

# Determine the Frequency of Postoperative Ligasure Complications in 3rd and 4th Degree Hemorrhoids

Ligasure  
Complications in  
3rd and 4th  
Degree  
Hemorrhoids

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## ABSTRACT

**Objective:** To Determine the frequency of postoperative Ligasure complications in 3rd and 4th degree hemorrhoids.

**Study Design:**

**Place and Duration of Study:** This study was conducted at the Department of Surgery Unit-II, Peoples University of Medical and Health Sciences, Nawabshah, LUMHS Jamshoro and Suleman Roshan Medical College Hospital, Tandoadam, from February 2019 to January 2020.

**Materials and Methods:** Inclusion criteria were patients above 16 years age with diagnosed 3rd and 4th degree hemorrhoid. Patients under 16 years, anticoagulant therapy, previous anal surgery and immunosuppressed patients were excluded from the study. Take a detail history from all patients regarding bleeding per rectum or something coming out during defecation. These patients were admitted to the Surgery ward early morning of the procedure and discharged the following day, except when they had to stay longer due to postoperative complications. The data was collected on a structured proforma, analyzed statistically and the results were tabulated.

**Results:** During study period 144 cases were hemorrhoid, comprising 118 (82%) male and 26 (18%) female. Mean age of 29.3±3.5 years. Majority of patients were observed in 3rd and 4th decade 50 (34.72) and 55 (38.19) respectively. The clinical examination of 93 (64.58%) patients were 3rd degree hemorrhoids, followed by 4th degree hemorrhoids in 51(35.41%). The postoperative complications were observed, in which the most frequent one was the pain 36 (25%) cases, infection in 6 (4.16%) cases, anal spasm in 3(2.08%) cases and recurrence in 2 (1.38%) cases.

**Conclusion:** We conclude that LigaSure hemorrhoidectomy is a suture less, less intra-operative blood loss, less required post-operative pain management and higher patient satisfaction.

**Key Words:** LigaSure hemorrhoidectomy, 3rd and 4th degree hemorrhoid, Complications

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## INTRODUCTION

In general surgery hemorrhoids are common practice characterized anal cushion enlarge and distal displacement<sup>1,2</sup>. Multiple international studies reported approximately 5% of general population are hemorrhoids symptoms, especially over 40 years of age, due to changes occurred in supporting tissues in

the anal cushion were destructive changes and dilated vascular channel<sup>3,4</sup>. According to a study on the prevalence of hemorrhoids, it is estimated that around 4.4% and 10 million people in the United States are diagnosed with the disease. Most of the patients are between 45 and 65 years old; of the largest number reported in Caucasians. It is rarely seen in young people<sup>5,6</sup>.

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Based on the degree of prolapsed and appearance of the hemorrhoids, it can be graded into four degrees<sup>7</sup>. There are many surgical options available to patients depending on the degree of hemorrhoids, age, severity, etc. Grade 3 and 4 symptomatic hemorrhoids require surgical intervention and Hemorrhoidectomy is one of the most common surgical procedures performed. Traditional Milligan Morgan hemorrhoidectomy techniques is widely practiced. Although effective, this method has many problems<sup>8,9</sup>.

Many surgeon accepts that by staying away from vascular pedicle ligation, the hazard of secondary bleeding can be decrease. Because it may also lead to ischemia and necrosis. Sometime additionally, applied deeply sutures, then they can also cause firm scarring at anus later on<sup>10,11</sup>. To maintain a strategic distance from

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this issue, Recently, the presentation of LigaSure vessels fixing electrosurgical unit for the treatment of piles had gained wide acceptance and popularity<sup>12</sup>. LigaSure electrosurgical unit is multifunctional tool because of its capacity of getting a handle on, fixing, blunt dissection, and at last dividing tissues. In fact, the bipolar diathermy modification, which acts as a combination of pressure and radiofrequency, sealing blood vessels up to 7mm in diameter and providing energy tailored to the tissue impedance with a thermal injury confined to 2 mm over the operative field<sup>13,14</sup>. The main aim of this study was to assess the frequency of complications of LigaSure hemorrhoidectomy in Peoples University of Medical and Health Sciences, Nawabshah.

**MATERIALS AND METHODS**

This observational study was conducted during February 2019 to January 2020, in the Department of Surgery Unit-II, Peoples University of Medical and Health Sciences, Nawabshah, LUMHS Jamshoro and Suleman Roshan Medical College Hospital, Tandoadam. The inclusion criteria were patients above 16 year age with diagnosed 3rd and 4th degree hemorrhoid. Patients under 16 years, anticoagulant therapy, previous anal surgery and immunosuppressed patients were excluded from the study. Take a detail history from all patients regarding bleeding per rectum or something coming out during defecation. Clinical examination of anal canal, DRE and proctoscopy were done. All patients underwent for base line investigation required for surgery. Before the surgical procedure, cefalosporine (1gm) were given intravenously. These patients were admitted to the Surgery ward early morning of the procedure and discharged the following day, except when they had to stay longer due to postoperative complications. All the data was collected on a structured proforma, analyzed statistically and the results were tabulated.

