
|   | Progressive                      | 34        | 66.70      |
| Period of onset of pain in relation to defecation | During bowel movements           | 25        | 49         |
|   | After bowel movements            | 3         | 6          |
|   | Outside of the stool             | 14        | 27.40      |
|   | During and after bowel movements | 9         | 17.60      |
| Type of pain                                      | Burn                             | 24        | 47.10      |
|   | Gravity                          | 13        | 25.50      |
|   | Sting                            | 2         | 3.90       |
|   | Tension                          | 12        | 23.50      |
| Pain intensity                                    | Weak                             | 2         | 3.90       |
|   | Moderate                         | 23        | 45.10      |
|   | Strong                           | 12        | 23.50      |
|   | Extreme                          | 13        | 25.50      |
| Pain irradiation                                  | None                             | 6         | 11.80      |
|   | Local                            | 23        | 45.10      |
|   | Perineal                         | 10        | 19.60      |
|   | Local + Perineal                 | 11        | 21.60      |
|   | Local + Pelvic + Perineal        | 1         | 1.90       |
| Evolution of pain                                 | Permed                           | 13        | 25.50      |
|   | Intermittent                     | 38        | 74.50      |
| Total   |                                  | 73        | 100        |

66.70% of pain set in gradually. Anal pain occurred during defecation in 49% of cases. 41.10% of anal pain was burning. 45.10% of anal pain had moderate intensity and radiated locally. Anal pain was intermittent in 74.50% of cases.

was hypertonic in 53.4% of cases. Internal hemorrhoidal ridges were associated in 65% of cases. Rectal examination was painful in 11.7% and hemorrhagic in 1.7% of cases.

The diagnostic hypotheses retained: internal hemorrhoids (42.5%), thrombosis (17.8%), hemorrhoid + fissure (11%), hemorrhoid + fistula (2.7%) and internal + external hemorrhoid (6.8%) (**Table 4**).

Our patients benefited from ano-rectoscopy in 82.2% including 2 (2.7%) biopsies. The diagnosis made by anotoscopy was: internal hemorrhoids stage I (5.5%), stage II (6.8%), III (12.3%), IV (20.6%), external hemorrhoids (20.6%), thrombosis (17.8%), internal external hemorrhoids (5.5%), fistula hemorrhoid (2.7%) and fissure hemorrhoid (8.2%).

45.2% of patients were treated medically with transit regulator, venotonics and analgesics for two weeks in 42.9% of cases (**Table 5**).

Our patients, 52 (71.2%) were operated on, 75% with Karnofsky index of 80%; 86.5% under spinal anesthesia; stage IV external hemorrhoids and thrombosis (53.8%) surgical indications; the Milligan-Morgan technique in 51.9% of operated patients. 96.2% of our operated patients received antibiotic therapy, a mild laxative, an analgesic and an antiseptic in a sitz bath and manual dilation on day 10 in all our operated patients (**Table 6**).

Our operated patients did not present any immediate postoperative complications in 90.4% of cases. The consequences were simple in 92.3% of cases; delayed healing (5.8%) and anal stenosis (1.9%) (**Table 7**).

**Table 4.** Characteristics of rectal bleeding.

| Characteristics of rectal bleeding    |                                  | Effective | Percentage |
|---------------------------------------|----------------------------------|-----------|------------|
| Recectorgia                           | Yes                              | 17        | 23.30      |
|                                       | No                               | 56        | 76.70      |
| Time of occurrence of rectal bleeding | During bowel movements           | 12        | 70.50      |
|                                       | After bowel movements            | 2         | 11.80      |
|                                       | Outside of the stool             | 1         | 5.90       |
|                                       | During and after bowel movements | 2         | 11.80      |
| Quantity of rectal bleeding           | Traces                           | 11        | 64.70      |
|                                       | Drops                            | 5         | 29.40      |
|                                       | Jet                              | 1         | 5.90       |
| Appearance of rectal bleeding         | Red                              | 13        | 76.50      |
|                                       | Black                            | 3         | 17.60      |
|                                       | Clot                             | 1         | 5.90       |
| Total                                 |                                  | 73        | 100        |

Rectory bleeding was observed in 23.30% of patients. Rectory bleeding occurred during bowel movements in 70.50% of cases. 64.70% of the rectal bleedings occurred in the form of traces and 76.50% of the rectal bleedings were made of red blood.

