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BMI Morbidity Issues in Correlation to Hysterectomy Routes

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Abstract

Background: *Obesity is a growing widespread epidemic that results in gynecological morbidities necessitating performance of hysterectomy performance in an elective manner, however although there are various routes for performing the procedure the challenge remains in the clinical decision making to which route suits each patient according to anatomical and expected morbidities the decision in addition should consider the cause for hysterectomy and requires multidisciplinary practice.*

Aim: *To investigate the BMI morbidity issues in correlation to the chased hysterectomy route to determine the impact and influence of obesity severity level on emergence of complications.*

Methodology: *The current research study was conducted from April 2017 till January 2019 in a prospective manner at Mohamed Saleh Bashrahil Hospital ,Holly Makkah, Saudi Arabia, the total number of research study subjects recruited (n=66) in which 17 cases were normal weight, 19 overweight „22 cases were obese , 8 cases were morbidly obese all cases were undergoing hysterectomy in which 32 cases were performed abdominally (48.5%) 12 cases were performed vaginally (18.2%) 22 cases were performed laparoscopically (33.3%).*

Results: *logistic regression statistical analysis of the obtained research data in which there was highly statistical significant difference as regards operative time (abdominal, laparoscopic and vaginal p values=0.003, <0.001, 0.009, consecutively), reoperation within 30 days was statically significantly different between the research groups as regards laparoscopic approach (p value=0.041), readmission within 30 days was statistically significantly different between research groups as regards abdominal approach (p value=0.012), finally operative morbidity was highly statically significantly different between research groups as regards wound infection in abdominal and vaginal approaches (p values<0.001, 0.008, consecutively).*

Conclusions: *morbid obesity is a growing concern in hysterectomy performance showing great morbidity issues by all routes of performance of the hysterectomy procedure (abdominal,vaginal and laparoscopic) future research should consider the effectiveness of the safe guarding protocols in those particular category of cases by evaluating the different preoperative antibiotic prophylaxis usage and tools implemented within performance of the procedure such as abdominal wall lifting devices in abdominal approach.*

Introduction

Hysterectomy one of the most common gynecological procedures performed in gynecological surgical practice for various indications involving menstrual bleeding disorders not responsive to medical management and conservative surgical procedures and for oncological indications. The surgical approach for the hysterectomy procedure is influenced by various factors involving the indication, surgical skills, experience, and body weight of the patient. vaginal hysterectomy approach is considered a favorable approach by many gynecologists particularly in obese cases with no requirement to remove the ovaries, however it is considered more skillful than abdominal hysterectomy. The most favorable approach uprising the last few years is the laparoscopic approach for hysterectomy that reduces various complications and morbidities correlated to the procedure [1-3].

On the other hand the laparoscopic approach for performing hysterectomy demands fulfillment of more costly instruments that are not available and accessible to all surgeons furthermore laparoscopic hysterectomy requires highly skilled and trained surgeon to be performed in a safe manner meeting the required standards for surgical practice .Obesity in gynecological cases performing a surgical intervention is a well-known challenging issue for gynecologists all over the world due to special preparations and requirements that should be fulfilled before conducting the procedure in which the anesthetic requirements and coexisting medical comorbidities are life threatening issues if not properly managed to assure clinical status stability during and after the operation [4-7].

Obesity is a growing epidemic all over the globe and it is increasingly common to perform hysterectomies in obese cases. Obese cases represent an anatomical and surgical challenge due to exposure requirement and accessibility issues during the conductance of the surgical intervention. Anesthetic risks could be raised for various underlying issues in obese cases e.g. the presence of hypertension and DM in those cases that is a frequent clinical scenario resulting in difficult intubation issues and concerns [8-11].

Obese cases requiring a hysterectomy procedure demands multidisciplinary approach management pathway to aid in enhancing the quality of the service and increase the safety levels in those categories of cases. Choosing the approach of hysterectomy should be balanced according to the surgeon's skills, feasibility, and available tools to safe guard and reduce possible clinical risks in those cases [12-14].

Even though the general amplified surgical morbidity issues in obese cases is revealed and displayed by various poorly conducted research studies, however research studies and research data about perioperative complications after hysterectomy procedures in obese cases is still scarce and requires further research efforts to investigate the possible complications that could arise in those category of cases to elucidate the best management pathway in those cases especially when investigating the laparoscopic and vaginal hysterectomy surgical approaches [15,16].