**RESULTS**

In our study a total of 144 cases were hemorrhoid, comprising 118(82%) male and 26(18%) female. The age of patients in our series was ranged from 11 to 65 years with a mean of 29.3±3.5 years. Majority of patients were observed in 3rd and 4th decade 50(34.72) and 55(38.19) respectively (Table-I). The clinical examination of 93(64.58%) patients were 3rd degree hemorrhoids, followed by 4th degree hemorrhoids in 51(35.41%) (Figure No.1). The postoperative complications were observed, in which the most frequent one was the pain 36 (25%) cases, infection in 6(4.16%) cases, anal spasm in 3(2.08%) cases and recurrence in 2(1.38%) cases (Figure No.2).

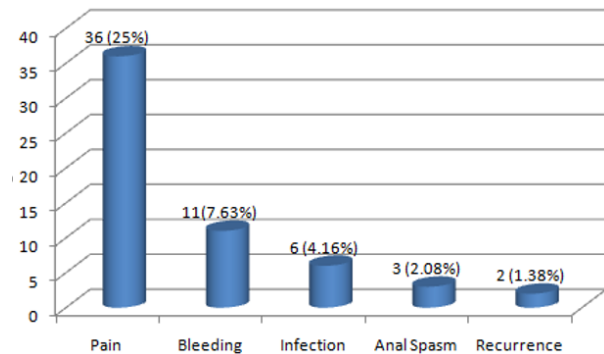
**Table No.1: Age Groups in Study Population (n=144)**

Age group (years)	Male N=118	Female N=26	Number of patient (%)
12-20	9	2	11(7.63)
21-30	36	14	50(34.72)
31-40	48	7	55(38.19)
41-50	14	1	15(10.41)
51-60	8	2	10(6.94)
>60	3	00	03(2.08)
Total	118(82%)	26(18%)	144(100)

■ 3rd degree hemorrhoids ■ 4th degree hemorrhoids



**Figure No.1: Clinical Examination N=144**



**Figure No.2 Postoperative Complications (N=144)**

**DISCUSSION**

Standard surgical treatment of symptomatic 3rd and 4th degree hemorrhoid based on principles of excision and ligation of anal cushions<sup>15</sup>. Traditional Milligan Morgan hemorrhoidectomy techniques is widely practiced all over the world. Although effective, this method has many problems. In recent years new tools and devices are being used to overcome these complications such as LigaSure sealing system. Hemorrhoid more commonly observed in male 118(82%) cases than female 26(18%)cases. While in the study of Al Sayed A Hamdy<sup>16</sup> reported 60% male cases and 40% female cases. The mean age in our

study was  $29.3 \pm 3.5$  years, commonly patients were observed in 3rd and 4th decade 50(34.72) and 55(38.19) respectively. After 3rd decade some changes occurred in supporting tissues in the anal cushion like dilated vascular channel due to constipation, eating a low-fiber diet, regular heavy lifting etc. However, the study of Ko-Chao Lee<sup>17</sup> reported means was  $48.5 \pm 14.0$  years.

In our study the postoperative pain was observed 36 (25%) cases in early period and less required postoperative analgesic. However, in the international meta-analysis were conducted on 12 studies by Nienhuijs<sup>18</sup> on "LigaSure use in hemorrhoids surgery and reported less painful and without adverse effect or any other complication. Some other local study conducted by Khanna R et al<sup>19</sup> observed the result less pain scores in patients of LigaSure group (P-value  $<0.001$ ). Similarly, Bakhtiar N et al<sup>10</sup> and Ghimire P et al<sup>20</sup> also observed less pain in LigaSure group.

It was presumed that LigaSure hemorrhoidectomy results in exposure of the fibers of the external and the internal anal sphincters leading to a spasm of both sphincters. While the postoperative spasm of the external sphincter is usually weak and temporary; due to the exposure of its fibers after surgery with continuous irritation by fecal matters<sup>21</sup>. In our study observed anal spasm in 3(2.08%) cases, while compare with the study of Tareq Jawad Kadhim<sup>22</sup> conducted hemorrhoidectomy done by ligasure and reported the postoperative complications of procedure are bleeding 34 patients (6.8 %), followed by anal spasm 15 patients (3%), recurrence 12 patients (2.4%).

## CONCLUSION

We conclude that LigaSure hemorrhoidectomy is a sutureless, less intra-operative blood loss, less required post-operative pain management, early return to daily work and higher patient satisfaction.

### Author's Contribution:

Concept & Design of Study:	Raja Muhammad Adeel Khan
Drafting:	Sikandar-e-Azam Yousfani, Muhammad Qasim Mallah
Data Analysis:	Sandesh Kumar and Karim Bux Bhurgri
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Final Approval of version:	Raja Muhammad Adeel Khan

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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