An innovative repair for a re-recurrence of an incarcerated inguinal hernia

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ABSTRACT

A patient presented with a recurrent incarcerated inguinoscrotal hernia requiring urgent surgery. The defect was through the gap in the mesh left originally for the cord structures. As a result, a modified funnel repair was performed. An innovative approach was adopted that was best suited to tackling and reducing the risk of recurrence.

KEYWORDS

Inguinal hernia – Mesh – Herniation – Defect

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Case History

A 49-year-old Caucasian man presented with an incarcerated re-recurrent right inguinoscrotal hernia on 9 October 2013. The hernia had increased in size, was tender and was affecting his mobility. An elective right inguinal hernia repair had been carried out in 2008 and an emergency mesh repair in 2010, with ileocaecal resection for a strangulated hernia. On examination, he had a large, tender, irreducible right inguinoscrotal hernia with overlying erythematous skin changes.

At surgery, the patient was found to have a large inguinoscrotal sac herniating through the defect (5cm × 3cm) in the previous mesh left for the cord structures. The sac was dissected from the cord structures, mobilised and returned to the abdomen. Polypropylene mesh, in two pieces, was inserted and sutured into the edge of the defect, medial and lateral to the cord. The two meshes were then sutured together around the cord to create a funnel. The fascia was closed over the mesh before wound closure.

Figure 1 illustrates how both medial and lateral meshes were secured into the defect and around the cord structures. Figure 2 shows the funnel shaped repair with a wide mouth tapering to a small hole, allowing the cord structures to pass through normally and held in place by suturing each piece of mesh together.

The postoperative course was uneventful and the patient was discharged on 13 October 2013. A follow-up report at eight weeks following discharge revealed he was clinically well, the wound had healed and there was no evidence of recurrence.

Discussion

Inguinal hernias are the most common of abdominal hernias, classified according to their relationship to the

inferior epigastric artery as direct and indirect. The recurrence rate of an inguinal hernia following primary hernia repair ranges from 0.5% to 15%.¹

In a review by Gallegos *et al*, the probability of strangulation of an inguinal hernia was reported as 2.8% at three months and 4.5% at two years.² The incidence of complications of recurrent inguinal hernia is unknown. Nevertheless, quantifying the risk had shown the rate of strangulation increased in relation to length of history.

The Bassini repair described in 1887 illustrated the essential steps in tissue repair. The technique consisted of exposing the spermatic cord and reconstructing the canal's posterior wall, approximating the internal oblique muscle, transversus abdominis muscle and transversalis fascia to the edge of the inguinal ligament with interrupted sutures under tension. There have been various modifications of Bassini's original technique. However, the incidence of recurrence with this approach is between 1.9% and 32%.³ Pielaciski *et al* indicated that recurrences could occur owing to various causes such as age, body mass index (obesity), suture material, surgical technique, type of repair, length of surgery and previous hernia strangulation.⁴

Bisgaard *et al* reported that in 67,306 primary hernia repairs there were 2,117 reoperations (3.1%) and 0.28% of original hernia repairs (187 cases) required re-reoperation,⁵ indicating that if a repair fails once, it has a higher incidence of subsequent failure. Repair of recurrent hernias therefore needs a 'tailored' approach to reduce the rate of further recurrence.

There are different repair techniques used for inguinal hernias. Currently, the most commonly performed operation is with the tension free methods. Complications include chronic

pain, ejaculation disorders, mesh folding, infection, adhesions, and mesh migration and erosions into nearby structures.⁶

The most effective method for repairing an inguinal hernia in any given patient is not clearly defined.⁷ The repair of recurrent inguinal hernia after mesh repair is usually a difficult operation, as is mesh removal or replacement.

Conclusions

Our patient presented with a second recurrence following an inguinal hernia repair. The inguinoscrotal hernia was large and had become incarcerated. The anatomy was complicated owing to dense fibrosis. The hernia had developed through a defect in the mesh designed to allow passage of the cord structures only. An improvised repair was devised, creating a funnel around the cord. Laparoscopic reduction and repair was unsuitable because of the previous surgery, bowel resection and large inguinoscrotal incarceration. The 'funnel' technique seemed suitable.

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