An elevated BMI is a clinical risk factor for various gynecological diseases such as endometrial hyperplasia and endometrial cancer Causing the emergence of indications demanding the performance of hysterectomy furthermore the elevated levels of BMI is closely correlated to intra and post-operative complications and issues as regards patients recovery on the other hand, the research studies that have investigated The correlation and linkage of BMI categories in correlation to routes of hysterectomies and expected complications are still defective requiring extensive research efforts [17,18].

Aim

To investigate the BMI morbidity issues in correlation to the chased hysterectomy route to determine the impact and influence of obesity severity level on emergence of complications

Methodology

The current research study was conducted from April 2017 till January 2019 in a prospective manner at Mohamed Saleh Bashrahil Hospital ,Holly Makkah ,Saudi Arabia,the total number of research study subjects recruited (n=66) in which 17 cases were normal weight, 19 overweight, 22 cases were obese, 8 cases were morbidly obese all cases were undergoing hysterectomy in which 32 cases were performed abdominally (48.5%) 12 cases were performed vaginally (18.2%) 22 cases were performed laparoscopically (33.3%) within the normal weight research group 7 cases were performed abdominally (41.2%) 4 cases were performed vaginally (23.5%) 6 cases were performed laparoscopically (35.3%),overweight cases 9 study subjects were performed abdominally (47.4%) 4 cases vaginally (21.1%) 6 laparoscopically (31.6%) whereas as in the obese research group 12 cases were performed abdominally (54.5%) 3 cases were performed vaginally (13.6%) 7 cases were performed laparoscopically (31.8%) while within the morbidly obese research group 4 cases were performed abdominally (50.0%) 1 cases only vaginally (12.5%) 3 cases laparoscopically (37.5%). All recruited study subjects have undergone full clinical history examination and multidisciplinary preoperative management and preparation with ASA Classification of cases to determine the risk level for anesthesia. The choice of the route of the operation was the decision taken by 2 senior gynecology consultants and the anesthiologist according to each case medical data and anatomical criteria observed clinically in a multidisciplinary fashion to assure the highest safety level .

Statistical Analysis

Data were collected, revised, coded, and entered to the Statistical Package for Social Science (IBM SPSS) version 23. The quantitative data were presented as mean, standard deviations and ranges when their distribution found parametric. Also, qualitative variables were presented as number and percentages. The comparison between groups regarding qualitative data was done by using Chi-square test and/or Fisher exact test when the expected count in any cell found less than 5. The comparison between more than two independent groups with quantitative data and parametric distribution was done by using One Way ANOVA. Linear regression analysis was used to assess the adjusted means with 95% confidence intervals and also logistic regression analysis was used to assess the adjusted odds ratio with 95% confidence interval. All calculated odds ratio and 95% confidence interval were adjusted for age, race, ethnicity, smoking, diabetes, and ASA classification.

P for trend, two-sided Wald tests calculated from the regression models by including the midpoint of each body mass index category as a single continuous variable in the multivariable model. The confidence interval was set to 95% and the margin of error accepted was set to 5%. So, the p-value was considered significant at the level of < 0.05.

Results

	Total	Normal	Overweight	Obese	Morbid obese	Test value	P-value	Sig.
	No. = 66	No. = 17	No. = 19	No. = 22	No. = 8			
Age (yrs); mean±SD	47.35±9.50	46.8±10.35	47.9±9.85	46.4±8.87	48.3±8.92	0.130•	0.942	NS
Surgical approach; no. (%)								
Abdominal	32(48.5%)	7(41.2%)	9(47.4%)	12(54.5%)	4(50.0%)	1.202*	0.976	NS
Vaginal	12(18.2%)	4(23.5%)	4(21.1%)	3(13.6%)	1(12.5%)			
Laparoscopic	22(33.3%)	6(35.3%)	6(31.6%)	7(31.8%)	3(37.5%)			
Smoking; no. (%)								
No	54(81.8%)	14(82.4%)	15(78.9%)	18(81.8%)	7(87.5%)	0.282*	0.963	NS
Yes	12(18.2%)	3(17.6%)	4(21.1%)	4(18.2%)	1(12.5%)			
Diabetes; no. (%)								NS
No	61(92.4%)	16(94.1%)	18(94.7%)	20(90.9%)	7(87.5%)	0.657*	0.883	
Yes	5(7.6%)	1(5.9%)	1(5.3%)	2(9.1%)	1(12.5%)			
ASA classification; no. (%)								
Normal	9(13.6%)	4(23.5%)	3(15.8%)	2(9.1%)	0(0.0%)			
Mild disease	45(68.2%)	11(64.7%)	14(73.7%)	16(72.7%)	4(50.0%)	13.14*	0.156	NS
Severe disease	11(16.7%)	1(5.9%)	2(10.5%)	4(18.2%)	4(50.0%)			
Life-threatening	1(1.5%)	1(5.9%)	0(0.0%)	0(0.0%)	0(0.0%)			
Supracervical hysterectomy; no. (%)								
No	55(83.3%)	14(82.4%)	16(94.1%)	18(105.9%)	7(41.2%)	0.159*	0.983	NS
Yes	11(16.7%)	3(17.6%)	3(17.6%)	4(23.5%)	1(5.9%)			

