

Incidence of Paraumbilical Hernia in Patients with Increased BMI

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ABSTRACT

Objective: To identify the incidence of paraumbilical hernia in patients with increased Body Mass Index (BMI). **Study design:** Prospective cohort study **Duration:** August 2016 to May 2017. **Setting:** Allied Hospital, Faisalabad. **Methodology:** A total of 66 cases with paraumbilical hernia were included. A questionnaire was applied to record data. BMI was calculated and data was assessed using statistical methods. **Results:** Out of 66 paraumbilical hernia patients 16.7%(n=11) were overweight, 4.5%(n=3) were of normal weight 77.3% (n=51) were obese and only 1.5% (n=1) were underweight. **Conclusion:** This study highlights increased BMI as a significant risk factor for Paraumbilical hernia development. Most patients have multiple risk factors such as constipation and lower urinary track symptoms. General population should be educated about healthy diet and exercise to reduce the risk of PUH.

Keywords: Body mass index (BMI), Obesity, Paraumbilical hernia (PUH)

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INTRODUCTION

The word “hernia” is derived from Greek and it means “bulge” or “offshoot”. A paraumbilical hernia is a defect in fascial plane around umbilical region which results in protrusion of omentum or intestines through muscular coverings of abdominal wall. The hernia itself is covered by skin and subcutaneous tissue. A true hernia is caused by failure of umbilical ring’s closure during gestation resulting in a defect in linea alba. Most hernias are small and close spontaneously within first five years of life; they do not require any operative intervention. Paraumbilical hernias can also be acquired at later stages of life. Patients with increased intra-abdominal pressure are at higher risk of developing hernias. Incidence is significantly higher in patients with pregnancy, obesity, ascities, weight lifting and chronic abdominal distention.¹

Majority of the patients with PUH are obese with an increased BMI. A survey conducted in Pakistan during 2016 confirmed obesity as a major public health issue. The incidence was found to be 25% with maximum incidence in women (aged 35-54 years) having a prevalence of 42.8%.²

Patients typically present with swelling around umbilicus, skin color changes or pain. A change in color, irreducibility and pain require immediate investigation and surgery due to risk of incarceration.³ An uncomplicated hernia is repaired surgically under general anesthesia on elective operation list. Hernias are repaired with open surgical technique and laparoscopic as well.⁴ The most common procedure done in our setup is onlay hernioplasty. Prognosis is excellent but there is always a risk of infection or recurrence.

METHODOLOGY

Study Design: It was prospective cohort study.

Settings: Allied Hospital Faisalabad

Duration: from August 2016 to May 2017

Inclusion Criteria: Sixty-six patients of both sexes were included in the study.

Exclusion Criteria: Patients who did not give consent were excluded.

Methods: A predesigned questionnaire was applied to collect data regarding name, gender, age, height, weight and probable risk factors such as number of pregnancies, history of surgery, lower urinary track symptoms and constipation. BMI values were calculated using height and weight. BMI categories were made according to WHO recommendations for people of Asian ethnicity. BMI less than 18.5 was labeled underweight, 18.5-24.9 was labeled Normal, 25-25.9 was labeled overweight. A BMI value of 30 or more was considered Obese.⁵ Associated pathology such as gallbladder stones, fatty hepatomegaly and hernia repair procedure were also recorded.⁶ Data was analyzed statistically.

RESULTS

Sixty six patients with age ranging from 25-70 years were included in the study out of which 17 (25.8%) were male and 49 (74.2%) were females. The mean age was calculated to be 45 and median was 45.09 with a standard deviation of 10.8. Figure 1 shows frequency of patients in various age groups. The mean BMI of patients was 32.8, minimum was 17.3 and maximum was 51.8. Frequency of overweight patients was 16.7 % (n=11), 4.5%(n=3) were of normal weight, 77.3% (n=51) were obese and only 1.5% (n=1) were underweight. (Figure 2)

Out of 66 patients 1 male patient complained of lower urinary track symptoms and 23 (34.8%) had a history of constipation. Only 2 patients (3%) complained of chronic cough. All females

had a history of pregnancy and 31(63.2%) females had history of 5 or more pregnancies. Associated co morbidities of gall stones and fatty hepatomegaly were found in 7(10.6%) and 14 (21.2%) patients respectively. History of previous abdominal surgeries was present in 22 (33%) patients, 50% (n=11) of these patients underwent single procedure while 50% had history multiple procedures. Recurrent PUH was noticed in 4 (6.1%) patients. Table 1 shows stratification of BMI with respect to risk factors.

