

Modified Lithotomy Position for Perineal Operations

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Abstract

Introduction: The conventional lithotomy position for perineal operations results in a slightly or severely indrawn anus, depending on the body mass index (BMI) or body habitus of the patient. This makes surgical procedures such as hemorrhoidectomy, fissurectomy, and fistulectomy technically difficult for reasons of proper exposure and access to landmarks on the dentate line.

Materials and Methods: A total of 123 patients from 1st August 2011 to 1st February 2014, underwent various perineal operations as follows. 40 stapler hemorrhoidectomy (SH), 20 conventional hemorrhoidectomy (CH), 30 fissurectomy, 30 fistulectomy, 3 vulval procedures like cyst and 3 tumor excision. The duration of the procedure and the advantages of the position were assessed by independent observers (surgical assistants) prospectively. All patients presented with varying degrees of bleeding per rectum, pain at the anal verge in those with vulval tumors or cysts. Pain at the anal verge was present in 10% of those with hemorrhoids and 38% of those with fistula in Ano. Constipation was the complaint in 40% of the entire group. Perianal discharge was present in 23% of patients with hemorrhoids. Prolapse as a complaint was present in 80% of patients with hemorrhoids. Baseline information was recorded for all the patients after a detailed informed consent was taken. The results were recorded on a tabulated pro forma.

Results: The male: female ratio was 1.8:1. The mean age of the patient was 35.5 years with age ranging from 21 to 62 years. The BMI of the patient was distributed as follows, 50 patients had BMI varying from 17 to 25, 42 patients had BMI varying from 25.1 to 32, and 31 patients had BMI varying from 32.1 to 38. 40 SH, 20 CH, 30 fissurectomy, 30 fistulectomy, vulval procedures like cyst and 3 tumor excision.

Conclusion: The conventional lithotomy position is the most commonly used position for perineal surgeries. In our study, we found that the modified lithotomy position is better compared to the conventional position as it reduces the operative time for all types of perineal surgeries particularly SH, CH and fistulectomy. It was also noted that the modified position gives a better visualization and access to the perineal structures. Furthermore, this position was found convenient to the surgical assistant. Hence, we advocate that the modified lithotomy as an effective alternative to the conventional lithotomy position.

Keywords: Perineum, Supine position, Lithotomy, Extreme lithotomy, Complications

INTRODUCTION

The conventional lithotomy position for perineal operations results in a slightly or severely indrawn anus, depending on the body mass index (BMI) or body habitus of the patient. This makes surgical procedures such as hemorrhoidectomy, fissurectomy, and fistulectomy

technically difficult for reasons of proper exposure and access to landmarks on the dentate line. The modified lithotomy position described here flattens the anus and reduces the prominence of the ischial tuberosity, facilitating easier access to anus and thus the surgical procedures in and around the anus.

MATERIALS AND METHODS

Modified Lithotomy Position

It is less than the exaggerated lithotomy position or somewhat similar to reversed knee chest position though the thigh is not touching the abdominal wall. For patients with BMI <25, the height of the stirrups is 1-1^{1/4} foot from the level of the operating table. The angle between

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the anterior abdominal wall and front of thigh at hip is 75° and between calf and posterior aspect of thigh is 100° (Figure 1). For patients with BMI >25 , height of the stirrup being $1\frac{1}{2}$ - $1\frac{3}{4}$ from the table. The angles are 45 - 60° and 120° (Figure 2).

123 patients from 1st August 2011 to 1st February 2014, underwent various perineal operations as follows. 40 stapler hemorrhoidectomy (SH), 20 conventional hemorrhoidectomy (CH), 30 fissurectomy, 30 fistulectomy, 3 vulval procedures like cyst and tumor excision. The duration of the procedure and the advantages of the position were assessed by independent observers (surgical assistants) prospectively. Baseline information was recorded for all the patients after a detailed informed consent was taken. The results were recorded on a tabulated pro forma.

RESULTS

The male: female ratio was 1.8:1. The mean age of the patient was 35.5 years with age ranging from 21 to 62 years. The BMI of the patient was distributed as follows, 50 patients had BMI varying from 17 to 25, 42 patients had BMI varying from 25.1 to 32, and 31 patients had BMI varying from 32.1 to 38.

All patients presented with varying degrees of bleeding per rectum, pain at the anal verge in those with vulval tumors or cysts. Pain at the anal verge was present in 10% of those with hemorrhoids and 38% of those with fistula in Ano. Constipation was the complaint in 40% of the entire group. Perianal discharge was present in 23% of patients with hemorrhoids. Prolapse as a complaint was present in 80% of patients with hemorrhoids.