•One Way ANOVA test; *Chi-square test

Table 1: Reveals and displays the total number of research study subjects recruited (n=66) in which 17 cases were normal weight,19 overweight, 22 cases were obese, 8 cases were morbidly obese there was no statistical significant difference as regards hysterectomy approach performed within each research group (abdominal, vaginal, laparoscopic), smoking, DM, ASA classification, supracervical hysterectomy performance (p values=0.976, 0.963, 0.883, 0.156, and 0.983 consecutively).

Variable	Normal	Overweight	Obese	Morbid obese	Test value	P-value	Sig.
	No. = 17	No. = 19	No. = 22	No. = 8			
Surgical approach							
Abdominal	7(41.2%)	9(47.4%)	12(54.5%)	4(50.0%)			
Laparoscopic	6(35.3%)	6(31.6%)	7(31.8%)	3(37.5%)	1.202*	0.976	NS
Vaginal	4(23.5%)	4(21.1%)	3(13.6%)	1(12.5%)			
Operative time (min)							
Abdominal	106.54 ± 37.8	113.24 ± 25.6	124.3 ± 35.9	149.2 ± 34.5	3.293•	0.026	S
Laparoscopic	109.6 ± 35.3	134.2 ± 40.4	143.5 ± 32.5	159.4 ± 22.5	4.756•	0.005	S
Vaginal	96.4 ± 23.3	109.42 ± 21.8	113.5 ± 20.2	115.1 ± 22.8	3.030•	0.036	S
Length of stay							
Abdominal	2.1 ± 0.8	2.3 ± 0.87	2.6 ± 0.27	3.2 ± 0.5	5.711•	0.002	HS
Laparoscopic	1.3 ± 0.32	1.41 ± 0.42	1.5 ± 0.25	1.7 ± 0.23	3.077•	0.034	S

Vaginal	1.3 ± 0.52	1.32 ± 0.41	1.42 ± 0.52	1.45 ± 0.32	0.353•	0.787	NS
Reoperation within 30d							
Abdominal	1 (5.9%)	1 (5.26%)	1 (4.6%)	1 (12.5%)	0.694*	0.874	NS
Laparoscopic	1 (5.9%)	1 (5.26%)	1 (4.6%)	3 (37.5%)	8.911*	0.030	S
Vaginal	1 (5.9%)	1 (5.26%)	1 (4.6%)	1 (12.5%)	0.694*	0.874	NS
Readmission within 30d							
Abdominal	1 (5.9%)	1 (5.26%)	1 (4.6%)	3 (37.5%)	8.911*	0.030	S
Laparoscopic	3 (17.65%)	2 (10.53%)	1 (4.6%)	1 (12.5%)	1.772*	0.621	NS
Vaginal	1 (5.9%)	2 (10.53%)	2 (9.1%)	1 (12.5%)	0.372*	0.945	NS
Operative morbidity							
Blood transfusion							
Abdominal	1 (5.9%)	1 (5.26%)	1 (4.6%)	3 (37.5%)	8.911*	0.030	S
Laparoscopic	1 (5.9%)	1 (5.26%)	1 (4.6%)	1 (12.5%)	0.694*	0.874	NS
Vaginal	1 (5.9%)	1 (5.26%)	1 (4.6%)	1 (12.5%)	0.694*	0.874	NS
Infectious morbidity							
Wound infection							
Abdominal	1 (5.9%)	1 (5.26%)	1 (4.6%)	3 (37.5%)	8.911*	0.030	S
Laparoscopic	1 (5.9%)	1 (5.26%)	1 (4.6%)	3 (37.5%)	8.911*	0.030	S
Vaginal	1 (5.9%)	1 (5.26%)	1 (4.6%)	3 (37.5%)	8.911*	0.030	S
Urinary tract infection							
Abdominal	1 (5.9%)	1 (5.26%)	2 (9.1%)	2 (25.0%)	2.999*	0.391	NS
Laparoscopic	1 (5.9%)	2 (10.53%)	1 (4.6%)	2 (25.0%)	3.259*	0.353	NS
Vaginal	1 (5.9%)	1 (5.26%)	1 (4.6%)	2 (25.0%)	3.972*	0.264	NS

