

## ORIGINAL RESEARCH

### A comparative evaluation of management of incisional hernia

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#### ABSTRACT

**Background:** The risk factors for the development of incisional hernia include obesity, diabetes, emergency surgery, postoperative wound dehiscence, smoking and postoperative wound infection. The present study was conducted to compare different treatment modalities of management of incisional hernia.

**Materials & Methods:** 80 patients of incisional hernia of both genders. The consent was obtained from all enrolled patients.

**Data such as name, age, gender etc. was recorded. Routine investigations such as CBC, bleeding time, clotting time etc. was done. Patients were divided into 2 groups. Group I was treated with inlay and group II were treated with sublay technique.**

**Results:** Group I comprised of 28 males and 12 females and group II had 16 males and 24 females. Common complication reported was seroma formation 3 in group I and 1 in group II, wound dehiscence 2 in group I and recurrence 2 in group I and 1 in group II. Risk factors was diabetes was seen in 7 and 5 in group II, obesity was seen in 4 in group I and 2 in group II and smoking was seen in 10 in group I and 13 in group II.

**Conclusion:** Both techniques were comparable in terms of risk factors and complications.

**Key words:** inlay, sublay technique, incisional hernia

#### INTRODUCTION

The exact global incidence of incisional hernia is unknown.<sup>1</sup> Presumably, the wide variation in abdominal approaches, comorbidities among patients and techniques for surgical closure of the abdominal wall leads to a broad range of incidence rates, significantly differing between the various patient populations.<sup>2</sup> In 1985, Mudge and Hughes estimated the incidence of incisional hernia after abdominal surgery in a long-term prospective study to be 11%; however, at the end of the 10-year follow-up, only 60% of patients were available for analysis.<sup>3</sup>

The risk factors for the development of incisional hernia include obesity, diabetes, emergency surgery, postoperative wound dehiscence, smoking and postoperative wound infection.<sup>4</sup> The risks of repairing an incisional hernia which should be explained to the patient when obtaining consent include seroma formation, wound infection, injury to intra-abdominal structures and recurrence.<sup>5</sup> Major complications which can occur in repair of large incisional hernias include mesh infection and enterocutaneous fistula which may result in prolonged morbidity and require re-operation.<sup>6</sup> Surgeons appear to have a reluctance to operate on incisional hernias perhaps because of the poor general condition of the patients but perhaps also due to lack of knowledge of how to deal with the various defects occurring as a result of

incisions of the anterior abdominal wall and the operative techniques required.<sup>7</sup> The modern age of hernia repair began with the introduction of synthetic mesh to reinforce a previous sutured repair. Open pre-peritoneal mesh repair significantly reduced the recurrence rate.<sup>8</sup> The present study was conducted to compare different treatment modalities of management of incisional hernia.

## MATERIALS & METHODS

The present study comprised of 80 patients of incisional hernia of both genders. The consent was obtained from all enrolled patients.

Data such as name, age, gender etc. was recorded. Routine investigations such as CBC, bleeding time, clotting time etc. was done. Patients were divided into 2 groups. Group I was treated with inlay and group II were treated with sublay technique. Ultrasound (USG) abdomen was done in all patients. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

