Laparoscopic management of Spigelian hernias

CRD summary
The review concluded that management of spigelian hernias was safe and effective in elective and emergency settings. Potential for bias, substantial methodological flaws and a very limited evidence base mean that the authors’ conclusions should be treated with caution.

Authors' objectives
To assess the safety and effectiveness of the laparoscopic approach to the management of Spigelian hernias.

Searching
PubMed, EMBASE and The Cochrane Library databases and Google Scholar were searched for studies published in English up to October 2009; search terms were reported. Reference lists of retrieved articles were searched.

Study selection
Published studies of any type that reported on a case or case series of patients with acute, chronic, strangulated, incarcerated or irreducible Spigelian hernias or asymptomatic Spigelian hernias managed on an elective or emergency basis using the laparoscopic approach were eligible for inclusion. Studies of paediatric hernias and studies that reported on the open approach were excluded. Studies where data extraction was not possible were excluded.

More than half of the procedures were performed electively and a few were performed in the emergency setting. Laparoscopic approaches included intraperitoneal onlay mesh, transabdominal preperitoneal patch, total extraperitoneal patch and laparoscopic suturing. In a small proportion of cases, concurrent conditions were managed simultaneously. Studies were undertaken in UK, USA, China, Spain, Turkey, France, India, Holland, Italy and Australia.

The authors did not state how many reviewers selected studies for the review.

Assessment of study quality
The authors did not report whether quality assessment of the included studies was performed.

Data extraction
Data were extracted on complication and recurrence rates.

Two reviewers independently extracted data. Discrepancies were resolved by consensus.

Methods of synthesis
Studies were synthesised in narrative format.

Results of the review
Thirty-three studies (84 cases of Spigelian hernias) were included in the review. Most studies were case reports of either one or two cases. One study was a randomised controlled trial that compared open with laparoscopic repair. Follow-up ranged from three months to 10 years.

In participants with successful laparoscopic repair of Spigelian hernias, there were no recurrences and no conversions. Two cases (2.3%) had complications (seroma formation and subcutaneous ecchymoses). Reported hospital stays ranged from a few hours to nine days. The single RCT (22 participants) among the included studies reported that, compared to open repair, the laparoscopic approach was associated with a significant reduction in morbidity and hospital stay (figures not reported). Ninety-one per cent of patients in the laparoscopic group were treated as outpatients versus nine per cent in the open repair group.

Authors' conclusions
The laparoscopic approach for the management of spigelian hernias was safe and effective in elective and emergency settings.
The review addressed a clear research question supported by broad inclusion criteria (which included any study type). The studies were described as being successful cases of laparoscopic management of Spigelian hernias and thus were unlikely to answer adequately the question on effectiveness and safety and only one study compared outcomes with open repair. Several resources were searched to identify studies published in English, without explicit attempts to find unpublished studies, so language and publication bias could not be ruled out. Appropriate methods were used to extract data. The authors did not state how many reviewers selected studies so reviewer bias error and bias could not be ruled out. Quality assessment was not reported and was unlikely as most studies were case reports of one or two participants.

Synthesis of studies was appropriately performed in narrative format but outcomes were mostly not compared with alternative procedures, so it was difficult to interpret the results. One small randomised controlled trial was identified that compared laparoscopic with open repair and reported benefits for laparoscopy compared to open repair with respect to morbidity and hospital stay. However, the settings differed between comparison groups with most patients being treated on an outpatient basis in the laparoscopy group and few were treated in this setting in the open repair group, so setting was likely to have confounded the findings.

Potential for bias, substantial methodological flaws and a very limited evidence base mean that the authors’ conclusions should be treated with caution.

**Implications of the review for practice and research**

**Practice:** The authors stated that surgeons should be aware of the available laparoscopic techniques for repair of Spigelian hernias as these were often diagnosed during laparoscopy.

**Research:** The authors stated that larger series and RCTs were needed with adequate patient follow-up, particularly in respect to emergency settings.

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