•One Way ANOVA test; *Chi-square test

Table 2 reveals and displays the comparative statistical analysis between the research groups as regards the surgical approach performed in which there was no statistical significant difference (p value =0.976) ,operative time it was statistically significant different between all research groups recruited abdominal approach (p value =0.026) shortest in the normal weight research group(106.54 ± 37.8 min) and longest in the morbidly obese research group (149.2 ± 34.5 min) laparoscopic approach (p value=0.005) shortest in the normal weight research group (109.6 ± 35.3 min) and longest in the morbidly obese research group (159.4 ± 22.5 min) vaginal research group (p value=0.036) shortest in the normal weight research group(96.4 ± 23.3 min),and longest in the morbidly obese research group (115.1 ± 22.8 min),furthermore statically significant difference was present in hospital stay in which in abdominal approach it was highly statically significant (p value=0.002),laparoscopic procedure (p value=0.030)whereas there was no statistical significant difference as regards length of hospital admission in vaginal research group (p value=0.874).

Concerning hospital readmission within 30 days was only statically significant within the cases that were operated abdominally (p value =0.030) being most frequent within the morbid obese research group (n=3, representing 37.5% of the research group).

Concerning operative morbidity blood transfusion was only statistically significant within cases performed abdominally being highest within morbidly obese research group (p value=0.030), wound infection was highest in the morbidly obese research group in a statically significant fashion in all three approaches (p values=0.030), however UTI wasn't statistically significantly different between the research groups (abdominal, laparoscopic and vaginal p values=0.391, 0.353, 0.264, consecutively).

Variable	**Normal**	**Overweight**	**Obese**	**Morbid obese**	**P-value•**	**Sig.**
	No. = 17	**No. = 19**	**No. = 22**	**No. = 8**		
Operative time (min) *						
Abdominal	85.4 (73.9 – 102.4)	92.1 (82-4 – 99.5)	107 (102.1 – 113.5)	121.2 (113.5 – 125.4)	0.003	HS
Laparoscopic	98.4 (86.2 – 111.5)	116.4 (109.3 – 121.4)	127.9 (118.5 – 139.2)	134.5 (131.2 – 138.3)	<0.001	HS
Vaginal	77.2 (65.4 – 80.9)	86.2 (81.1 – 93.4)	99.1 (94.1 – 102.2)	105.6 (101.3 – 107.2)	0.009	HS
Length of stay *						

