The ‘DIY Plug’ – A cost effective plug hernia repair

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The Royal College of Surgeons Working Party recommends the Lichtenstein ‘tension free’ mesh repair, to be the treatment of choice for inguinal hernia repair in adults. It is a relatively easy, and a quick procedure to perform, can be mastered by junior staff, and can be done as a day-case under local or general anaesthesia. It is well tolerated by patients, and has very low reported recurrence rates.

In the U.S.A., the trend has been more towards a suture-less plug and patch repair. Lichtenstein first described this in 1974. This method has shown good results in the U.S.A., and U.K. centres are starting to publish their results. This method has several advantages; the incision is smaller, there is less dissection involved, operative time is shorter, and postoperative pain is less. Patients tend to make a faster recovery, and their time to return to full activity and work is shorter.

Plug migration is a rare complication, but is overcome by the use of tacking sutures between the hernial orifice and the mesh plug. In 1974, Lichtenstein was repairing femoral hernias and recurrent inguinal hernias by plugging the defect with a rolled up piece of mesh. Gilbert, in 1991, popularized the suture-less repair with a cone shaped ‘umbrella’ mesh plug formed from a sheet of flat mesh. Robbins and Rutkow modified this plug to form the commercially available PerFix plug system. We have developed a similar plug, ‘the DIY plug’ (Do It Yourself plug) folded from half a standard sized 15 x 15 cm sheet of flat prolene mesh (Surgipro™ mesh, United States Surgical/Autosuture, Norwalk, CA, USA). Starting at one edge, the first piece of mesh is folded to create a series of 1-cm pleats. This is then folded in half to form a fan or shuttlecock shape. This plug can then be inserted into the reduced hernia sac and held into position with tacking sutures. The other half of the mesh is then placed on the posterior wall as reinforcement.

Recurrence rates are comparable to the onlay mesh repair but postoperative pain, bleeding, and bruising are less and return-to-work time is shorter. The main disadvantage of the preformed mesh plug repair is the cost of the plug. This is approximately four times that of the standard flat mesh.

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The important difference in today’s cost-cutting envi-
The cost is one-fourth that of the commercial system, $40 vs $153. So far our series is small; however, home-made plugs have been used for many years with good results. There is no reason to suggest that this technique is in any way inferior to either the standard 'tension free' repair or to the other plug repair systems. We find the 'DIY plug' method particularly useful for recurrent inguinal hernia repair. One possible advantage of our fan or shuttlecock-shaped plug is that once inserted it tends to hold itself into the defect as the pleats try to unfold.

For any surgeon wishing to perform mesh plug repairs within a limited budget we recommend this 'DIY plug' repair.

REFERENCES


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