## RESULTS

**Table I Distribution of patients**

Groups	Group I	Group II
Status	Inlay repair	Sublay repair
M:F	28:12	16:24

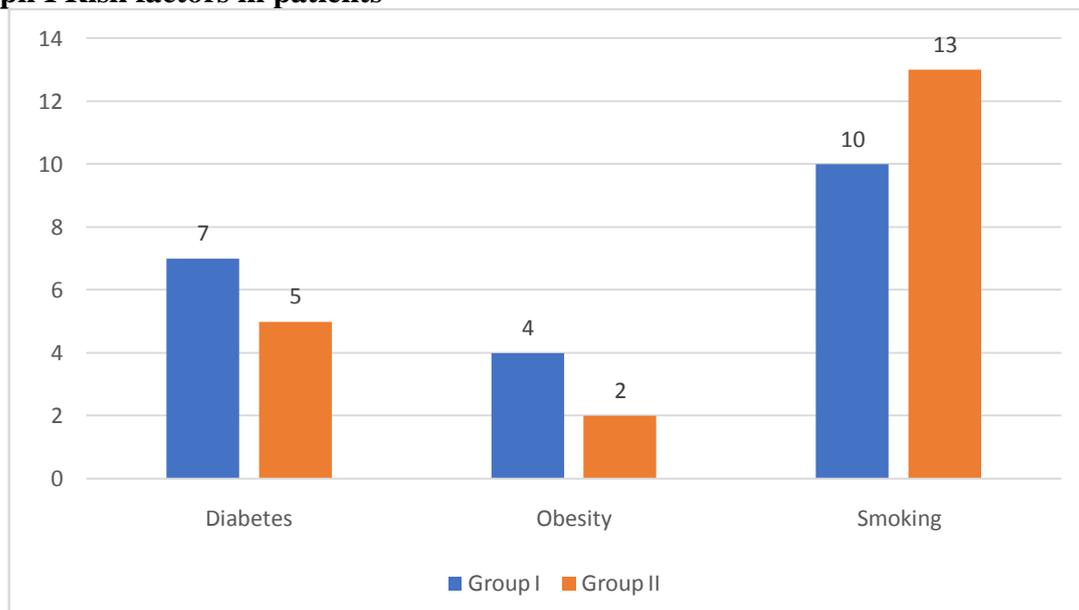
Table I shows that group I comprised of 28 males and 12 females and group II had 16 males and 24 females.

**Table II Risk factors in patients**

Risk factors	Group I	Group II	P value
Diabetes	7	5	0.12
Obesity	4	2	
Smoking	10	13	

Table II, graph I shows that risk factors were diabetes was seen in 7 and 5 in group II, obesity was seen in 4 in group I and 2 in group II and smoking was seen in 10 in group I and 13 in group II. The difference was non-significant ( $P > 0.05$ ).

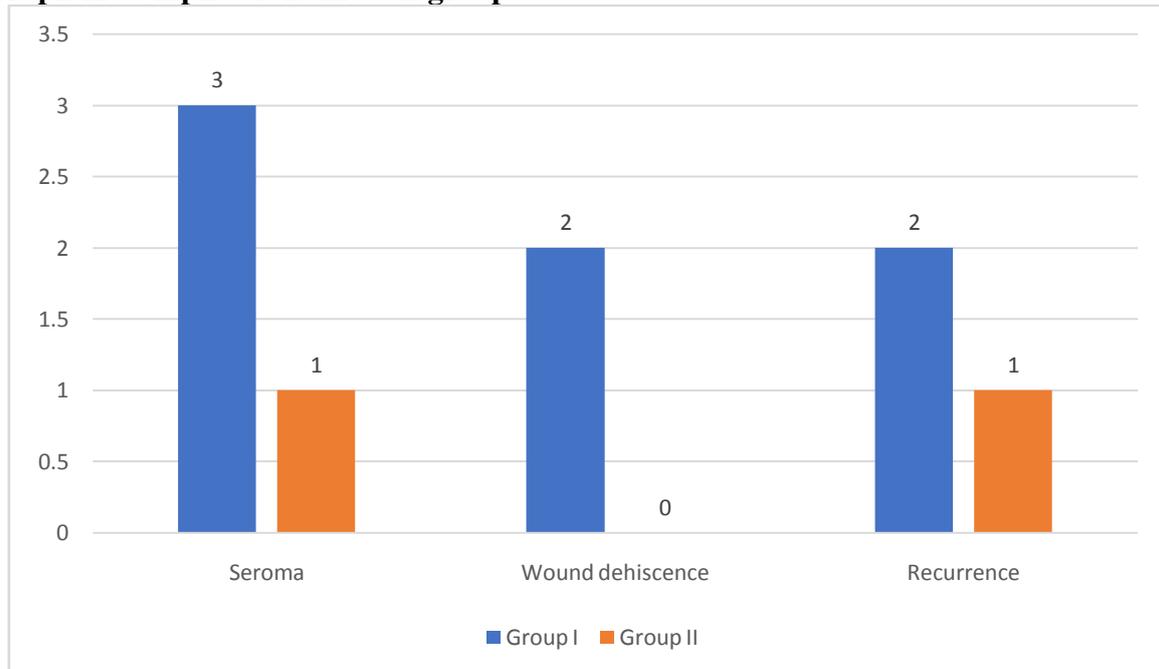
**Graph I Risk factors in patients**



**Table III Complications in both groups**

Complications	Group I	Group II	P value
Seroma	3	1	0.01
Wound dehiscence	2	0	0.01
Recurrence	2	1	0.03

Table III, graph II shows that common complication reported was seroma formation 3 in group I and 1 in group II, wound dehiscence 2 in group I and recurrence 2 in group I and 1 in group II. The difference was significant ( $P < 0.05$ ).