Abdominal	0.96 (0.94 – 1.2)	0.97 (0.93 – 1.03)	0.99 (0.87 – 1.12)	1.0 (0.87 – 1.3)	0.712	NS
Laparoscopic	0.42 (0.36 – 1.03)	1.1 (0.88 – 1.2)	1.2 (0.92 – 1.34)	0.99 (0.92 – 1.2)	0.325	NS
Vaginal	0.55 (0.49 – 1.1)	1.00 (0.85 – 1.3)	1.1 (0.95 – 1.23)	1.0 (0.94 – 1.08)	0.611	NS
Reoperation within 30d ‡						
Abdominal	Ref.	0.88 (0.71 – 1.11)	1.08 (0.52 – 1.3)	1.15 (0.92 – 1.64)	0.350	NS
Laparoscopic	Ref.	0.71 (0.62 – 0.95)	0.65 (0.52 – 0.82)	0.72 (0.83 – 1.14)	0.041	S
Vaginal	Ref.	1.1 (0.75 – 1.36)	1.04 (0.75 – 1.32)	1.2 (0.92 – 1.51)	0.520	NS
Readmission within 30d ‡						
Abdominal	Ref.	0.62 (0.42 – 0.93)	0.55 (0.48 – 1.12)	1.1 (0.89 – 1.32)	0.012	S
Laparoscopic	Ref.	0.87 (0.57 – 1.2)	0.72 (0.52 – 1.32)	0.85 (0.62 – 1.55)	0.765	NS
Vaginal	Ref.	1.1 (0.82 – 1.35)	1.04 (0.92 – 1.21)	1.1 (0.85 – 1.36)	0.542	NS
Operative morbidity ‡						
Blood transfusion						
Abdominal	Ref.	0.85 (0.65 – 1.21)	0.79 (0.55 – 0.98)	1.02 (0.89 – 1.14)	0.102	NS
Laparoscopic	Ref.	0.83 (0.77 – 1.04)	0.73 (0.46 – 1.22)	1.1 (0.69 – 1.54)	0.079	NS
Vaginal	Ref.	0.92 (0.52 – 1.1)	0.69 (0.52 – 1.37)	1.09 (0.82 – 1.27)	0.082	NS
Infectious morbidity ‡						
Wound infection						
Abdominal	Ref.	0.95 (0.87 – 1.21)	1.35 (0.82 – 1.27)	2.25 (1.18 – 2.38)	<0.001	HS
Laparoscopic	Ref.	0.87 (0.82 – 1.33)	0.86 (0.55 – 1.32)	1.87 (0.98 – 4.14)	0.056	NS
Vaginal	Ref.	0.92 (0.79 – 1.08)	0.72 (0.62 – 1.08)	1.56 (1.22 – 3.97)	0.008	HS
Urinary tract infection						
Abdominal	Ref.	0.77 (0.65 – 1.25)	1.17 (0.92 – 1.35)	1.34 (0.69 – 1.65)	0.083	NS
Laparoscopic	Ref.	1.13 (0.82 – 1.48)	0.81 (0.48 – 0.92)	1.21 (0.76 – 1.52)	0.521	NS
Vaginal	Ref.	0.82 (0.56 – 0.92)	0.92 (0.72 – 1.27)	1.24 (0.85 – 1.43)	0.372	NS

*Results from linear regression models and expressed as adjusted means with 95% confidence intervals.
‡Results from logistic regression models and expressed as adjusted odds ratios with 95% confidence intervals.
•P for trend, two-sided Wald tests calculated from the regression models

Table 3: Reveals and displays logistic regression statistical analysis of the obtained research data in which there was highly statistical significant difference as regards operative time (abdominal ,laparoscopic and vaginal p values=0.003,<0.001,0.009,consecutively),reoperation within 30 days was statically significantly different between the research groups as regards laparoscopic approach (p value=0.041),readmission within 30 days was statistically significantly different between research groups as regards abdominal approach (p value=0.012),finally operative morbidity was highly statically significantly different between research groups as regards wound infection in abdominal and vaginal approaches (p values<0.001, 0.008, consecutively).

Discussion

Obesity and gynecological operative morbidity is a growing area of research interest as hysterectomy is the most common gynecological procedure performed it is critical and crucial to choose the proper approach according to the severity and anatomical challenge of the case, availability of

proper intraoperative tools and anesthetic requirements for the obese cases requiring hysterectomy for various indications is the cornerstone for safe practice protocols. abdominal approach for hysterectomy although widely practiced by gynecologists it is challenging in morbidly obese cases since it carries various morbidity issues intra and post operatively such as wound infection and DVT. vaginal approach although more suitable for obese cases in various cases scenarios in every day practice such as cases having uterine prolapse it is unsuitable in some cases that have oncological indications for the procedure .Laparoscopic approach for hysterectomy although uprising all over the globe it still carries the risk of morbidity due to challenging anesthetic requirements particularly in morbidly obese cases due to pneumoperitoneum required and frequent medical comorbidities such as DM and hypertension. Furthermore, laparoscopic approach necessitates presence of expensive tools and surgical instruments and training and surgical skills level that may not be available in all hospitals [2,6,10].

The current research study was conducted from April 2017 till January 2019 in a prospective manner, the total number of research study subjects recruited (n=66) in which 17 cases were normal weight,19 overweight, 22 cases were obese, 8 cases were morbidly obese there was no statistical significant difference as regards hysterectomy approach performed within each research group (abdominal, vaginal, laparoscopic), smoking, DM, ASA classification, supracervical hysterectomy performance (p values=0.976, 0.963, 0.883, 0.156, and 0.983 consecutively). the comparative statistical analysis between the research groups as regards the surgical approach performed in which there was no statistical significant difference (p value =0.976), operative time it was statistically significant different between all research groups recruited abdominal approach (p value =0.026) shortest in the normal weight research group (106.54 ± 37.8 min) and longest in the morbidly obese research group (149.2 ± 34.5 min) laparoscopic approach (p value=0.005) shortest in the normal weight research group (109.6 ± 35.3 min) and longest in the morbidly obese research group (159.4 ± 22.5 min) vaginal research group (p value=0.036) shortest in the normal weight research group (96.4 ± 23.3 min), and longest in the morbidly obese research group (115.1 ± 22.8 min), furthermore statically significant difference was present in hospital stay in which in abdominal approach it was highly statically significant (p value=0.002),laparoscopic procedure (p value=0.030)whereas there was no statistical significant difference as regards length of hospital admission in vaginal research group (p value=0.874).