In this study, all the surgeries were performed by a single surgeon. The assistants were different surgical residents who rated the procedure according to the ease of assisting, visualization and access to the perineal structures, as much better or better or not different in comparison to the conventional procedure.

The mean duration of the procedure was as follows. SH - 38 min, CH - 43 min, fistulectomy - 35 min, fissurectomy lateral sphincterotomy - 17 min, and vulval procedures - 52 min. During the surgical procedures mentioned above, different assistants assessed the advantages and disadvantages of this position in comparison to conventional lithotomy position. They rated the new position in comparison to conventional lithotomy position for exposure as much better in 78%, better in 12%, and not different in 10%. However, they found no disadvantages with the new position in

comparison to the conventional lithotomy. In fact, all assistants unanimously agreed that they had more room to stand and assist the surgeon. No patient developed deep vein thrombosis (DVT), limb neuropathy, and compartment syndrome or leg strain during the 1st week of follow-up.

During the same period, 102 patients underwent similar perineal operations by conventional lithotomy position. The mean duration of the procedure was 47 min for SH, 58 min for CH, 60 min in fistulectomy, 19 min for fissurectomy, and lateral sphincterotomy. In this group also nobody developed DVT, but 15% on the first post-operative day complained of aches in the calf muscles which resolved the next day.

- Statistical analysis was performed using SPSS statistical software for Windows Version 13.0
- Quantitative parametric data were compared using the *t*-test and nonparametric data were compared using the Mann-Whitney test
- Qualitative data were compared using the Chi-square and Fisher's exact tests.

There was statistical difference in duration of surgery between the conventional and modified lithotomy position in time taken for CH, SH and fistulectomy.

The incidence of urinary retention, pain at operative field, secondary hemorrhage and incontinence to flatus was comparable between the two groups.

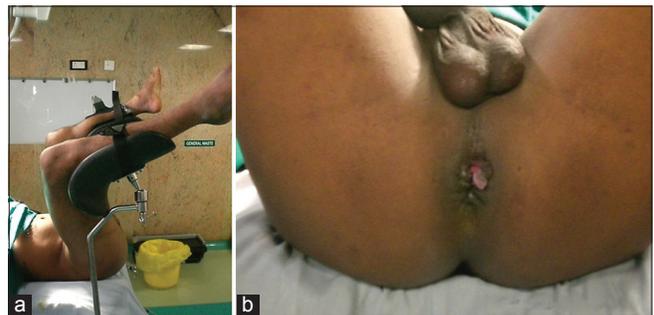


Figure 1: (a and b) Male patient with hemorrhoids in modified lithotomy position

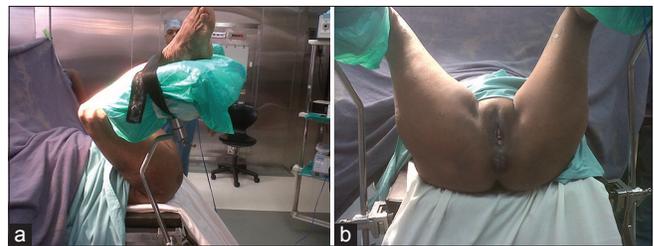


Figure 2: (a and b) Female patient with hemorrhoids in modified lithotomy position

DISCUSSION

In the standard lithotomy position, the patient lies supine with the hips flexed until the thighs are angled between 80° and 100° and knees flexed to a right angle, with the legs placed in stirrups so as to be parallel to the torso. The hip joint is mildly abducted and externally rotated. It is also called the dorsolateral position.^{1,2} The position is named after the ancient surgical procedure for removing kidney stones, gall stones, and bladder stones via the perineum. The word lithotomy is derived from Greek language, lithos meaning stones, and tomos

meaning cut. The position has many benefits to the examining doctor as it provides good exposure of the perineum. This position is also of benefit to the operating surgeon as it gives reasonable access to the perineum for performing many perineal procedures. However, this conventional position results in an in drawn anus making surgery in the vicinity of anus a little cumbersome. The assistants do not get enough space to stand and assist the surgeon. Hence, the “modified lithotomy position” was designed.

