

### **Laparoscopic Repair of Incisional Hernia: A Valid Option**

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Incisional hernia remains a significant complication following open surgical access to the abdomen. Reported incidence varies widely, with estimates of order 10%.<sup>1</sup> In addition, a clinically occult population is also likely to exist, with a large interplay between the primary surgical approach and patient factors contributing to their development. Pain and limitation of daily activities are considered to be the most common indications for elective surgery.<sup>2</sup> Symptomatic herniae impact strongly upon quality of life<sup>3</sup> and risk the development of strangulating or obstructive complications, requiring expedient repair in a compromised patient. Elective surgical repair is not risk-free, with reported incidences of wound complications and persisting post-operative pain in up to 12% and 28% open mesh repairs respectively.<sup>4</sup> Techniques of repair and the types and quality of biomaterials have evolved in conjunction with other aspects of hernia surgery. Simple suture repair, with a recurrence rate of up to 54% was generally superseded by the introduction of prosthetic mesh materials.<sup>5</sup> However, recurrence persists in a significant minority. The widely practiced 'onlay' mesh technique has been associated with recurrence in up to 27%.<sup>6</sup> Infection, (14%) and formation of seroma (28.9%) are still significant problems after open mesh repair.<sup>7,8</sup> With an ageing population and improving survival across a spectrum of surgical interventions, this problem can only be expected to grow.

Laparoscopic repair of ventral incisional hernia is a technique in relative infancy. The evidence base lacks large, multicentre randomized control trials. However meta-analyses point towards the technique as offering improved outcome, particularly in the short term. The technique has been demonstrated to be safe in all patient groups including the elderly and obese.<sup>9,10</sup> It may be performed under spinal anaesthetic in selected patients.<sup>11</sup> In one meta-analysis of 8 studies comparing open and laparoscopic ventral incisional hernia repair was associated with a 50% reduction in the rate of peri-operative complications, conferring an equivalent reduction in the length of hospital stay.<sup>12</sup> Large studies from experienced centres have demonstrated reductions in wound infection rates to as little as 1.8%.<sup>13</sup> This has been further supported by more contemporary meta-analysis.<sup>14</sup> Additionally, the newer technology has not proven to increase the expense of incisional hernia repair.<sup>15</sup> Shorter in-patient stays contribute towards the cost-effectiveness to the

extent that the possibility of day case abdominal incisional hernia surgery has been explored. Small feasibility studies indicate that safety and outcomes are not impaired in this setting.<sup>16</sup>

Long-term benefits remain under-investigated, particularly with reference to recurrence rates and quality of life, with maturing study groups demonstrating some degree of parity between the two techniques.<sup>14</sup> Extended follow up will demonstrate whether true differences exist, accounting for the learning curve of surgeons and the ongoing development of designed-for-purpose laparoscopic materials and repair techniques. Current evidence then suggests that laparoscopic repair of incisional hernia will add to the armamentarium of the experienced laparoscopic surgeon, providing patient benefit without undue financial burden.

A literature search on PakMedinet, Medline, Pubmed and Google on the subject has not shown any studies published from Pakistan to date. More and more surgeons are moving over to the mesh repair of all types of external hernia including incisional hernia using laparoscopic technique. A study from India, where the demographics of patients are more or less similar, has shown this technique to be a safe option with low complication rates.<sup>17</sup> Wound infection remains one of the most important contributing factors in the development of incisional hernia after emergency abdominal surgery and remains a significant complication after open mesh-repair of incisional hernia. Laparoscopic repair of incisional hernia offers significantly low infection rate along with other benefits of minimally invasive surgery including reduced pain and quicker recovery. Improved cosmetic and aesthetic outcome is an additional advantage in some cases, although this is not the primary indication for repair even with open technique.<sup>2</sup> In Pakistan, open repair of incisional hernia with Mesh has become established for many years.<sup>7,8,18,19</sup> Appropriate training and mentoring to acquire skills will develop this new technique and also will prevent untoward complications. Time has come for surgeons to consider laparoscopic approach as a valid option to offer to their patients, especially when obtaining informed consent.

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