Furthermore, concerning hospital readmission within 30 days was only statically significant within the cases that were operated abdominally (p value =0.030) being most frequent within the morbid obese research group (n=3, representing 37.5% of the research group).

Finally concerning operative morbidity blood transfusion was only statistically significant within cases performed abdominally being highest within morbidly obese research group(p value=0.030), wound infection was highest in the morbidly obese research group in a statically significant fashion in all three approaches (p values=0.030), however UTI wasn't statically significantly different between the research groups (abdominal, laparoscopic and vaginal p values=0.391, 0.353, 0.264, consecutively) logistic regression statistical analysis of the obtained research data in which there was highly statistical significant difference as regards operative time (abdominal, laparoscopic and vaginal p values=0.003, <0.001, 0.009, consecutively), reoperation within 30 days was statically significantly different between the research groups as regards laparoscopic approach (p value=0.041), readmission within 30 days was statistically significantly different between research groups as regards abdominal approach (p value=0.012), finally operative morbidity was highly statically significantly different between research groups as regards wound infection in abdominal and vaginal approaches (p values<0.001, 0.008, consecutively).

A prior cohort research study involved 20 353 cases performing hysterectomy research data was obtained and analyzed in which, 6.0% had a BMI, 20 kg/m^2, 31.9% with BMI between 25 and 30 kg/m^2 (classified as overweight) and 17.5% with a BMI ≥ 30 kg/m^2 (categorized as obese). The total complication rate was 17.6%, in which bleeding being the most common specific complication (6.8%). Furthermore, the research team of investigators revealed and displayed the following results co-morbidity status and route of hysterectomy, obesity have been correlated and linked to raised risk of heavy bleeding during surgical procedure performance [odds ratio (OR) = 3.64 (2.90–4.56)], all bleeding complications [OR = 1.27 (1.08–1.48)] and infection [OR = 1.47 (1.23–1.77)]. The research team concluded that obesity raises the risks of bleeding and infections after abdominal hysterectomy [3,7,12].

Another research study priorly performed to asses and evaluate the impact of body mass index on laparoscopic hysterectomy clinical outcomes conducted in a retrospective manner. The research team obtained the research data of 183 study subjects that have undergone total laparoscopic hysterectomy cases were categorized according to BMI, as follows: underweight research group normal-weight research group, overweight research group, and obese research group research data obtained and statistically analyzed involved operative time, estimated blood loss and postoperative hospital stay. The research team of investigators revealed and displayed the following results in which in which in comparison to the normal-weight research group, the obese research group had statistically significantly more complication rates (*P value*= 0.012) and longer operative time (*P value* = 0.04).

The underweight and overweight research groups did not have statistically significantly different surgical outcomes than the normal-weight research group. The research team concluded that Obese cases had statistically significantly longer operative times and more perioperative complication rates in comparison to patients with normal weight [1,8,14].

Another prior research study like the current research in approach and methodology have revealed and displayed that obese cases had statistically significantly longer operation times and more perioperative complications than cases having normal weight. Furthermore, the obese research group did not have longer postoperative hospital stays or greater hospital readmission frequencies within 30 days after discharge in comparison to normal-weight research group.

Another research team of investigators have mentioned according to their research data results analysis that greater BMI in laparoscopic hysterectomy was statistically significantly correlated and linked with longer operative time, elevated estimated blood loss, and increased severity of complication. on the other hand, another research study revealed that that there was no statistical correlation or linkage between elevated BMI indices and surgical complication [11,13,17].

Conclusions

Morbid obesity is a growing concern in hysterectomy performance showing great morbidity issues by all routes of performance of the hysterectomy procedure (abdominal, vaginal and laparoscopic) future research should consider the effectiveness of the safe guarding protocols in those particular category of cases by evaluating the different preoperative antibiotic prophylaxis usage and tools implemented within performance of the procedure such as abdominal wall lifting dveices in abdominal approach .Advances and investigative research efforts in the future should consider performance of multicentric studies on obese and morbidly obese cases undergoing hysterectomies

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