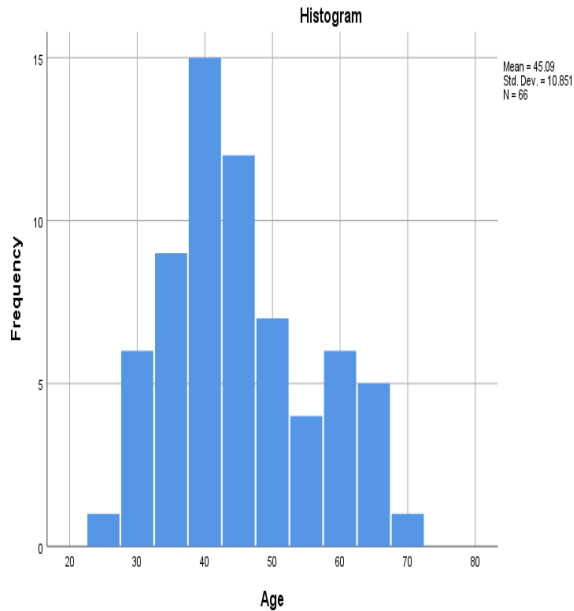


Figure 1: Age of patients

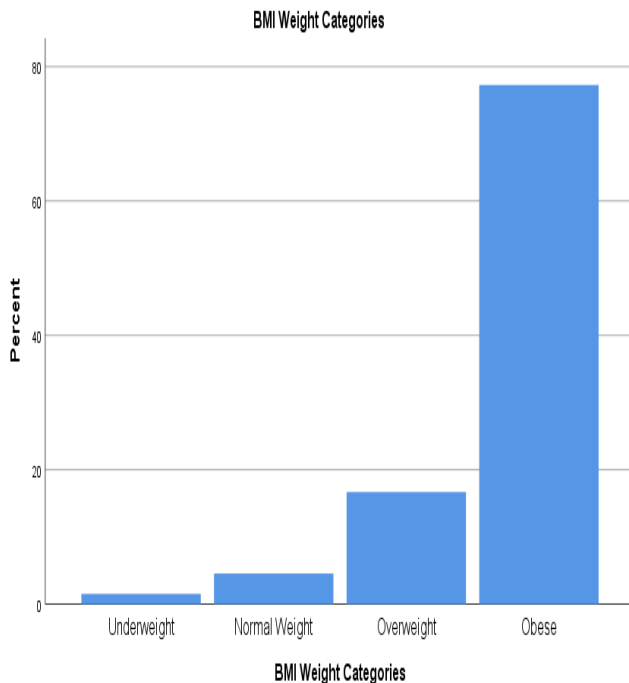


Figure 2: BMI weight categories

Table 1: Stratification of BMI with respect to risk factors

Variable	BMI Categories			
	Underweigh t	Norma l	Overweigh t	Obese
Male	1 5.9%	2 11.8%	4 23.4%	10 58.8%
Female	0 0%	1 2%	7 14.3%	41 83.7%
Prostate	0 0%	1 100%	0 0%	0 0%
Pregnancy >5	0 0%	1 3.2%	4 12.9%)	26 83.8%
Cough	0 0%	0 0%	1 50%	1 50%
Gallbladder Stones	0 0%	1 14.3%	1 14.3%	5 71.4%
Hepatomegal y	0 0%	0 0%	1 7.1%	13 92.9%

DISCUSSION

This study was conducted to identify prevalence of obesity in patients with PUH. BMI of 66 patients was calculated. 3 patients had normal BMI while 51 patients were obese. A retrospective study conducted by Owei *et al.* analyzed data by American College of Surgeons National Surgical Quality Improvement Program from 2005 to 2015. 58.5% patients were obese and significant complication rates were observed in patients with an increase in BMI. They concluded increased BMI is a risk factor for hernia formation, preoperative and post-operative complications.⁷

A study conducted by Sauerland *et al.* found statistically significant increase in recurrence rate (11%) of hernia after repair in patients with increased BMI.⁸

Sugermn *et al.* conducted a study to demonstrate greater risk of developing ventral and incisional hernia in patients with increased BMI. 35% patients developed post-operative complications such as wound infection (12%), seroma formation (5%) and recurrent hernias (4%).⁹

CONCLUSION




Our study highlights the prevalence of obesity in PUH patients. Obesity is a significant risk factor for development of abdominal wall hernias. Most patients have multiple risk factors such as constipation and lower urinary track symptoms. General population should be educated about healthy diet and exercise to reduce the risk of PUH.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

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