**Table 5.** Characteristics of prolapse and accompanying signs.

| Hemorrhoidal prolapse and accompanying signs |                               | Effective | Percentage |
|--|-------------------------------|-----------|------------|
| Hemorrhoidal prolapse                        | Yes                           | 41        | 56.20      |
|  | No                            | 32        | 43.80      |
| Mode of appearance of prolapse               | Brutal                        | 4         | 9.80       |
|  | Progressive                   | 37        | 90.20      |
| Reduction of prolapse                        | Spontaneous                   | 6         | 14.60      |
|  | Manual                        | 9         | 22         |
|  | Irreducible                   | 26        | 63.40      |
| Duration of hemorrhoidal prolapse            | Less than 24 hours            | 4         | 9.80       |
|  | 1 to 2 days                   | 10        | 24.40      |
|  | 2 days to 1 week              | 6         | 14.60      |
|  | More than a week              | 21        | 51.20      |
| Accompanying signs                           | Oozing                        | 24        | 32.90      |
|  | Peri-anal irritation          | 11        | 15.10      |
|  | Anal pruritus                 | 14        | 19.20      |
|  | Epreinte                      | 5         | 6.80       |
|  | Tenesmus                      | 2         | 2.70       |
|  | Oozing + Pruritus + Tenesmus  | 13        | 17.80      |
|  | Oozing + Peri-anal irritation | 4         | 5.50       |
| Total  |                               | 73        | 100        |

60.30% of patients presented with hemorrhoidal prolapse. The mode of appearance of the prolapse was progressive in 90.90% of cases. The prolapse was irreducible in 63.60% of cases. 52.30% of prolapses had been evolving for more than a week. Anal oozing was present in 32.90% of cases.

**Table 6.** Surgical treatment.

| Surgical treatment   |                              | Effective | Percentage |
|----------------------|------------------------------|-----------|------------|
| Surgical treatment   | Operated                     | 52        | 71.20      |
|                      | Not operated                 | 21        | 28.80      |
| Karnofsky index      | 90%                          | 10        | 19.20      |
|                      | 80%                          | 39        | 75         |
|                      | 70%                          | 3         | 5.80       |
| Type of anesthesia   | Spinal anesthesia            | 45        | 86.50      |
|                      | Epidural anesthesia          | 3         | 5.80       |
|                      | General anaesthesia          | 4         | 7.70       |
| Surgical indications | Failure of medical treatment | 8         | 15.40      |

**Continued**

|                     |                                 |    |       |
|---------------------|---------------------------------|----|-------|
|                     | Hemorrhoidal thrombosis         | 13 | 25    |
|                     | External hemorrhoid stage III   | 6  | 11.60 |
|                     | External hemorrhoid stage IV    | 15 | 28.80 |
|                     | Hemorrhoid + Fissure            | 8  | 15.40 |
|                     | Hemorrhoid + Fistula            | 2  | 3.80  |
|                     | Milligan-Morgan                 | 27 | 51.90 |
| Surgical techniques | Simple thrombectomy             | 14 | 26.90 |
|                     | Hemorrhoidectomy + Fissurectomy | 9  | 17.40 |
|                     | Hemorrhoidectomy + Fistulectomy | 2  | 3.80  |
| Total               |                                 | 52 | 100   |

71.20% of our patients were operated on. 75% of our patients had a Karnofsky index of 80%. 86.50% of patients were operated on under spinal anesthesia. Stage IV external hemorrhoids and hemorrhoidal thrombosis represented 53.80% of surgical indications. The Milligan-Morgan technique was performed in 51.90 patients.

**Table 7.** Distribution according to post-operative complications.

|           | Postoperative complications | Effective | Percentage |
|-----------|-----------------------------|-----------|------------|
| Immediate | None                        | 47        | 90.40      |
|           | Pain                        | 3         | 5.80       |
|           | Hemorrhage                  | 1         | 1.90       |
|           | Acute urine retention       | 1         | 1.90       |
| Late      | Single suites               | 48        | 92.30      |
|           | Delayed healing             | 3         | 5.80       |
|           | Anal stenosis               | 1         | 1.90       |
| Total     |                             | 52        | 100        |

90.40% of operated patients had no immediate post-operative complications. 92.30% of operated patients reported no complications after 4 months of follow-up.

#### 4. Discussion

We conducted a retrospective study spanning 4 years and involving 73 patients. We worked with a questionnaire relating to patients suffering from hemorrhoidal disease in addition to data collection supports. However, we encountered a number of problems:

- The difficulty in collecting data from old files because many files were incomplete.
- Delay in treatment due to traditional treatment.
- Some patients lost to follow-up and unreachable by telephone.

Hemorrhoidal disease is a frequent reason for consultation but certain factors influence its prevalence such as modesty, lack of necessary information for pa-

tients, traditional treatment and self-medication.