In our experience the modified lithotomy position was comparatively better than the conventional position with respect to visualization and access, thus cutting down on the duration of surgery which was statistically significant for CH, SH and fissurectomy. The modified position however provided more room to both operating and the assistant. This was possible due to the flattening of the anus and increased prominence of the perineum as well as more space at the legs of the patient for the assistant to stand. We found that the operating duration was reduced in patients with modified position for all types of surgeries performed.

Perineal operations can be done in various positions like lithotomy, left lateral or prone jack knife position. The lithotomy position has been described to be associated

Table 1: Number of perineal operations

Type of surgery	Modified lithotomy position	Conventional position
SH	40	36
CH	20	18
Fissurectomy	30	25
Fistulectomy	30	23
Vulval procedures (cyst, tumor excision)	3	0
Total	123	102

SH: Stapler hemorrhoidectomy, CH: Conventional hemorrhoidectomy

Table 2: Distribution of BMI in the cohort of patients

50 patients	17-25
42 patients	25.1-32
31 patients	32-38

BMI: Body mass index

Table 3: Mean duration of surgeries

Type of surgery	Conventional position (duration in min)	Modified position (duration in min)
SH	47	38
CH	58	43
Fissurectomy	19	17
Fistulectomy	60	35
Vulval procedures	Nil	52

SH: Stapler hemorrhoidectomy, CH: Conventional hemorrhoidectomy

Table 4: Distribution of type of surgery between two groups

Type of surgery	Modified lithotomy (%)	Conventional lithotomy (%)	Total (%)	P value
SH	40 (32.5)	36 (35.3)	76 (33.8)	0.661
Fissurectomy	30 (24.4)	25 (24.5)	55 (24.4)	0.983
Fistulectomy	30 (24.4)	23 (22.5)	53 (23.6)	0.746
CH	20 (16.3)	18 (17.6)	38 (16.9)	0.839
Vulval cyst excision	2 (1.6)	0 (0)	2 (0.9)	0.502
Vulval tumor excision	1 (0.8)	0 (0)	1 (0.4)	1.000
Total	123 (100)	102 (100)	225 (100)	-

SH: Stapler hemorrhoidectomy, CH: Conventional hemorrhoidectomy

Table 5: Age distribution of patients studied in two groups

Age in years	Modified lithotomy (%)	Conventional lithotomy (%)	Total (%)
21-30	15 (12.2)	13 (12.7)	28 (12.4)
31-40	44 (35.8)	35 (34.3)	79 (35.1)
41-50	37 (30.1)	32 (31.4)	69 (30.7)
51-60	23 (18.7)	18 (17.6)	41 (18.2)
>60	4 (3.3)	4 (3.9)	8 (3.6)
Total	123 (100)	102 (100)	225 (100)
Mean ± SD	42.23 ± 10.43	42.36 ± 10.57	42.29 ± 10.47

Student's *t*-test, *P* = 0.923, Not significant, SD: Standard deviation

Table 6: Duration in minutes

Type of surgery	Modified lithotomy	Conventional lithotomy	P value
SH	35.3 ± 3.4	44.7 ± 4.7	<0.001
CH	41.8 ± 2.0	54.8 ± 4.6	<0.001
Fissurectomy	16.4 ± 1.9	16.8 ± 1.8	0.432
Fistulectomy	32.7 ± 2.4	59.5 ± 3.3	<0.001
Vulval procedures	50.0 ± 2.0		

P < 0.001 being significant, SH: Stapler hemorrhoidectomy, CH: Conventional hemorrhoidectomy

Table 7: Rating as per exposure

Much better	78%
Better	12%
Not different	10%

with various complications particularly if the position taken is exaggerated, as in the high lithotomy. The complications are in the form of compartment syndrome, deep vein thrombosis, peroneal neuropathy, and sciatic neuropathy.^{1,5-12} Proper positioning of the legs in the stirrups, padding of the pressure points, less time spent in this position, and avoiding extreme positioning of the legs lead to a marked reduction in the incidence of these complications.^{2-4,13,14} None of these complications were seen to be associated with the modified lithotomy position and hence can be advocated as a good alternative to the conventional lithotomy position (Tables 1-7).

CONCLUSION

The conventional lithotomy position is the most commonly used position for perineal surgeries. In our study, we found that the modified lithotomy position is better compared to the conventional position as it reduces the operative time for all types of perineal surgeries. It was also noted that the modified position gives a better visualization and access to the perineal structures. Furthermore, this position was found convenient to the surgical assistant. Hence, we advocate that the modified lithotomy as an effective alternative to the conventional lithotomy position.

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