**Graph II Complications in both groups**

## DISCUSSION

Incisional hernia is often only diagnosed during cancer follow-up examinations. In personal communications, this observation has been confirmed by various European surgeons.<sup>9</sup> Patients with incisional hernia usually report rather unspecific symptoms and occasionally experience pain and gastrointestinal problems, such as a postprandial feeling of fullness.<sup>10</sup> Larger hernias may be associated with lesions of the skin overlying the hernia sac or with chronic spinal complaints.<sup>11</sup> If the hernia sac is large, a portion of the small intestine may protrude through the abdominal wall, significantly complicating surgical repair.<sup>12</sup> It is not uncommon that patients with incisional hernia experience social exclusion and are limited in their ability to work. In addition, self-care may be substantially impaired.<sup>13</sup> The present study was conducted to compare different treatment modalities of management of incisional hernia. In present study, patients were divided into 2 groups. Group I was treated with inlay and group II were treated with sublay technique. Kumar et al<sup>14</sup> conducted a study in which group I was treated with inlay and group II were treated with sublay technique. Out of 56 patients, males were 30 and females were 26. Both groups had 28 patients each. Common complications was seroma seen in 2 in group I and 1 in group II, wound dehiscence 1 in group I and recurrence 2 in group I and 1 in group II. The difference was significant ( $P < 0.05$ ).

We observed that common complication reported was seroma formation 3 in group I and 1 in group II, wound dehiscence 2 in group I and recurrence 2 in group I and 1 in group II. Mahmoudvand et al<sup>15</sup> in their study 150 candidate patients for inguinal herniorrhaphy were

randomly divided into two groups: (1) classic group in which the floor of the canal was repaired and the mesh was located on the floor of the canal and (2) preperitoneal group in which the mesh was installed under the canal and then the floor was repaired. The frequency of recurrence was 10 (13.3%) and 2 (2.66%) in the classic and preperitoneal group, respectively. The frequency of postsurgical pain was 21 (28%) in the classic group and 9 (12%) in the preperitoneal group. The postsurgical hematoma was observed in 7 (9.3%) and 9 (12%) in the classic and preperitoneal group, respectively. Also, the frequency of postsurgical seroma was 8 (10.7%) and 1 (1.3%) in the patients treated with the classic and preperitoneal method, respectively. The findings of the present study demonstrated that the preperitoneal method is a more suitable method for inguinal herniorrhaphy than the classic one because of fewer complications.

We found that risk factors were diabetes was seen in 7 and 5 in group II, obesity was seen in 4 in group I and 2 in group II and smoking was seen in 10 in group I and 13 in group II. Langer and colleagues<sup>16</sup>, in a comparative, retrospective study of over 400 incisional hernia operations over a 25-year period, estimated that the most important prognostic factor is the surgeon's experience. For a surgical team to offer a complete service for abdominal wall reconstruction, the following techniques should be mastered: prosthetic materials, abdominal components' separation, tissue expansion, vacuum-assisted closure devices, local and distant muscle flaps, and free tissue transfer. This usually means that the abdominal surgeon will be working in partnership with plastic surgeons.

Dumainian and Denham<sup>17</sup> have brought laparoscopic surgery into this algorithm. These authors have stated that a transverse size of 10 cm is the upper limit for the laparoscopic approach, but some authors have pushed this limit to 15 cm. Laparoscopic incisional hernia repair and the sliding myofascial rectus flap (components' separation technique) are diametrically opposed solutions to the same clinical problem. However, the Ramirez operation can successfully repair hernias as large as 35 cm in transverse diameter achieving abdominal wall closure and no subsequent abdominal compartment syndrome.

## CONCLUSION

Authors found that both techniques were comparable in terms of risk factors and complications.

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