Mesh abdominal wall hernia surgery is safe and effective—the harm New Zealand media has done

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ABSTRACT
Patients in New Zealand have now developed a fear of mesh abdominal wall hernia repair due to inaccurate media reporting. This article outlines the extensive literature that confirms abdominal wall mesh hernia repair is safe and effective. The worsening confidence in the transvaginal mesh prolapse repair should not adversely affect the good results of mesh abdominal wall hernia repair. New Zealand general surgeons are well trained in providing modern hernia surgery.

An abdominal wall hernia is a weakness or defect in the abdominal wall that allows abdominal organs to protrude through. For the purpose of this paper the term abdominal wall hernia will include ventral abdominal and groin hernia. Hernias sometimes cause no symptoms, however, many will cause symptoms including pain, bowel obstruction or bowel ischaemia. Hernias can significantly reduce quality of life and even cause death. For patients with significant symptoms, treatment is required as hernias don’t get better by themselves and generally they will enlarge and deteriorate over time.¹

Surgical repair is the only effective treatment for hernias. The two main techniques are simple suture repair of the defect versus closing the defect with mesh reinforcement. Suture repair has been available since anaesthesia was invented in the 1800s.² However, with the introduction of simple suture hernia repair it quickly became apparent that hernia recurrence with this technique was frequent. This then led to hernia repair with tissue reinforcement using mesh. The earliest mesh repair was in 1900, where a silver wire mesh was used. During the following 117 years, there has been a continuous improvement in mesh technology. Synthetic meshes were developed after World War II. Over the last 20 years, mesh abdominal wall reinforcement has become the international accepted standard of care.³ Modern hernia mesh is purpose designed and has become very sophisticated.

In a 2002 Cochrane systematic review of mesh versus non-mesh groin hernia repair, there was no difference in complications between groups.⁴ There was a suggestion that patients in the mesh repair group had an earlier return to normal activities and they had less persistent pain. Due to a New Zealand patient fear of groin hernia mesh surgery, patients are now requesting sutured groin hernia repair as an alternative. The best non-mesh sutured open groin hernia repair is the Shouldice procedure. This is a four-layer suture repair under tension using either polypropylene or stainless steel suture. The best available evidence comparing the Shouldice procedure to mesh groin hernia repair reveals no difference in postoperative complications or chronic pain between the two different procedures. However, the hernia recurrence rate was almost four times higher in the Shouldice...
On the basis of the current available evidence the European hernia society has recommended that mesh should be the first choice for inguinal hernia repair. In a recent systematic review and meta-analysis of primary and incisional ventral hernia repair, mesh reduced hernia recurrence by 50 to 75% compared to suture repair. It has been shown on a population-wide analysis that hernia recurrence increases linearly with time beyond five years. For incisional hernia, recurrence rates after suture hernia repair are up to 63% at 10 years. This rate of failure is unacceptable not only from a futility point of view but also in terms of financial waste of precious healthcare money.

In 2004, the long-term results of a randomised control trial of sutured versus mesh incisional hernia repair was reported from the Netherlands. One hundred and eighty-one patients with incisional hernias were randomised to either suture or mesh hernia repair. The 10-year cumulative rate of hernia recurrence was 63% for suture repair and 32% for mesh repair ($P<0.001$). There was no statistical difference in complications between the groups. Abdominal pain was more frequent in patients who had suture repair. The authors of this study concluded that suture hernia repair should be abandoned.

In the last 15 years, there has been a rapid transformation in the progress of hernia surgery. There is now worldwide a significant expansion in hernia research, innovative techniques and a focus on patient-related outcomes. Complex hernias that 10 years ago were considered inoperable can now be reliably repaired with dramatic improvements in patient quality of life. Even for complex massive hernias, recurrence rates of 4.7% are being achieved with acceptable morbidity. From a biological point of view there are good reasons why suture hernia repair fails, particularly for larger ventral abdominal wall hernias. There is strong evidence for a genetic inheritance of hernia development. Patients with incisional and groin hernias have been shown to have weakened connective tissues. The strength of these tissues is due to collagen. However, in patients with hernias there is a dominance of weaker and poorly connected collagen III rather than the stronger collagen I fibres. Also, these patients have a greater degradation of these collagen fibres due to an excess of matrix metalloproteinases. Therefore it is unreasonable to expect weakened tissues that have failed and created a hernia to adequately heal when sutured together.

The New Zealand media have over previous years, done great harm to the reputation of mesh abdominal wall and groin hernia repair. They have published multiple articles claiming that mesh is unsafe and unproven. That is simply not true. Patients whom require abdominal wall hernia repair are now fearful of mesh. New Zealand general surgeons are well trained in modern hernia surgery and the management of complications. Hernia repair can involve a complex analysis of risks and benefits of different management options. Patients should discuss issues around mesh with their general surgeon and consent for surgery should be based on shared decision making.

It is very important for the public to understand that transvaginal mesh repair has a different risk profile compared to abdominal wall mesh repair. Transvaginal mesh is placed into the vaginal wall in an attempt to treat pelvic organ prolapse. Transvaginal mesh was introduced into the US in 2005 with no clinical efficacy and safety data. It was initially presumed to be as safe as abdominal wall hernia mesh repair. However, over time there were increasing reports of significant problems with this mesh technique, including mesh erosion, chronic pain, mesh infection and dyspareunia. From 2011, many of these mesh products were removed from sale by device companies. Many patients then began class action lawsuits against the device companies. There now remains on the market some new lightweight permanent transvaginal meshes. Controversy still remains among experts in regard to assessing the risk/benefit profile of these meshes and how they should be utilised. One opinion is that they can be used for recurrent prolapse. The opposite opinion from a recent Cochrane systematic review is that the mesh should only be used at the discretion of an ethics committee. In 2014, a private petition was sent to the Health Committee, requesting an independent
inquiry into the safety of surgical mesh in New Zealand. ACC then undertook a retrospective audit review of treatment injury surgical mesh claims from 1 July 2005 to 30 June 2014. Over this time period there were 181 abdominal wall hernia repair claims and 131 transvaginal mesh claims. Data from Medsafe showed there were 56,508 mesh devices sold in New Zealand during the same time frame. The calculated percentage of complications for each procedure that resulted in a treatment injury claim was 0.6% for abdominal wall hernia and 3.3% for transvaginal mesh. Although it is possible that not all complications resulted in a treatment injury claim, two conclusions can be drawn. The New Zealand complication rate for abdominal wall hernia repair is low and numerically the complication rate was 5.5 times more likely with a transvaginal repair.

It is time for the New Zealand media to accurately report on hernia mesh and to undo the harm that has been done. The public needs to be informed that mesh for abdominal wall hernia repair is safe and effective.

Competing interests: Nil.

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