24

Birch C[1], Fynes M[2]
1. St. George's Hospital Medical School, 2. t. George's Hospital Medical School

MESH EROSION COMPLICATING VAGINAL SURGERY FOR THE CORRECTION OF POSTERIOR COMPARTMENT PROLAPSE

Hypothesis / aims of study

To evaluate the incidence and management of mesh erosion following vaginal surgery for the correction of recurrent posterior compartment prolapse.

Study design, materials and methods

Between 01.09.2001-01.09.2002 all women undergoing Bilateral iliococcygeus fixation (BIF) and posterior fascial repair (PFR) with polypropylene mesh interposition for recurrent recto-enterocele and rectocele were evaluated. Peri-operative details including age, parity, menopausal status, HRT usage and previous prolapse surgery. In each case a standard prolapse symptom questionnaire was completed and vaginal examination undertaken to evaluate integrity of the vaginal tissues and genital support using the modified Baden Walker classification system. PFR with mesh interposition was performed in an identical manner with the exception of the BIF. BIF fixation was performed using a modification of the description by Immon (1963). In each case antibiotics were administered (Metronidazole and Cephadrine) intra-operatively and catheter drainage performed for 24-48 hours following surgery. All women were followed up at 6 weeks, 6 and 12 months following surgery. At follow-up symptoms of prolapse, pain, dyspareunia, discharge and bleeding were recorded and examination performed to assess vaginal support and exclude mesh erosion. Where erosion was identified the site and extent of the defect were recorded. Those with erosion were treated with oral antibiotics and topical oestrogen therapy for a minimum of two weeks. Where the erosion failed to re-epithelialise surgical intervention was undertaken. The decision to 1) oversew, 2) trim and oversew or 3) excise and oversew was at the discretion of the surgeon and dependant on the size of the eroded area and the integrity of the vaginal tissues. All women were continued on antibiotics and topical oestrogen following surgery. Where persistent mesh erosion was identified then re-excision of as much mesh as possible was performed. All women affected were followed up at regular intervals. Analysis of risk factors was performed for women who sustained an erosion compared to those who did not.

Results

Twenty-one women underwent a BIF and 5 a PFR with polypropylene mesh interposition. All of these women had a recto-enterocele or rectocele $\geq$ Grade 2 and had undergone one or more previous prolapse operations. Mesh erosion was identified in 10/21(48%) following BIF and 1/5(20%) following PFR (p=0.5, Yates corrected Chi squared test). The mean age for those affected was 61 years (R51-73) and mean parity 3(R2-4). Five (45%) were on HRT and 4(36%) had significant vaginal atrophy prior to prolapse surgery. Only 6(55%) were sexually active. Most erosions were symptomatic and occurred early following surgery. The mean duration to recognition was 5.5 months (R2-13). In women who had undergone a BIF procedure the most common site of erosion was in the upper third of the posterior vaginal wall midway between the sites of fixation to the iliococcygeus fascia. There were no significant differences between these parameters for women who sustained a recognised erosion compared to those who did not. The mean intra-operative blood loss for those who sustained mesh erosion was 650mls (R 50-4000). Two women who developed subsequent erosion had an estimated blood loss in excess of 1000mls. One of these was also complicated by significant vaginal infection. All women were treated with topical oestrogen and antibiotics. At follow-up in two cases the vagina had re-epithelialised. In both of these cases only a small number of mesh fibers were exposed. The remaining eight required surgical correction and of these 3 required repeat excision and oversew . At a mean of 12.2 months (R7-15) no woman had a recurrence of rectocele or enterocele > grade 1.

Interpretation of results

In this study most women undergoing recurrent prolapse surgery with mesh re-inforcement were postmenopausal and not taking HRT. Despite this there were no significant differences in age, oestrogen status or HRT usage between those who sustained an erosion compared to those who did not. There were insufficient numbers of younger women however, to positively exclude these parameters as contributory factors. Although only one woman had evidence of frank vaginal infection prior to erosion of the mesh other women may have had subclinical infection and it is likely that clinically evident infection may be an important factor particularly as most of these cases were recognised in the early post-operative period. Although all women received peri-operative antibiotic prophlyaxis not all women were treated with pre-operative topical HRT. Post-operative antibiotic administration may have been for an insufficient period of time. In addition, the routine use of post-operative laxatives and a bulking agent in this cohort to avoid defecatory straining may have increased the risk of faecal contamination of the posterior vaginal wall incision. The type of operative repair and suture material employed may also be contributing factors. Iliococcygeus or sacrospinous fixation may cause tension across the vaginal incision predisposing to extrusion of the graft, which may be increased by bilateral fixation. In this study, 1 in 5 women developed vaginal erosion where PFR alone was re-inforced with a polypropylene graft compared to almost 1 in 2 where this procedure was combined with BIF. It is of interest that in almost all of the cases in the latter group, the site of erosion was below the apex midway between the points of iliococcygeus fixation where the repair was under greatest tension. In some of these cases a clear 'bow string' was palpable. There were insufficient numbers of women who underwent PFR with mesh without fixation to determine the significance of this factor.

The surgical approach to mesh erosion depends upon the degree of erosion. Excision of mesh must depend upon a balance between the risk of recurrence of erosion if too little is removed and the risk of prolapse recurrence if too much is removed. In our experience recurrent mesh erosion is more likely to re-occur in patients in whom the excision was limited and vaginal closure performed in a single layer. Based on our experience, we would recommend a more aggressive surgical approach to primary excision of the eroded material. Although only short-term follow-up is available for this series, there have been no cases of recurrent posterior compartment prolapse in women where more than 50% of the graft was excised.

Although the numbers of cases in this series, are small the findings are important and have altered our surgical practice. In women undergoing BIF with graft re-inforcement we no longer place the BIF sutures through the graft and the vaginal mucosa. The BIF sutures are placed more laterally through the vaginal mucosa to reduce tension when secured across the posterior vaginal wall incision. To further reduce the risk of apical erosion, the mesh is anchored at its lateral, cephalad, and caudal limits taking care to fashion the mesh to the exact limits of the space so that the graft is not under tension.

Concluding message

Mesh erosion is common following vaginal surgery for recurrent posterior wall prolapse employing a synthetic graft with prespinous fixation. Management of this complication may be problematic and re-inforcement with autologous/allograft or xenograft prostheses should be considered as an alternative to synthetic grafts in future.