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## ORIGINAL ARTICLE

# Obesity and complicated diverticular disease of the colon<sup>☆</sup>



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### KEYWORDS

Diverticular disease;  
Complicated;  
Obesity

### Abstract

**Background:** The incidence of diverticular disease of the colon has been rising in recent years, and the associated factors are: low ingestion of fibre, age, lack of physical activity, and obesity. **Material and methods:** A retrospective, descriptive, observational study was conducted on patients with the diagnosis of complicated diverticular disease requiring surgical or interventional treatment, for a period of 12 years.

**Results:** A total of 114 patients (72 males, and 42 females), age range 28–91 years. More than three-quarters (88 patients; 77.19%) had a body mass index (BMI) between 25 and 40 kg/m<sup>2</sup>, and 26 patients (22.8%) had a BMI between 20 and 25 kg/m<sup>2</sup>. Among the patients with BMI less than 25 kg/m<sup>2</sup>, 12 patients had Hinchey 1 (46%), 8 Hinchey 2 (30.7%), 4 Hinchey 3 (15.4%), and two Hinchey 4 (7.7%). Of the patients with BMI greater than 25 kg/m<sup>2</sup>, 19 patients had Hinchey 1 (21.6%), 24 Hinchey 2 (27.3%), 27 Hinchey 3 (30.7%), and 18 Hinchey 4 (20.45%). A statistically significant difference ( $p < 0.001$ ) was found between groups using Mann–Whitney *U* test. The BMI greater than 25 kg/m<sup>2</sup> as risk factor for complicated diverticular disease showed odds ratio of 3.4884 (95% confidence interval 1.27–9.55) with *Z* value of 2.44 ( $p = 0.014$ ).

**Conclusions:** In this study, obesity was associated with an increased incidence and severity of complicated diverticular disease.

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**PALABRAS CLAVE**

Enfermedad  
diverticular;  
Complicación;  
Obesidad

**Obesidad y enfermedad diverticular del colon complicada****Resumen**

*Antecedentes:* La incidencia de la enfermedad diverticular del colon ha aumentado en los últimos años, los factores de riesgo identificados son: baja ingestión de fibra, edad, ausencia de actividad física y obesidad.

*Material y métodos:* Estudio retrospectivo, observacional y descriptivo en pacientes con diagnóstico de enfermedad diverticular complicada, que requirieron de tratamiento quirúrgico o intervencionista, durante un periodo de 12 años.

*Resultados:* Se incluyeron 114 pacientes (72 hombres y 42 mujeres), el rango de edad fue de 28 a 91 años. 88 pacientes (77.19%) tuvieron un índice de masa corporal (IMC) entre 25 y 40 kg/m<sup>2</sup> y 26 pacientes (22.8%) tuvieron un IMC entre 20 y 25 kg/m<sup>2</sup>. Dentro de los pacientes con IMC menor a 25 kg/m<sup>2</sup>, 12 tuvieron una clasificación de Hinchey 1 (46%), 8 Hinchey 2 (30.7%), 4 Hinchey 3 (15.4%), y 2 Hinchey 4 (7.7%). De los pacientes con IMC mayor a 25 kg/m<sup>2</sup>, 19 presentaron Hinchey 1 (21.6%), 24 Hinchey 2 (27.3%), 27 Hinchey 3 (30.7%) y 18 Hinchey 4 (20.45%). Mediante prueba de U de Mann-Withney se identificó una diferencia estadísticamente significativa ( $p < 0.001$ ) entre ambos grupos. El IMC mayor a 25 kg/m<sup>2</sup> como factor de riesgo de enfermedad diverticular complicada mostró una razón de momios de 3.4884 (intervalo de confianza 95%, 1.27–9.55) con *valour* de Z de 2.44 ( $p = 0.014$ ).

*Conclusiones:* En este estudio, la obesidad se relacionó con una mayor incidencia y gravedad de enfermedad diverticular complicada.

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**Background**

Currently, obesity constitutes a serious health problem in our country and worldwide.<sup>1,2</sup> Obesity is defined as excess of body fat that results from the interaction of many environmental and genetic factors. In Mexico in 2006, an obesity prevalence of 34.5% was observed in Mexican women aged over the age of 20, while it reached 24.2% in men. As to overweight, the prevalence is higher in men with 42.5% versus 37.4% for the female population.<sup>2</sup> According to official figures from the World Health Organization, in 2008, 1500 million adults (aged 20 and more) were overweight. Within this group, more than 200 million men and nearly 300 million women were obese, worldwide.

Overweight and obesity are risk factors associated with increases in chronic diseases such as type 2 diabetes mellitus, high blood pressure, dyslipidaemias, gout, cardiovascular diseases, osteoarthritis, restrictive pneumopathy, depression, breast cancer, prostate cancer and gastrointestinal diseases, among others.<sup>3,4</sup>

The incidence of the diverticular disease of the colon seems to have increased in recent years, particularly in Occidental countries with a low consumption of fibre in their diet. Other associated factors are age, absence of physical activity and obesity.<sup>5</sup> Several prevalence figures are reported worldwide based on the population group studied and the geographical situation, reaching 60% in people over the age of 70 and 65% in those over the age of 85. Its frequency is low in people under the age of 40, with an incidence of 5–10%. Notwithstanding, it is estimated that 70% of the patients with diverticular disease of the colon are asymptomatic.<sup>6</sup>

**Purpose**

To assess the correlation between obesity and overweight with complicated diverticular disease, which appears as acute abdominal symptoms and requires surgical treatment or urgent interventional treatment to be resolved.

**Material and methods**

A retrospective, observational and descriptive study was carried out of the patients seen at Hospital Juárez in Mexico, with a diagnosis of acute abdomen secondary to complicated diverticular disease of the colon, who required surgical or urgent interventional treatment for its resolution, during the period between 1 July, 2002 and 30 June, 2014.

Patients with complicated diverticular disease of the colon who did not require surgical or interventional treatment and those who were surgically intervened electively due to recurring diverticular disease were not included in this study. Neither were those patients whose complicated diverticular disease manifestation was distal digestive tract haemorrhaging, since the purpose of this study was to compare the degree of complication of the diverticular disease of the colon (according to the Hinchey classification) among obese and non-obese patients that required surgical or urgent interventional treatment.

Inclusion criteria were: all those patients who presented acute abdomen due to complicated diverticular disease and required surgical or urgent interventional treatment, and those who showed in their history the anthropometric measurements corresponding to weight and size, as well as

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