It includes internal and external hemorrhoids, hemorrhoidal thrombosis which are among the pathologies most frequently encountered in proctology [3], [5]. During our work, hemorrhoidal disease constituted 1.4% of consultations, an average of 18 cases per year. This frequency does not differ from those of Bougouma [7], ( $p = 0.2429$ ) and Dicko ML [11], ( $p = 0.6822$ ) and lower than that of Yassim Banda [6] ( $p = 0.0000$ ), explained by the size of the samples. Appearing at all ages, our average age (37.8) years corroborates with the results of African series [13] [14], differs from data in Western literature [15] [16]; our patients were relatively younger, in Africa in particular.

Sex is not a risk factor, Picot [17], (1.1%); Al-hadrani [18], (3.69%); NG KH et al. [2], (1.4%) and Dicko ML [11], (2.95%) all had a predominance of men as in our series (sex ratio = 2.47); factors found, greater consumption of stimulants (alcohol, coffee, tobacco), strength work and intense sports (bicycle, motorcycle, dumbbells). The risk factors have a common denominator, the increase in abdominal pressure slowing blood reflux into the upper rectal vein [9], such as constipation, smoking, chronic alcoholism, certain sports [5] [19]. Its frequency varies between 27.6% and 54% depending on the authors [20].

Anal pain was the main symptom, its frequency (69.9%) in our series does not differ from those of Dicko ML ( $p = 0.3331$ ) [11] and Picot ( $p = 0.2229$ ) [17].; higher than that of Pravin ( $p = 0.0561$ ) [19] linked to the living conditions of the patients. Rectory bleeding (23.3%) differs from other series ( $p = 0.0000$ ) through recruitment [9] [17] [19]. Pruritus and oozing, secondary to hemorrhoidal prolapse [4]; 17.8% of our patients corroborate those of other authors ( $p = 0.8860$ ) [17]; ( $p = 0.4902$ ) [19]; ( $p = 0.7303$ ) [9].

Rectal examination, a key moment, establishes the diagnosis of hemorrhoidal disease (sphincter hypertonia) [4]; 40.6% in our series, poorly evaluated due to lack of pressure gauge. Patients always consulted at advanced stages (stage III + IV); 32.9% in our study compared to more than half of the patients at ROSA in Italy [2] and at Dicko ML in Mali [11], ( $p = 0.000$ ).

The hemorrhoidal pathology respects the vascular anatomy of the anal verge (3 branches of the superior rectal artery; 3 o'clock, 7 o'clock and 11 o'clock). The site of the hemorrhoidal clusters, 60.3% in our series were located at 3 o'clock, 7 o'clock and 11 o'clock [21].

Classic medical treatment was reserved for stages I and II [4], using a transit regulator; affected 42 (57.5%) of our patients. Venotonics, anti-inflammatories and oral analgesics remain useful. The Milligan and Morgan technique (67.1%) of our patients and 64% of Dicko M.L. was commonly used without complications after six months of follow-up [8]; the Longo technique by many other authors [11] [22] [23] [24].

Immediate postoperative complications were dominated by urinary retention, 1 (2%) ranged from 2 to 13.2% [24] [25] [26]; influenced by a perfusion volume greater than 1 liter, an age between 40 and 50 years, the performance of an intraductal pressure dressing, a multipedicular hemorrhoidectomy [8] and he-

morrhage (1.9%), between 0 at 4.9% according to the literature [11] [24] [26] [27].

Late postoperative outcomes (delayed healing = 5.8%) differ from the African (8.2%;  $p = 0.0000$ ) [14] and Indian (2%;  $p = 0.0030$ ) [28] series; linked to (quality of local care, non-regularization of transit or medical history) and late hemorrhage, none in our series and in those of other authors [14] [15] [29] was 6% at Pravin in India [9], due to the operating technique and the quality of hemostasis during the operation [15].

Scar stenosis (1.9%) differs from Pravin ( $p = 0.0852$ ); de Pressaux ( $p = 0.003$ ) [28] [29] and zero in the Kouadio series [14]. No anal incontinence among several authors was 10.4% among Pravin in India [28]; following injury to the anal sphincter during the procedure.

## 5. Conclusion

Hemorrhoidal disease is the most common anorectal disease with a predilection in young adults. The epidemiological, clinical and therapeutic aspects of this pathology are diverse and varied. Its definitive diagnosis is based on ano-rectoscopy. The main concern must first be the elimination of rectal cancer because most patients with hemorrhoidal disease consult at a late stage.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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